The Origin of Specis

(or, nearly everything you wanted to know about patents, but couldn't be bothered asking)

Teemacs
Intellectual property services

About the Author…

(with apologies to Gilbert and Sullivan)

When I was a lad, I served a term
As patent tech. assistant in a big paint firm
I wrote applications and I argued and tried
Patent offices to show that grant was justified
And this sort of thing so suited me
That now I'm patent attorney in industry.

Acknowledgement

My grateful thanks to all of you out there who helped me with this revised version by offering comments, corrections, criticisms, suggestions and advice, some of which I ignored, which is why the booklet still exists. The responsibility for any errors (not to mention the mediocre drawings and terrible jokes (or is it mediocre jokes and terrible drawings?)) is entirely mine. The responsibility for any views or opinions expressed herein is also entirely mine.

N.B.

Most costs mentioned herein were correct (more or less) at June, 2015, but, because of the tendency of official fees to fluctuation (and exchange rates to go up and down like yo-yos), and the consequent work of constantly adjusting them, they have been left as they are and are there to be general guides only.

Note: changes to US Law

On 16 March 2013 (thus missing by one day the Blessing of St. Patrick on the entire enterprise), the Leahy-Smith "America invents" Act (AIA), the most significant change to US patent law in half a century, came fully into effect. However, much of the current US patent law and practice will remain valid for applications filed before 16 March 2013, and to at least 15 March 2034, by which time many of us will be past caring.

As a result, the previous commentary will remain, with occasional comments (in blue, just like this) as an indication of changes made. Even now, much of the substance of the AIA remains controversial, and attempts have been (and continue to be) made by the introduction of legislation to restore the US system to the supposed golden age that existed prior to the AIA.

For anyone remotely interested, the major changes are outlined in Appendix M. However, I suspect that, to quote Francis Albert Sinatra, the best is yet to come…

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Alphabetical Glossary of Patent Terms

Hors d'oeuvres

Mything in action…some common misconceptions about patents

These will arise later in the text, but let's kill them off right now:

1. Having a patent gives you the right to practise your invention

No. A patent is a negative right – it allows you to prevent someone else from working the invention. This often amounts to the same thing – but not always. Your patent may fall completely within the scope of an earlier patent.

2. Having a patent gives you freedom to operate.

No. Your patent could fall within the scope of a broader, earlier patent, and working it may constitute an infringement of that earlier patent.

3. You can sue infringers when you have a patent application.

No. For a start, "infringement" by definition is working within the scope of a granted patent. So, until there is a granted patent, there can be no infringement. Indeed, there may never be any infringement - if you have claimed A-Z originally, and someone starts making and selling G, if your patent is finally limited to H-R, you can do nothing about it.

4. You can sue for infringement the owner of a later patent that falls within yours

No. A third party merely having a patent whose scope falls within yours is not infringement. The third party has to make and sell to infringe.

5. If you have a patent covering a variety of uses, someone filing a patent on a use not mentioned is outside the patent, and can even patent it and stop you.

No, except in particular circumstances. The so-called "application patent" (getting a patent on an unmentioned but obvious use) is roughly as real as Bigfoot and the Loch Ness Monster. For example, if a patent covers "oral care products" and fails to mention toothpaste, it is not possible for someone else to patent toothpaste, and any attempt to market toothpaste will infringe. The only way to get a patent on an unmentioned use is by means of a "selection patent" (see p.96). And the owner of the selection patent will still be dominated by the earlier patent and cannot work the patent without permission.

6. You can publish your invention and patent it afterwards.

Only true for about 30 countries in the world, which have so-called "grace periods", which allow disclosure prior to application without penalty. The USA is the best-known example, but the AIA has narrowed considerably the scope of its grace period. Most countries in the world have so-called "absolute novelty" – publication of any kind prior to filing invalidates any patent – and that includes prior publication in a grace period country.

7. You can patent an invention and keep secret essential information on its implementation.

No. All patent laws require that there must be sufficient information to work the invention without the proverbial skilled person either having to reinvent it or to do an enormous amount of work to distinguish what works from what doesn't. Inadequate information can invalidate a patent.

8. You can file a vague and general first application and fill in all the details in a later application and have the filing date of that first application for everything.

No. The new information will constitute “new matter” and take as its filing date the date of its actual filing, not the date of the first application.

9. All the members of a team that came up with an invention have the right to be mentioned as inventors.

No. Only those who made an inventive contribution (i.e., who contributed a particular aspect of an invention, which was included in the application) must be included. So, not the boss who only gave general direction at one end, or the lab assistant who only did what s/he was told on the other. The making of a false declaration on inventorship can invalidate a patent.

10. You can get a world patent

No. Patents are granted on a national or regional basis. Patent documents with the WO code are International applications under the Patents Cooperation Treaty (PCT) (see p.75). PCT applications never become PCT patents.

11. You can get a patent covering the whole of the European Union.

Not all of it, but a substantial part of it.

The current so-called European Patent is really a single application/search/examination/grant/-opposition proceedings that results in a bundle of national patents, which then proceed independently (e.g., you can drop Germany and keep the UK).

There is now the possibility of requesting a unitary effect for 17 EP countries, with more countries to come (25 signatories, 8 ratifications outstanding). This will be presided over by a central Unified Patent Court which will deal with infringement and validity issues UPC and unitary patent commenced activities on 1 June 2023. Whether June will bust out all over or the whole thing will be a bust remains to be seen.

"The Origin of Specis" (Patent Specifications)

BASIC FACTS

(a.k.a. the short, slightly less boring version
- the long, *really* boring version starts on p.15)

1. About patents in general…

1. I have a problem with/question about patents – what should I do?
(a) Read this book (or at least these Basic Facts). If that doesn't give you the answer, (b) see your patent attorney. If s/he doesn't know the answer, s/he'll know someone who does. This is a very specialized field and there's no substitute for expert advice.

2. What is a patent?
In a nutshell:

A patent's for novel invention
That's useful too, and its obtention
Gives the power to prevent
Things however well meant
That are in, of your rights, contravention.

Essentially, it's an agreement between the owner of an invention and the government of a country, in which the owner agrees to publish his/her invention, and in return the government agrees to give the owner exclusivity on the use of the invention for a limited time.

3. First things, first – what's an invention?
Something that's new and that has practical application.

4. Any practical application? So, I can patent Aunt Agatha's great recipe for fruit cake and sell it to the highest bidder?
Well, no. Even assuming that Aunt Agatha, generous soul that she is, hasn't shared the recipe with half the neighbourhood (which undermines the "new" bit), there are certain things that are inherently unpatentable, practical and useful though they might be – and mere admixtures of known ingredients such as cake recipes fall into that category. Usually "practical application" means capable of industrial application. But what's patentable varies from country to country. See further on pp.16 & 27.

5. What's the problem with "new"? OK, she shared it with everyone in the church fête the other week, but the recipe is indeed new!
Then, in patent terms, it is no longer new. The word that patent folk use is "novelty". For an invention to have novelty, it must not have been published before. The nature of this publication again varies from country to country, but most countries now accept what's called "absolute novelty" – any type of publication (print, oral, use in public) in any language anywhere in the world destroys novelty. See further on p.32, If Aunt Agatha were resident in the USA, things would be different – the USA and some other countries have a so-called "grace period", which allows you up to a year after publication to file. But there are relatively few of these countries.

If you want to show your invention to someone prior to filing a patent application on it, you need a confidentiality agreement, preferably in writing (a verbal agreement is acceptable in most places, but a written and signed one is best)

6. Speaking of publishing, did you say in 2 that I had to agree to publish as part of the deal? I don't get to keep it secret?
Afraid not. This is the bargain you make – if you get a patent, that patent is published.

7. So, if I have an invention that can't be detected by inspection or analysis, such as a super new process for making a known product, wouldn't it be more sensible for me to work it secretly and have an everlasting monopoly?

Secret use is always an option in such cases, and it sometimes may be the way to go. If you patent, you publish, and if the only way of telling that your competitor is infringing is by resorting to industrial espionage, it might have been better not to patent. However, secret use has its drawbacks. For one thing, if someone comes up with the idea independently, you can't stop them. And things are more complicated in the USA. For more, see **Secret Use** on p.60.

8. What if I start to patent and change my mind and want to keep my invention secret? Can I?

Generally yes. Nearly all patent offices publish patent applications automatically 18 months from the date of first filing, so if you request withdrawal before that 18 months expires, you can keep it secret. How close you can get to that 18 months before requesting and still avoid publication depends on the individual patent office.

9. Speaking of secrecy, at what point can I tell the world about my invention? Only when I have a patent?

It depends on the country. In the "absolute novelty" countries (see **5** above), any public disclosure of any kind before filing a patent application is fatal to the application. However, once you've filed your application in such a country, you can go out and immediately shout it from the rooftops. The "grace period" countries will let you publish your invention prior to applying for a patent, provided you file your patent application within one year of that first publication. More on p.63.

10. If I just want to do or make something and not patent it, I don't have to bother with all this hoo-hah, right?

Wrong, in the biggest possible way. You have to make sure you don't infringe anyone else's patent. Freedom to operate is **much** more important than having a patent yourself. If you can't patent an idea, it's a pity, but hardly the end of the world – it just means that you may not be able to prevent competitors from copying you. However, if you make and sell something covered by someone else's patent, it might just be the end of your world. See under *Infringement* below and further on p.100.

11. But how do I do that?

As a person involved in a technical area, you will already know a lot about the area (or you will know such knowledgeable people), and what has already been done. But that will not be the whole story. You'll need searches of the patent literature. Moreover, you will need the advice of patent attorneys to interpret what is found. What seems to you to be a major obstacle might not be. Or *vice versa*.

12. And if I don't want to patent my idea and I want to stop someone else patenting it?

You publish it. There are specialist publications, such as *Research Disclosure*, which exist solely for this very purpose. Give it to RD and it will be on its website the very same day.

13. How limited is this "limited" monopoly?

20 years from the date of application in the country is nearly universal these days.

14. So, some of the patent term has already gone by the time I get my patent?

Correct, go to the top of the class.

15. Can't I get it extended?

With very few exceptions, only if you have a pharmaceutical – typically, an extra 5 years is possible (more is possible in the USA).

16. Why bother filing patent applications?

In a word, money. Patents stop other people from using your invention, so that you are the sole beneficiary.

17. OK, you mentioned the magic word "money". How much is this going to cost me?

This is a “how long is a piece of string?” question. It depends on a whole mountain of variables. How easy or hard is it to patent your particular subject-matter? How many countries? Even, how long is your application (translation costs)?

The answer is generally somewhere between “a lot” and “an awful lot”. For grant in 10 countries (US, Japan, some Europeans and others), think of at least $US60,000. (If everything is done by private attorneys, think of at least $US80,000 and possibly $100,000+). A study done for the EPO in 2005 predicts the total costs (both external and internal) of grant and first 10 years in six European countries via a European application and the PCT to be about €54,000 (about $US71,000).

18. OUCH!!!! Is it worth it?
That depends on what you want to achieve. Talk to your patent attorney; s/he can advise you.

19. Another thing – this assumes that patents are actually worthwhile and that they encourage innovation. Is this assumption justified? I’ve heard it said that it isn’t, and that patents actually hinder innovation.
This is a very good question without a very good answer. If you want to show that patents hinder innovation, there is plenty of evidence for that position, as there is for the reverse. Many academic economists (usually those with anti-monopoly sentiments) are against the system. The recent mobile ‘phone patent wars have strengthened many people’s feelings against the system. The truth is, as usual, somewhere in between.

There is no doubt that the system is overrated as an engine of innovation, that it can be abused and that it is sometimes used to exploit small inventors and developing countries. However, until the invention of perfect, altruistic mankind, the patent system remains the best way we’ve got of rewarding innovation and encouraging its continuation. To paraphrase Winston Churchill’s famous remarks on parliamentary democracy, as a driver of innovation, patents are “the worst form ever devised by man, apart from all of those other forms that man has from time to time devised”. See Appendix O for more thoughts on this.

20. So, for all this money, I can work my patent without being bothered by anyone else?
Not necessarily. The thing you need to remember is that a patent is a negative right; it gives you the power to prevent someone from working your invention. This is not the same thing as saying that you have the right to work it (although in most cases they’re the same thing). For example, you may find that someone may have an earlier patent that dominates yours, and you may need a licence to work your patent. However, the other patentee may need a licence to work yours (see **Selection patents** on p.96).

21. You said “the owner of an invention”. Surely you mean the inventor?
Sometimes, but these days rarely. Most inventions are made not by private inventors working in the garage but by employees of companies. It is a general legal principle (known in British common law as “master and servant”) that an invention made by an employee belongs to the employer, when the invention was made in the course of his or her employment, was related to the business of the employer and within which employment it could reasonably be expected that inventions would arise. In any case, it is part of most employment contracts. The business can become more complicated when universities are involved, especially in the USA, if government funding is involved. Expert advice is needed to navigate these treacherous waters.

Moreover, unlike inventorship, which is a matter of fact (you either invented or you didn’t), an invention in whole or in part can be assigned to anyone, so that “owner” can be anyone.

22. As an employed inventor, am I entitled to a share in the profits of a successful invention owned by my employer?
As of right, only in a few countries, For example, Germany and Austria have inventorship laws that require inventors resident in those countries to be paid for inventions to which they contributed, depending on how much money is made from the inventions. Japan also has a law requiring that “reasonable remuneration” be paid, and the British Patents Act has a provision for remuneration if an invention is of outstanding merit. Most other countries adhere to a version of

the ”master and servant” principles mentioned in **21**. However, if you solve an employer-related problem while washing dishes at home, that probably still belongs to the employer. On the other hand, an idea for a novel garden fork that strikes you in the middle of doing a reaction in work probably belongs to you (unless the employer has a line in horticultural implements).

23. Speaking of inventors, old Fred has worked here for 30 years. He's a great guy. Is it OK if I put him on a patent application as an inventor, even though he's only a lab. assistant and does only what he's told to do? He'd like that.
Only if Fred made an inventive contribution. If he didn't, he must not be named as an inventor. Inventorship is a matter of fact, not reward. The same is true for managers and supervisors who want to be included (I know one company where the research director was named as an inventor on every single patent). Making a false declaration to a patent office can have serious repercussions – especially if it's the US Patent Office.

24. And what exactly constitutes an "inventive contribution"?
Basically, a contribution to an inventive concept that makes a step towards a practical realization of the invention. For example, if the boss says, "We are going to make and sell a car that has the top speed of a Ferrari, but which delivers the fuel consumption of a Smart at the same time", s/he has only enunciated an idea, which may or may not be practical. S/he is NOT an inventor, unless s/he provides some practical input as to how this is going to be achieved.

Similarly, old Fred, who only works as directed, and provides no independent input as to how the goal may be achieved, is not an inventor. If the invention is considered as a jigsaw puzzle, Fred is not an inventor if someone directs him to make a particular piece, no matter how important, and he does just that. However, if, for example, Fred makes the piece all by himself without specific direction, or if he says, "No, you need it to be this shape, not that.", and this is important to the final invention, then Fred is an inventor.

25. Hey, the new guy who joined us last week from the competition has this great idea that came up when he was working there. We can use it, can't we?
DANGER!!! It depends on what it is. It is understandable that skills and techniques learned on the job are transferable between employers, but it is **not** permissible to transfer potential intellectual property or confidential information, even if the competition didn't realise its value or even had decided not to pursue it. You could end up in court for stealing it. If you have doubts about any aspect of how you came about an invention, give your patent attorney all the facts.

26. You said that the other party is "the government of a country". Can't I have a patent for the whole world? I see references to "world patent" in some newspaper adverts.
Afraid not. There are some patents that cover more than one country, but in general patents are national rights. Even the so-called European patent isn't really (see more on p.78) And the so-called "world patent" is probably a reference to a PCT patent application (see more at **69** below and on p.75); these have two-letter "WO" codes.

27. Does this mean that patents for the same thing can be different in different countries?
Yes, sometimes very different, even to the extent that you get exactly what you applied for in some countries, and get completely demolished in others.

28. What are the requirements for a patentable invention?
It must be

- suitable subject matter for a patent
- novel
- inventive (non-obvious)
- useful
- sufficiently well described.

29. What do you mean "suitable subject matter"?
As mentioned in 4 above, not everything is patentable. An invention must provide a new and useful result, generally something that is industrially applicable. Some things are barred from

patenting on moral/ethical grounds (e.g., surgical methods, letter bombs). In addition, some countries allow the patenting of things that others don't (e.g., computer programs *per se* are allowable in the USA but not in Europe). See p.27.

30. Aha, "novelty". This is what you were talking about in 5 above, isn't it ?
Right. See also p.32.

31. And novelty isn't the same everywhere?
No. For example, in the USA, prior printed publications worldwide, but only public use or oral disclosure in the USA, are considered novelty-destroying. This has changed with the *AIA* but the older provisions are still true for older pending applications. On the other hand, most places use absolute novelty, as mentioned in **5** above. However, some countries, even some absolute novelty ones, have a "grace period", as mentioned in **5**. USA, Canada, Mexico and Australia are the main grace period countries.

32. What do you mean by "inventive/non-obvious"?
An idea may be novel, but it may be obvious to the person skilled in the art, in the sense that s/he would find the difference from the prior art to be trivial and achievable by a straightforward and non-inventive modification. In such a case, it is not patentable.

33. You've missed something here – my idea may be trivial, but it's a BIG success commercially. Surely that's an indication that it deserves patenting.
Not necessarily. The relevant primary consideration is inventiveness (non-obviousness). While commercial success may be an indication of inventiveness (in that it may indicate the fulfillment of a long-felt need), it is at best a secondary indication of inventiveness. No technical advance, no patent, no matter how successful.

34. What on earth is a "person skilled in the art"?
This is the person to whom a patent is addressed. This person is deemed to know absolutely everything in the relevant technical field, but to be completely uninventive and unimaginative. In reality, it is a legal fiction used by courts worldwide to judge inventiveness or non-obviousness. Different countries have different ideas about how much s/he knows, which is a pain.

35. What is "prior art"?
The knowledge base in the appropriate technical field existing at the application date or priority date of a patent application (actually the day before!) and against which the invention is assessed. It varies from country to country. For example, the USA considers printed matter anywhere, but only use or oral disclosure in the USA, as relevant. Europe, on the other hand, considers any publication by any means anywhere in the world as relevant (so-called "absolute novelty").

36. What's a priority date?
The date of the first filing of a patent application. This is described in more detail below, but basically, if two people come up with the same invention, the one with the earlier patent filing date has "priority", and may be able to stop the person with the later priority date from using the invention.

37. Even if the later applicant didn't know about the earlier one?
Yes. Ignorance is no excuse.

38. Is there a difference between a priority date and an application date?
They can be the same, but in the case of a foreign filing based on an earlier application, they can be up to a year apart. More details below and on pp.65 & 69.

39. What's this "sufficiently well described" business? Can I get away with not giving away my most important information?
That depends. An invention must be sufficiently well described in a patent application, such that a person skilled in the art (back again already!) can perform the invention without having either to reinvent it or to do a ridiculous amount of work to sort out what works from what doesn't. For

example, if you claim C_{1-2000} alkyl and only C_{10-15} actually works, you're asking for trouble. However, information that constitutes "fine tuning" and that the skilled person would be expected to know and apply in his attempted working of the invention doesn't have to be mentioned. See more on p.36.

40. But hang on, what's this other skilled person doing working my invention? Don't I have a monopoly?

Yes, but in most countries experimental use is allowed; most use leading towards commercialisation isn't. See further under *Infringement* below, and on p.98.

41. How useful is "useful"?

Generally it means "industrially applicable" (these are the words used in European patent legislation). The major exclusions are any kinds of medical or diagnostic methods (but naturally not apparatus or substances for use in such methods). The US requirement is that an invention have "utility", which is slightly different – it is possible to get patents on some medical methods there.

42. Speaking of working and useful, I see that worthless agglomeration of equine waste product Joe Blow has a patent that uses my patented Gizmo™ as an essential part of his successful Bloogler™ machine. Where's my cut? And surely this makes me a co-inventor.

In general, afraid not. If Joe obtained the Gizmo™ through normal channels, your ability to enforce your patent right ended with the sale - it is said to be "exhausted". You are merely the supplier of a component and Joe's innovation in making the Bloogler™ is his own. Now, if Joe were to modify the Gizmo™ in some way, that might be different, but it's very much dependent on the circumstances of the case.

43. Hey, I tried an example of Fred Nurk's patent – and it didn't work! How can this be? Surely I can have it invalidated.

Patent offices assume that inventions work as claimed – it is left to the person skilled in the art (such as yourself) to show otherwise. Remember that "work" in a patent sense means that the claimed benefits are obtained to some extent, not that you immediately get something that you can put on the market tomorrow, and that some tinkering may be required (and expected) even to get that. Invalidation on the grounds of non-working is possible but difficult. It often ends up in the war of the expert witnesses – and the benefit of the doubt is usually given to the patentee.

44. Going back to novelty, inventiveness and all that stuff, how can I find out whether my idea is novel/inventive/whatever?

You need a search. As a person skilled in the art, you'll already know a lot about what's available in the field. But you won't know everything. It's important to remember that commercial success has no bearing whatsoever on whether a thing is or isn't patentable. For example, a patent could be granted on the basis of successful lab experiments (most are), but the idea never made it to commercialisation for any number of practical/financial reasons. That patent remains as prior art lurking there like an unexploded mine, waiting for you to arrive.

45. You mean that published total rubbish can stop my great idea? Ridiculous!

Agreed, but that's a built-in limitation of the system and it cannot really be any other way. Patent examiners simply cannot ascertain whether an alleged invention in a patent application works in practice (and how works is "works" anyway?). They can only start from the basis that what the applicant has written is true and that it really does work, and they then check this against the prior art (mainly what is written in the patent and general scientific/technical literature). Non-working arguments can only really be brought by competitors in court.

46. But surely I can ignore such garbage – can't I????

It is very unwise to ignore a granted patent, no matter how silly it may appear to you. Remember that the patentee may not think that it is, or s/he may have knowingly filed it, simply to upset you and divert your attention from more important things in the hope of being able to

embarrass you in the market place, should you decide to ignore it. If the patent really is total rubbish, find evidence showing that it is, and have this ready to fire back. In some circumstances, it might be worth approaching the patentee and putting your cards on the table. If the patentee is honourable, s/he will withdraw the patent, if not, it will stop him or her ever initiating (expensive) action against you.

47. Can I do my own search?

Yes (see the section on patent information starting on p.108, but a professional search is better. Professional searchers have access to tools not normally accessible by researchers – and they are more practised at formulating searches and asking the right questions, meaning a better result with less expenditure.

48. And this will give me everything?

Aha, if only… For a start, there is always the 18 months'-worth of applications that you cannot access between filing and patent office publication. And database records aren't perfect (they can be patchy further back in time and country coverage can be lacking). Even manual searches through patent office records can miss things. However, the whole battery of tools can give you a very good idea of what's out there.

49. Who will do this for me?

Your patent attorney will have access to professional patent searchers. There are now on the scene various firms with their roots in India, but generally with offices in the USA, offering a variety of patent searching services (the work is done in India, where costs are much lower).

2. Applying for a patent

50. How do you go about getting a patent?

You file an application for a patent at a patent office.

51. Any old patent office?

Depends on the country. Many have provisions that require domiciles of the country to file first in that country, often on the basis of national security. For example, if you want to file a patent application on a US-originating invention outside the USA, you need a foreign filing licence from the USPTO. Some countries, e.g., Switzerland and Australia, have no such requirements and domiciles of those countries can file first applications anywhere.

52. Who is entitled to apply for a patent? The "owner of the invention" from 21?

Yes. Previously in the USA, the inventor(s) had to be the applicant(s), and the owner/s is/are given as the "assignee/s", but the *AIA* changed this.

53. What sort of documentation is needed?

Usually some sort of official application form, plus a specification (called a description in some places), claims, abstract, drawings (if a mechanical/electrical invention), gene sequence (if applicable) and (naturally) money.

54. How much money?

Depends on where – the UK Patent Office charges a £60 ($US79) application fee and £150 ($US198) for a search, and the US official fees are $300 for a provisional application and $1820 (including search and examination fees) for a regular application. (Those US fees are halved for a "small entity"). And if you use a private patent attorney as an agent, his or her fees will go on top.

55. What's this "provisional" and "regular" business, with regard to the USA?

A provisional application exists only to claim priority – it is never examined. A regular application is the one that gets examined. Some other countries, e.g., Australia, have such a system. So, the regular application claims priority from the prov.

56. OK, a specification/description describes the invention, right?
Right. It describes the invention to the extent that that skilled person can repeat the invention without having to reinvent it (see **39** above).

57. What are claims?
These are short (usually!) statements at the end of the description that actually define the boundaries of the monopoly desired. The scope of a granted patent is defined by the claims, and their interpretation is a job for a patent attorney, especially in the USA.

58. So, the application is filed – when do I get my patent?
That depends on the country and on what you want to do. If you have filed in a country and you want to get only a national patent for that country, you may have to have an examination. This varies from country to country, ranging from Belgium (no examination at all) through France (does a search and requests that you respond if the search turns up close prior art) and the UK (reasonable examination) to the USA (often unreasonable examination).

On the other hand, you may have filed your application only as a priority application on which to base foreign applications.

59. Ha, this priority business again. What has a priority application to do with foreign applications?
Most countries are members of the Paris Convention, which enshrines an international right of priority. If you file a priority application in a Convention country, and within a year of that you file an application in another Convention country, you are entitled to claim the priority of the priority application.

60. So, if I file today and a German files the same thing in Germany tomorrow, if I file in Germany no later than the anniversary of the priority date, I get the rights over the German?
Right. Have you ever considered a career in patents?

61. But I've heard this doesn't work in the USA…
Hey, you really should consider a career in patents! It was true that, formerly, the normal priority rules could be overridden in the USA by the uniquely US "first to invent" concept, as opposed to "first to file" in the rest of the world. The AIA has now changed this to a "first inventor to file" rule, essentially the same thing as "first to file".

The disappearance of "first to invent" means the end of so-called "interference" proceedings (invoked when the USPTO discovers the existence of co-pending applications with overlapping subject matter, to determine who has the right to which bit of which invention). This was the patent equivalent of a black hole, into which vast amounts of money disappeared, to re-emerge in the alternative universe of US lawyers' pockets. There is now a "derivation" proceedings, which looks equally confusing, but hopefully less expensive.

62. Hey, I have an idea! Can I file a vague and general document to claim priority, fill in all the holes in the Convention year and then follow up with a more comprehensive document, dotting all the i's and crossing all the t's?
In general, no. For example, "$C_{1\text{-}4}$ alkyl" does <u>not</u> give priority to a later, specific mention of ethyl. In some countries with the old British provisional-complete system, this is still possible, but there are few of these left.

63. You mean that I have to "fly blind" by guessing what will work, otherwise, by filing only on what I know, I run the risk of filing something that's too narrow and missing out on important material?
This is a very good question without a very good answer. Especially in the case of chemical inventions, most inventors will have tested only a relatively small sample of possible candidates other than the one that appears to be the best commercial candidate. Where lies the boundary? It is quite in order to claim something that gives the claimed benefits to a limited degree, but not

something that gives none of them. As there is rarely a sharp boundary between “work” and “not work”, it means that a certain amount of educated guesswork may be involved.

The best approach is to file an application on what you know to work, plus what you would reasonably expect to work at least partially. If you find out more in the priority year, you can file another broader application. In fact, you can file as many as you want within that priority year, and then combine them all in a single application. Any resulting patent will have a number of priority dates.

64. Say I file an application, find there’s an error and then decide not to proceed. Can I refile at a later date?
Yes. However, you must give up all rights in that earlier application – in practical terms, you cannot claim priority from it.

65. And I can abandon and refile as often as I like?
Theoretically, yes, but there is an argument that this is legally shaky, based on what was originally intended in the Parts Convention (that this was intended to be used only once). Best idea is to seek to abandon/refile as little as possible.

66. Going back to priority, you said “claim the priority” – you don’t get right of priority automatically?
No. You have to specifically claim right of priority and submit a copy of the priority application, officially certified by the patent office in which the priority document was lodged.

67. In every single country in which you wish to file?
Yes. If you file in 30 different countries, you need 30 certified copies. But there are ways around that.

68. Such as?
You file an International Application under the PCT. Then you only need one for all 155 PCT Contracting States.

69. “An International Application under the PCT”? This is the thing you mentioned at 26 as not being a world patent?
Congratulations for staying awake this long! That’s correct. The Patents Cooperation Treaty (PCT) is a mechanism for filing in a large number of countries (155 at April 2022 – see list on p.141) with a single application. These are the ones with the WO codes.

An International Application never becomes an International or World patent. It is simply a method of filing in a lot of countries at once, but at some point the International Application becomes a number of national applications and the International Application ceases to exist. See p.76.

70. 155 National Applications!? Isn’t that expensive?
Not as expensive as you might think. For one thing, you are not compelled to go through with all 155 countries, only as many as you want. For another, there are some regional groups of countries, where a single filing covers a group of countries.

71. Europe is one of these, isn’t it?
Yes, you can file a European patent application via a PCT application.

72. And I get a patent covering the whole of Europe?
Well, no, not exactly. The European system now covers 39 countries (full list on p.79), the whole European Union, plus UK, North Macedonia, Iceland, Malta, Norway, Switzerland & Liechtenstein, San Marino, Monaco and Turkey. Moreover, the result is not a single patent, but a bundle of national patents, each of which leads its own independent existence. You can designate which countries you want in your application, and you can decide which ones you want to keep – for example, you can drop your European/German patent and keep your

European/British patent. The European system is merely a mechanism for a unitary search, examination and grant for the Contracting States.

73. But I thought there was going to be a single Europe-wide patent…

After a very long wait, this is finally here – 25 countries have signed up to a unitary patent. It excludes (for the moment anyway) Spain, which vigorously protested against it, and even took court action to try to prevent it, and Poland. These 25 countries will be a single designation in a European patent application, the way a European patent designating Switzerland automatically covers Liechtenstein. Courtesy of Brexit, the UK will not participate. The UPC opened for business on 1 June 2023, and the initial Unitary Patents cover 17 of the 25 countries. See more on p.82 and Appendix N.

74. But you said back at 23 that there are places where I can have a single patent covering a group of countries…

Yes, but you won't like it! The Eurasian Patent covers most of the countries of the former Soviet Union and the OAPI Patent (*Organisation Africaine de la Propriété Industrielle*) covers the Francophone countries of Africa.

75. So, any catches in this PCT filing business?

A couple. First of all, it adds to the expense. Secondly, it means that it takes longer to get patents. This is important if you want to sue someone for infringement – you cannot sue until you have a granted patent (see further under *Infringement* below). However, if you do detect an infringer, you can usually accelerate things. PCT often represents the most cost- and option-efficient way of filing.

76. What about catches in the European business, as opposed to just filing separate national patent applications?

The European application allows you to file and prosecute to grant in a single language before a single examination authority. However, at the end of it all, you have to validate the granted European patent in the countries that you want –and this usually means translations and national/agent's fees on top of what you've already paid in European fees. The point at which European filing is accepted as being more cost-effective is 5 countries. However, that's not the whole story. In some European countries (e.g. France, Netherlands, Italy, Belgium, Greece), they have easy examination or no examination at all, so grant is guaranteed. If a European application is rejected, you lose the lot, with no way back. Therefore, consider carefully the nature of your invention and what you want of it before filing in Europe.

77. You mentioned "examination" in 55; is it hard to get through?

This is very much dependent on the country. Examination standards range from no examination at all through formal examination only (no examination of the actual subject matter) to quite stiff substantive examination, in which the novelty and inventiveness are assessed.

78. How long does it take in a stiff examining country?

Very variable. On the one hand, if your invention is clearly novel and inventive, you can get your application allowed almost immediately. On the other hand, in contentious cases and/or where there is a lot of prior art, it can take years.

79. If I become aware of a bit of very relevant prior art, which the patent office hasn't found, is it a good idea to shut up about it?

No. If you do, you have a patent that may be partially or completely unenforceable and that may therefore not be worth the paper on which it's printed. If your idea turned out to be commercially important, you can bet your life that your competitors will find this art, and you will have wasted all that money. Worse, in the USA, it may be considered fraud on the Patent Office, and you may be hit with much more than the loss of a patent. Better to confront it at examination stage and declare it to the patent office (with suitable narrowing of scope and/or arguments).

80. What if competitors find relevant prior art? Can they stick their noses into an examination of my patent application and stop me getting a patent?
Only to a very limited extent and not in all countries. In nearly all cases, competitors are restricted to notifying the patent office of prior art that they think is particularly relevant and/or that the office may have missed. They do not play any active part in examination, which is strictly between applicant and examiner. In most countries, competitors get their turn after examination at grant, when they can oppose the grant of a patent. This is held before a patent office tribunal and is much cheaper than a court case, so it's popular.

81. Is there anywhere where I can't get a patent?
Not many places these days and none of particular importance – there is currently no provision for patents in Myanmar (Burma), but it's coming. Kuwait has no patent laws of its own, but it can be covered by a GCC (Gulf Cooperation Council) patent.

82. Once I get my patent, I can put "patented" on my articles, can't I, to scare people off?
Yes, but be careful with marking. Remember that patents are national rights. If you sell your marked article in a country in which you have no patent, you could be sued for false marking, and that could be **very** expensive – the US currently charges you $500 per falsely marked article. Sell a lot, and you could pay off the US national debt all by yourself. Remember also that legal proceedings could narrow your patent to the extent that the marketed article is no longer covered by it. Therefore, mark only when you have good reason to do so, and when you can restrict to countries where the statement is true.

3. Maintenance of patents

83. Do I have to pay to keep my patent in force?
Yes, all countries require the payment of renewal fees.

84. How much and how often?
The fees are generally relatively small at the start (the first two years are free in many places), but they rise steeply towards the end of a 20-year term, the idea being to discourage people from keeping patents of no value. For example, your first 10 years of official fees in Germany will cost you €1350 ($US1795), but your last 10 will cost €11,741 ($US15615). Most places charge annual fees (hence their frequent description as "annuities"), but this is not universal – for example, the US renewal fees are payable at 3½, 7½ and 11½ years from the date of issue of the US patent. Don't forget that, if a private attorney or a specialized renewal agency is paying the fees for you, their charges will be on top of the official fees.

85. So, I start paying renewal fees once my patent is granted?
In most places, you start paying renewal fees at application stage, typically starting from the third year from application. In some systems, these renewal fees payable at application stage aren't charged until grant, at which point they are all payable at once.

86. You mean, I have to renew a patent that I haven't yet got?
Afraid so.

87. What if I forget to pay? Is my patent lost?
Usually not. Most countries (and all the ones that matter) allow a six-month grace period within which the renewal fee can be paid, with a surcharge. No reason for failure to pay on time is needed. If you go over the six months, most places have restitution procedures, if failure to renew was inadvertent (i.e., you can't deliberately decide to abandon and then change your mind). You will have to prove that lapse was inadvertent.

88. What if someone else doesn't pay, even after 6 months, I use the invention described in the lapsed patent in the assumption that it's dead and gone, and then it's restored. Can I keep using it?
Yes. You can go on doing what you've been doing, but you can't extend to other things covered by the patent.

4. Restoration of patents

89. Going back to question 88, what if something totally beyond my control happens, natural disaster, postal strike, or my agent mucks up, dies, runs off with his secretary, something like that, and some weird deadline or other doesn't get met and my patent or patent application lapses? Can I get it back?
Possibly. In the case of natural disasters, industrial action and the like, a blanket provision is usually put in place that extends all deadlines to some future date when things are back to normal. This is usually published in the official gazette of the patent office.

In the case of failure on the part of an applicant or his/her agent inadvertently to comply with a deadline, most places have restitution procedures. However, the requirements are strict; there's usually a time limit within which restitution must be requested, and you or your agent must have a really convincing story, to the effect that this was a rare, inadvertent slip-up in an otherwise well-functioning deadline-monitoring system.

5. Infringement of patents

90. So, once I've got my patent, I can sue the pants off any other miserable, worthless scumbag who infringes it, can't I?
Yes.

91. I've seen a patent from a competitor that falls within our patents. Can I sue the competitor for infringement right away?
No. In fact, you can't sue the competitor for infringement at all. By definition, infringement means working the invention in a commercial sense, or making serious preparations for such working. The competitor can produce such patents until it's blue in the face, for all you care, just so long as it doesn't try to commercialise the invention.

92. Can the miserable, worthless scumbag get around my patent and avoid being sued for infringement by making some trifling change?
In general, no. It is well-established law everywhere that a miserable, worthless scumbag, er, infringer cannot avoid a patent by making some minor change that has no effect on the working of the thing. However, this has to be applied with great care, and only patent professionals can do this assessment. This is especially so for the USA, where a judicially-recognised Doctrine of Equivalents is applied.

93. Can I attack an infringer even before I've got my patent?
No. Only when you have a grant do you have property in an invention. Until then, you can only draw the attention of an infringer to the existence of your patent application as soon as it is published (most countries and the PCT publish patent applications prior to examination, so you can supply the publication number or send a copy).The infringer is then put on notice, and if s/he persists on infringing (and assuming of course that the granted patent still covers the infringement, otherwise it's not an infringement any more), you can sue him/her for damages back to the time when s/he was notified.

94. Will I get back what I lost?
Probably not. If you win, you'll get an injunction (a court order preventing further infringement) and some compensation (damages), but it's rare that damages will come anywhere near what you've paid. But the infringer will have lost more, particularly if s/he has invested money in plant and equipment to make the infringing item. An exception is the USA; there, the courts can award treble damages, in cases where infringement is blatant, or where the alleged infringer is seen to be deliberately blocking progress.

95. Can I stop people experimenting with my patented invention without paying me?

In general, no, although the position is not completely clear in some countries. The whole point of a patent system is to encourage people to innovate and the right to experiment is implicit in that. However, any move towards commercialisation constitutes infringement. Usually you will only be able to ascertain such behaviour when there is actual infringement. In some countries, there is a right to "discover" relevant internal documentation of the alleged infringer, hopefully to find evidence of intent to infringe. Rather special provisions apply to pharmaceuticals (see p.103).

96. What if someone doesn't actually infringe, but provides a part of an infringement? Can I go after him or her?

In general, yes. If someone provides part of an invention, and the sole reason for providing that part is to infringe, that person may be attacked in most places for "contributory infringement". Of course, if the part of the invention has legitimate alternative uses, you may not get anywhere.

97. Can I sue the purchaser of infringing products?

The position in some countries is unclear, but in general, no. The infringer is the person who makes and sells the infringing product or utilises the infringing process. Someone who merely buys the result in the course of trade and who is not in any way implicated in bringing the infringement to market does not infringe. S/he will merely have the problem of finding a new source of supply. However, there are cases in which the customer is actually the literal infringer. For example, your patent claims a process for dyeing fabric using a particular substance (not itself patented), another supplier is making the substance, but the customer is the one that is doing the actual dyeing. However, one sues potential customers with caution. It is often better to go after the supplier as a "contributory infringer" (see p.102)

98. The other day, I saw an absurdly broad patent covering things that people in the field have been doing for years! How do people get away with that? Does it affect me? And can I do anything about it?

This is the "garbage patent" question **43** again. It happens (regretfully). Patent Examiners generally aren't experts in their technological fields and sometimes things like this can get through, often in camouflaged form (for example, claiming the prior art by limiting with reference to some obscure parameter or criterion or pseudo selection test), and the poor Examiner has no idea that s/he's being comprehensively conned.

Can anything be done? It depends on the circumstances. Generally, nobody can stop you from doing what you were already doing prior to the priority date of the patent. And you may even have sufficient evidence to knock it out in an opposition or a court case, in which case, you may be able to ignore it completely. However, as we said previously, **never** ignore such a patent, no matter how absurd it appears to you. Tell your patent attorney about it.

99. You just said that "generally" I can't be stopped from doing what I've always done. Where's the catch?

If you were working it commercially before the priority date of the patent that bothers you, you are fine. However, if you've just been thinking about commercialisation or sitting on it, you might have problems. More on p.103.

100. Is there any way I can use someone else's patented technology without the sky falling on me?

Perhaps. Ask your patent attorney – it might be that it's not patented in the countries that interest you, or that the patentee neglected to pay the renewal fees and let it lapse. In which cases, it's free for your use.

101. I want to work within a competitor's patent and I know some really nasty prior art that'll invalidate the thing completely. Can I work the patent?

Yes. If the patent can be invalidated, it can't be infringed, as there's nothing to infringe. When the competitor fires its warning shot, you can fire right back and that should be an end of it. But just be sure you really **do** have killer prior art…

102. What if I work part of an invention outside the country, in a country in which the invention isn't patented?
There's no clear answer on this and precious little in the way of legal precedent, but this is inadvisable. The *Blackberry* case in the USA, in which the patented process was not worked completely in the USA (part of the Blackberry operation takes place in Canada) was held to be an infringement. There's no way of knowing how applicable such a decision would be in other jurisdictions, but in the present state of the authorities, it would be risky to try this.

103. What if the invention is a novel process and the product itself isn't patentable? Can I work the process in a country in which the process isn't patented and then import the product of the process into a country where it is?
European law provides that the importation of the direct product of a patented process would constitute an infringement. But what if the process is for the manufacture of an intermediate? This would appear not to be covered by European patent law, but there are indications that some jurisdictions (such as the USA) would see this as depriving the patentee of his/her just reward and that it would constitute infringement. Again, it would be very risky to try.

104. But no harm in buying genuine patented goods somewhere where they're cheaper and exporting them to a country where they're dearer and making a killing, right?
In most cases, much harm, I'm afraid. Parallel importation is forbidden in most countries.

105. Not fair! You mean a patentee has the right to stop you doing things even when you've acquired the thing legitimately?
If we're talking national rights, only slightly. A patent right is said to be "exhausted" when the goods are purchased, and the patentee has little control over what you do to/with them. A major modification could cause problems. And exhaustion of rights only applies nationally, not internationally.

106. What if the stupid thing breaks down? Can I repair it without infringing?
Generally yes. A right of reasonable repair is assumed. However, if your "repair" meanders into "refurbishment" with major changes being made, that could be different. This is a very grey area and it depends on the circumstances. Talk to your patent attorney.

6. In conclusion…

107. Great! Thanks! So now I can make simple patent judgements and need only bother you with complex matters, right?
Not so fast! You didn't read the answer to question **1**, did you? Go back and start again! The **only** people that can pass a valid opinion on a patent matter are patent professionals. They alone can judge these matters, so **all** patent matters or opinions on patents should be referred to them. In addition, communications between a patent attorney and his/her client are often privileged the way communications between a solicitor and his/her client are privileged. This means that they cannot be "discovered" during any legal action. On the other hand, statements on patent matters between technical/marketing folk are discoverable during litigation, and an adverse comment about a competitor's patent (for example, that it's OK to infringe it), could cost you dearly. So, if a patent opinion is needed, talk to your patent attorney.

"The Origin of Specis" (Patent Specifications)
(The long, boring version)

First things first – money, money, money *(it's a rich man's world), or…**HOW MUCH!?***

Suppose one of you wants to build a tower. Will he not first sit down and estimate the cost to see if he has enough money to complete it? For if he lays the foundation and is not able to finish it, everyone who sees it will ridicule him, saying, 'This fellow began to build and was not able to finish'. (Luke 14:28-30 (NIV))

The speaker was admittedly a tradesman rather than an inventor, but he clearly had his head screwed on, even before screws were invented. Patenting an invention will **cost** an amount **somewhere between "a lot" and "an awful lot"**. The inventor who is out to conquer the world needs to bear this in mind. The cost of wide coverage (depending of course on how wide) can be horrendous, and not even the major pharma companies try to cover everywhere.

In addition, there are attorneys' fees. Your patent attorney will do everything s/he can to help you, but s/he is not a charitable institution. S/he will expect to be paid for work done. Here are the sorts of charges with which you'll be faced:

Official fees – application fee, examination fee, grant fee, renewal fees.

Attorney fees – time-based fees for searches, consultation, advice, drafting, responding to queries, answering patent office objections and general TLC. And if you foreign-file, the foreign attorneys will charge, which charges your attorney will pass on to you, with his or her own (reporting) charge attached. Not forgetting **translation fees** in many countries.

Exactly how much depends on a mass of variables unique to each case, many of them completely unpredictable. Your attorney can give you an estimate, but even that may be inaccurate, and in some cases wildly out. For example, a search finds prior art that you didn't know was there and what appeared to be a simple drafting job of a few hours takes several times as long as expected. However, for a portfolio of the major countries (say, Europe, USA, Japan, China) and assuming they all last 20 years, expect to pay out a sum at least in the upper tens of thousands of US dollars. We'll discuss these things later on.

So, you really do need to count the cost as best you can. You will need a realistic assessment of your invention and its potential value, and from that the breadth of country coverage you'll need. If you decide that you only need coverage in your home country, this will be (relatively) cheap. It's when you start to add other countries that your costs rise.

Not put off completely (yet)? OK, let's talk about patents, what they are and how they protect inventions…

"The Origin of Specis" - the general garbage…

I could continue the Darwinian theme of this title by posing a question based on the Creation v. Evolution debate fiercely argued in the USA at the moment - are patent specis (or descriptions) divinely and perfectly created, or do they evolve from primitive matter through many aeons of painfully slow change? - but since I won't like the answer you'll give, I won't ask the question… (Patent attorneys like to think that their patents show evidence of intelligent design).

A method of styling hair to cover partial baldness using only the hair on a person's head. The hair styling requires dividing a person's hair into three sections and carefully folding one section over another.

Intelligent design? US Patent 4,022,227

Patents! You've heard of them, you may have been compelled to read them, you may even have given your original thoughts to a patent attorney and seen them come back to you, totally transformed as a butterfly is transformed from a caterpillar - except that it might seem to you that s/he started with the butterfly and ended up with the caterpillar (or, as a former Australian colleague memorably put it, s/he threw away the baby and kept the afterbirth).

So, why employ people to perform this reverse metamorphosis? And does it actually achieve anything, apart from ensuring that the aforementioned people eat regularly? We as patent attorneys like to think it does (but then, to paraphrase the immortal words of Mandy Rice-Davies, we would, wouldn't we?). But, in order to decide whether the exercise is worthwhile, it helps to know **what a patent is**:

> **"an agreement between the owner of an invention and the government of a country, in which the owner agrees to publish the invention, and in return the government agrees to give the owner exclusivity on the use of the invention for a limited time."**

Let's look at the important aspects of this definition. Most importantly:

1. **What is an invention?**

I'm glad you asked that question! It's, er, well, it's a…well, I do know one when I see one! A definition from a patent attorney's point of view would read something like this:

> **"A product of human ingenuity that is both new and of practical benefit"**

So, an invention entails the provision of a new and useful result. But **any new and useful result?** In general, **no**, but this is where things start to differ from country to country. In most countries, patents are for newly-devised things of technical merit, where "technical" means the mechanical/chemical/electrical/electronic/biotechnological arts. However, as we shall see, this is not universal.

The splendid **old British definition** of invention was **"any manner of new manufacture"** (*Statute of Monopolies* (1624), s.6). This was narrowly interpreted for a long time, including an old UK definition of invention as "producing/improving/restoring/preserving a vendible product". The boundaries of this definition were stretched (exploded actually) by a major Australian High Court decision, in *NRDC v. The Commissioner of Patents*, in which the Court held:

...any attempt to state the ambit of s.6 of the Statute of Monopolies by precisely defining "manufacture" is bound to fail…It is, we think, only by understanding the word "product" as covering every end produced, and by treating the word "vendible" as pointing only to the requirement of utility in practical affairs that the language* [of the old UK definition] *may be accepted as wide enough..

This basically allowed nearly anything to be patented, although none of the countries using this definition ever took it as far as the USA was prepared to go.

Speaking of which, the **US Patent Law** helpfully defines "invention" in 35 U.S.C.100 as

The term "invention" means invention or discovery.

Clear, eh? 35 U.S.C.101defines "Inventions patentable":

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Now, this looks all pretty technical, doesn't it? However, as we shall see, US courts over the years have interpreted these definitions widely, and the scope of things patentable in the USA is greater than anywhere else, including the grant of patents on computer programs and business methods.

The **Japanese** Patent Law definition is along the same lines:

"Invention" means…the highly advanced creation of technical ideas by which a law of nature is utilised

In contrast, the **Europeans** have sought to **define "invention" by** a rather incomplete dissertation as to **what is not patentable**, so it goes on (and on, and on…). Here are edited versions of Articles 52 and 53 of the European Patent Convention:

52 (1) European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step, and are susceptible of industrial application.

(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:
(a) discoveries, scientific theories and mathematical methods;
(b) aesthetic creations;
(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
(d) presentations of information.

(3) Paragraph 2 shall exclude patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

53 European patents shall not be granted in respect of:

……

(b) plant or animal varieties or essentially biological processes for the production of plants or animals; this provision shall not apply to microbiological processes or the products thereof.

(c) methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body; this provision shall not apply to products, in particular substances or compositions, for use in any of these methods.

Got that? Notice that Art.52(2)(c) in particular. No schemes for doing business and no computer programs. As a result, things that are patentable in the USA are not patentable in Europe. Attempts to bridge the gap have been made, thus far unsuccessfully.

The concept of patentable invention is further discussed under "Subject matter" on p.27.

"An" invention

The basic rule is, **one invention, one patent**. You obviously cannot expect to cover your new method of achieving nuclear fusion and Aunt Agatha's fruit cake recipe in a single patent. But **what constitutes "one" invention differs from country to country**. This arises partially from classification and partially from individual office philosophy. The first substantive thing a patent office does on receiving a patent application is to classify the document according to subject matter; this identifies the field against which it will be examined and also allows it to be located in future subject matter searches. In countries with examining systems, the application then goes to the particular examination group handling that classification.

Classifications can be quite different. Most offices these days use the International Patent Classification (IPC) (see Appendix B for a sample), but the USPTO still uses its own, and this, for example, puts products and the processes for making them in different classes. As a result, a perfectly reasonable application claiming a product and the process for making that product may end up as two patents (see "Divisional applications" on p.90). The EPO has the rather more reasonable "single inventive concept" idea. Thus, for example, a novel compound, the method for making that compound, a product utilising that compound and a use of that compound for a particular purpose are all considered part of a single inventive concept.

However, the "single inventive concept" idea cannot be pushed too far. For example, if you want to achieve a particular result and this can be achieved by a large variety of different means or materials whose only common characteristic is that they give the desired result, most patent offices will be unwilling to consider these as a single invention.

2. **An agreement**

Did you notice that? A **patent** is primarily not a technical document at all. It **is primarily a legal document**, intended to define an area of exclusivity on which nobody else can intrude. It is written ultimately for lawyers, judges and similar hangers-on and ne'er-do-wells, and honest technologists are reduced to being expert witnesses at best, helpless bystanders at worst. The ultimate interpreter as to what a patent actually means is a court of law. This means that patents must be written in the knowledge that one day they may be pulled apart in court.

This is partially **why patents are** often **written in language which** to the ordinary person **seems very strange** indeed. (I can speak only for English, in which I suspect the disease is particularly virulent, but I am sure patent specifications in other languages read just as oddly). The other reason is that patent attorneys take refuge in jargon. There is no doubt that the demands of literary style and precision of language are often contradictory, but not so often as some patent people would have you believe! To me, the best policy remains KISS (Keep It Simple, Stupid), but this is not always possible.

3. **The government of a country grants patents**

At one time, you used to see advertisements for products with the words **"World Patent"** featuring somewhere in tiny print. **No such thing**. With the exception of a few supra-national bodies, **patents are granted by national states**. If you want patents in USA, Mexico, Australia, Switzerland and South Africa, you must file separate applications in each of those countries.

4. **Owner agrees to publish**

Again, you sometimes see advertisements for products made by a "secret patented process". This is nonsense. One **major object of the patent system is to encourage publications**, so that other ingenious people will seek to find a way around the patent and thereby make further technological advances, ultimately to the benefit of all. The alternative route is to work your process secretly, which might be fine if the opposition can't work out what you've done. The classic example of this approach is Coca-Cola®. The precise formulation of "Coke" defied analysis for decades, not that anyone cares any more, as all the value resides in the trade mark. However, had someone else discovered the formula, the Coca-Cola Company could do nothing, except to change its advertising to "the original and best" or something like that. In some cases, secret use is preferable to patenting - see p.60 for more.

But who is the **"owner"?** In the simplest case, the owner(s) (and therefore the applicant(s) for a patent) is/are the inventor(s). However, these days, most inventors are employed by companies and the owner of the invention is **usually the employer**. In addition, unlike inventorship, which is a matter of fact (you either invented or you didn't), ownership can be assigned or part-assigned. More on inventorship on p.21.

5. **Exclusivity for a limited time**

A patent confers exclusivity. In most countries in the world, it **gives** a patentee **the right to prevent others from using the** patented **invention**, but not necessarily the right for the patentee himself to work it. For example, the patent might be dominated by an earlier patent. Other legal provisions such as registration provisions can prevent working.

A patent is thus usually a **"negative" right**. This is not universal - some modern British Commonwealth Patents still give inventors the old British law right to "make, use, exercise and vend" the invention and "to enjoy the whole profit and advantage . . . accruing by reason of said invention". For most practical purposes, it makes no difference - it is usually the case that, if you can prevent your competitors from using your invention, you will be the only person who can exploit the market.

The limited time (the **"term"** of the patent) generally runs from the date of filing of the patent application in the particular country. In other words, by the time you get your granted patent, some of its term has already gone. **20 years** is the almost universal term these days (some countries have shorter terms, often only for pharmaceuticals).

Up to relatively recently, one exception was the United States of America (get used to this sentence, you will see a lot more like it), which had a patent term of 17 years from the date of grant. In other words, no matter how long it took to get a US Patent (and that could be a long time), you still had 17 years to run.

This principle resulted in some extraordinarily long-lived patents, three of which are shown in Appendix A. The first two arose out of the discovery of the Ziegler-Natta alkene polymerization catalysts, which revolutionized polyalkylene manufacture and which won co-discoverers Karl Ziegler and Giulio Natta the 1963 Nobel chemistry prize. (Moral: never clean your autoclave properly, it may win you the Nobel Prize). Naturally, everyone in the polyalkylene business wanted a slice of the action. The initial Philips Petroleum application was filed on 27th January, 1953 and the date of the grant of US 4,376,851 was 15th March, 1983. Add on 17 years and you can see that the patent expired on 15th March, 2000, 47 years after the initial application. However, another US patent application by Prof. Natta, filed on 5 June 1955, was granted in 2002 as US 6,365,687. Because this was pending during the law change, it gets 17 years from grant, expiring on 2 April 2019, an even more amazing 54 years after application.

However, these are mere babes beside US 6,097,812 (Appendix A), which, if kept to full term, will have endured 84 years from application. In this case, the subject matter (a cryptographic system, conceived around the same time as, and similar in concept to, the famous German ENIGMA machines) was kept secret as a matter of national security and was granted only in 2000.

The accession of the USA to the WTO GATT Treaty and its associated TRIPS (Trade-Related Aspects of Industrial Property) provisions has meant that the USA now has the GATT-approved 20 years from application, just like most other countries. For 17-year US patents that existed when the new law came in, the term is the longer of 17 years from grant or 20 years from initial application, not from the date of any refilings (see p.88 and Glossary under “USA”). You can still refile a US application endlessly - but now you waste your own potential patent life by doing so (and proposed rule changes will seek to reduce that ability). Moreover, US law guarantees 17 years from grant if the applicant is diligent, answers objections promptly, etc. Failure to be diligent means a shorter effective patent term (but never less than 20 years from application) – see “Patent Term” p.72. At the time of writing, there remain 20 pending US applications filed prior to the law change. Most of these belong to a Gilbert Hyatt, a highly successful patentee and licensor. About a dozen of them were filed over 35 years ago.

Extensions of patent **term** are possible, but nowadays **only usually** in respect of **pharmaceuticals** that have to go through long, drawn-out regulatory approval procedures. More on this on p.99 for those interested.

The “exclusivity for a limited time” aspect is the important part of the business for industry. The publishing of information to enrich life in general and act as a spur to other people of inventive mind is very fine and noble, but industry's primary interest is locking out the competition for as long as possible. Research is expensive, so, for example, when you produce a good product, the last thing you want is someone else setting up shop to make it, especially as that someone has not incurred your R&D costs and can often undercut you on price. A **patent ensures** that, provided there are no conflicting prior rights, the **entire benefit of valuable research effort** will accrue to the company for a limited time. This is especially true of the pharmaceutical industry, where a new drug can cost nearly $US1 billion to develop and only about 1 compound in 5000 makes it to registration - without good patent cover, there simply would be no incentive to develop new

pharmaceuticals. However, this also applies to other fields of endeavour. Patents are a tool that helps ensure a return on investment and a continuation of research.

Patents as Property

A patent is a piece of property. The ideas and inventions of the scientists and technologists of a company are just as much its property as are its buildings and equipment. A patent is one type of what is known as **"intellectual property"**, that is, **property that resides in ideas and concepts**, rather than in tangible objects. Patents cover that type that consists of inventions. The other major branches are:

Copyright - works of literary or artistic merit

Trade Marks - words or symbols which distinguish one person's goods from those of others

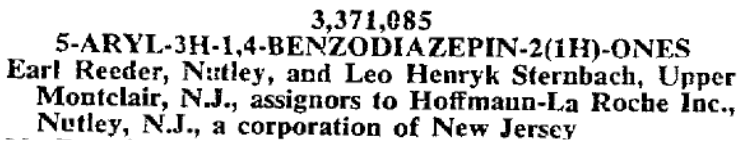
Industrial Designs - covers the shape of or pattern on industrially-produced articles

Over time, they have been joined by Plant Variety Rights (covering novel types of stable plant varieties - the US has also had plant patents for a long time) and Integrated Circuit Topography protection (covering the designs of microchips)

Like other more tangible forms of property, a patent can be bought and sold. It can also be licensed to another party for an agreed royalty. Licensing is an excellent way of getting money, for example, when you don't want to work the invention in a particular country and a local company does. You incur none of the setting-up and running costs and you collect a royalty on sales.

How much is a patent worth?

There is no simple answer to this question. **In most cases**, **less than** that of **the paper on which they are printed**, which is why patent portfolios need to be constantly reviewed (at least annually) to weed out unwanted patents. But you never know what will turn up a winner. Can you afford not to patent? In the pharmaceutical industry for example, the number of really successful "blockbuster" patents represents a tiny proportion of the total, but they are extremely valuable ("Valium", "Sandimmun", "Voltaren", "Zantac"). Appendix K provides some guidance as to the valuation of patents (often required these days).



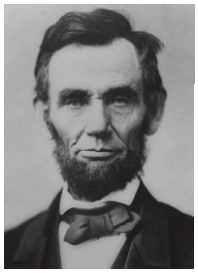
3,371,085
5-ARYL-3H-1,4-BENZODIAZEPIN-2(1H)-ONES
Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

Mother's little helper – Diazepam ("Valium"), first of the blockbuster drugs, played a major role in making Roche the biggest pharma company in the world for a time.

Ingenious humans; inventors

An inventor is someone who contributed **inventive input** to a patentable invention. This is a **matter of fact, not emotion or desire**. You cannot (**must** not) put someone on a patent application as inventor, just because you think s/he deserves it, or you want to reward/motivate him/her for a job well done, or because s/he's the supervisor/manager and thinks s/he ought to be there. As people, not companies, invent things, all patent offices eventually want to know by what right a company is the applicant, and there has to be a declaration of inventorship. Putting a **non-inventor** on **as** an **inventor** is a **false declaration** and it can have serious repercussions if ever found out. The **decision** as to whether a person is an inventor **belongs** ultimately **to the patent professional.**

Here are some inventors/applicants who went on to much greater things:

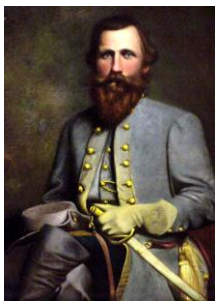


ABRAHAM LINCOLN, OF SPRINGFIELD, ILLINOIS.

BUOYING VESSELS OVER SHOALS.

Specification forming part of Letters Patent No. 6,469, dated May 22, 1849; application filed March 10, 1849.

while, on the other side…



JAMES E. B. STUART, OF WYTHEVILLE, VIRGINIA.

METHOD OF ATTACHING SABERS TO BELTS.

Specification of Letters Patent No. 25,684, dated October 4, 1859.

*D**n Yankee!*[+]

131,402

PATENT SPECIFICATION

Application Date, June 26, 1918. No. 10,511/18.
Complete Accepted, Aug. 28, 1919.

COMPLETE SPECIFICATION.

Improvements in the Composition and Manufacture of Sausage Meat and the like.

I, KONRAD ADENAUER, of 6, Max-Bruchstrasse, Cöln-Lindenthal, Germany, Mayor in Chief, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

(But how on earth did Adenauer file a British application with WW1 still raging?).

Now spot the inventors…

No peeking!

*+ This is a d**n Yankee patent. The short-lived Patent Office of the Confederate States of America issued only about 200 patents, almost all now lost. The most noteworthy was No.100, for the ironclad warship CSS "Virginia" (formerly USS "Merrimack"), which famously fought USS "Monitor" in "the battle of the ironclads" at Hampton Roads.*

UNITED STATES PATENT OFFICE

2,130,948

SYNTHETIC FIBER

Wallace Hume Carothers, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del., a corporation of Delaware

No Drawing. Application April 9, 1937, Serial No. 136,031

56 Claims. (Cl. 18—54)

This invention relates to new compositions of matter, and more particularly to synthetic linear condensation polyamides and to filaments, fibers, yarns, fabrics, and the like prepared therefrom.

The third of these objects is accomplished by combining the filaments into a yarn and knitting, weaving, or otherwise forming the yarn into a fabric.

(They were to call it "Nylon" – Wallace Carothers is the one in the middle)

UNITED STATES PATENT OFFICE

2,292,387

SECRET COMMUNICATION SYSTEM

Hedy Kiesler Markey, Los Angeles, and George Antheil, Manhattan Beach, Calif.

Application June 10, 1941, Serial No. 397,412

6 Claims. (Cl. 250—2)

This invention relates broadly to secret communication systems involving the use of carrier waves of different frequencies, and is especially useful in the remote control of dirigible craft, such as torpedoes.

Fig. 2 is a schematic diagram of the apparatus at a receiving station;

Fig. 3 is a schematic diagram illustrating a starting circuit for starting the motors at the transmitting and receiving stations simultaneously;

(At the time of patenting, the first-named inventor was at the height of her Hollywood fame as Hedy Lamarr)

(12) **United States Patent**
Brando

(10) **Patent No.: US 6,410,833 B1**
(45) **Date of Patent: Jun. 25, 2002**

(54) **DRUMHEAD TENSIONING DEVICE AND METHOD**

(75) Inventor: **Marlon Brando**, Beverly Hills, CA (US)

(73) Assignee: **Penny Poke Farms, Inc.**, Beverly Hills, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/878,516**

(22) Filed: **Jun. 8, 2001**

(57) **ABSTRACT**

In a tunable drum, a connector member in the drum is attached by cables to a tuning ring, and is threadedly coupled by a tuning linkage to a retaining member fixed to the drum. Rotation of the tuning linkage with respect to the drum moves the connector member longitudinally and, as a result, adjusts the tension of the drumhead. In one embodiment, a handle fixed to the tuning linkage is positioned to engage a complementary coupling in a drum stand when the drum is retained by the drum stand. In another embodiment, the complementary coupling is movable between an operative position in which the drum can be tuned by rotating it with respect to the stand, and inoperative position in which the drum can be placed in the stand without the handle engaging the complementary coupling.

(Only wild music from this Wild One perhaps…)

Patented Nov. 11, 1930 **1,781,541**

UNITED STATES PATENT OFFICE

ALBERT EINSTEIN, OF BERLIN, AND LEO SZILARD, OF BERLIN-WILMERSDORF, GERMANY, ASSIGNORS TO ELECTROLUX SERVEL CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

REFRIGERATION

*(and you thought he was only a Technical Expert (2nd class) in the Swiss Patent Office, didn't you?)**

** Grateful thanks to Michael Kisters for ferretting out Albert Einstein and Konrad Adenauer as inventors.*

"Doc" of the "Back to the Future" series, was, alas, only a film inventor and amateur publicist for DeLorean cars.

But, what's in it for me, the inventor?

Depending on whether you work for a company, the answer is somewhere between everything and nothing. If you're the owner of the invention, all the proceeds are yours. However, if you're an employee and inventions produced by you in the course of your duties could reasonably be expected, the invention may belong to your employer as of right. In which case you may get the glory, and nothing else.

Most countries work on principles similar to what old British law used to call "master and servant", that is, if you make an invention in Company time using Company materials in a field which is of relevance to the Company's business and that the nature of your employment was such that it could be expected that you might contribute to an innovative idea, the invention belongs to the Company as of right. In nearly all cases, inventors are legally obliged to assign their inventions to the Company and to assist the Company in patenting these new inventions (for example, by signing any necessary forms and doing any further necessary work).If, however, you're the floor cleaner in a pharmaceutical company and you hit on a great idea for a new drug molecule, the idea is yours and the Company will have to pay you for it.

However, a number of patent laws now provide for payment of inventors. The best-known **compulsory payment system for inventors is** that of **Germany**, where there is an elaborate procedure for working out how much remuneration an inventor ought to get. **Japan** has long had a law providing for **"reasonable remuneration"** of inventors, but it has only recently been used – and how! In January, 2005, the Tokyo High Court set reasonable remuneration for the blue light-emitting diode at $US8 million (yes, you really did read that – but the initial Tokyo District Court award was $US187 million!). Nevertheless, Prof. Shuji Nakamura is still one happy inventor*.

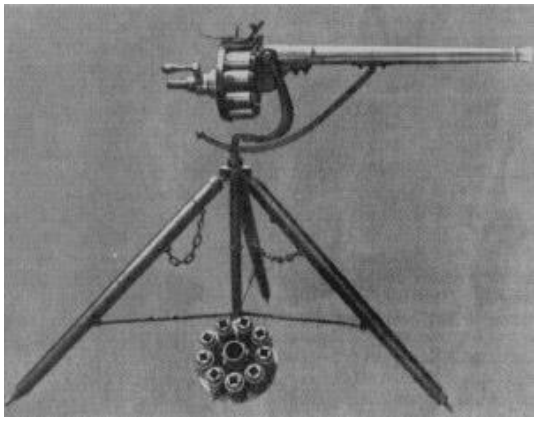
The **British** *Patents Act* 2004 provides for inventor **compensation, for inventions of "outstanding benefit"**, left carefully undefined. Awards were made for the first time in 2009, of £1 million and £500,000, to the inventors of a heart imaging agent, which had enjoyed a total sales up to 2007 of £1.3 billion.

**Now even happier – Prof. Nakamura, Prof. Isamu Akasaki and Prof. Hiroshi Amano were the joint recipients of the 2014 Nobel Prize for Physics for their pioneering work on blue LEDs, which has led to low-energy light sources, and has revolutionised lighting.*

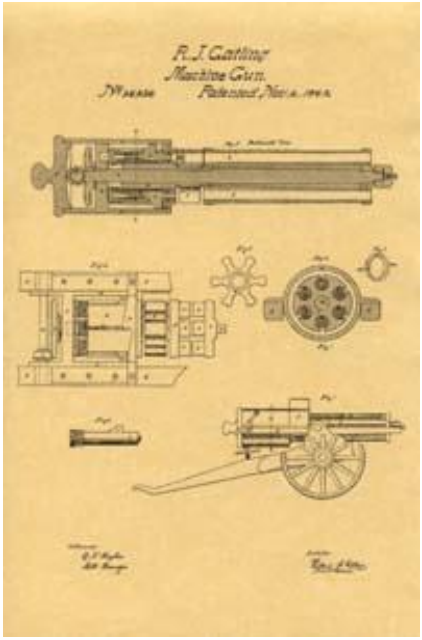
A short history of patents

Patents as we now know them are products of mediaeval times. They are **descended from royal grants of privilege**. For example, England was often behind the rest of Europe technologically (which goes to show that nothing ever really changes) and the English kings sought to attract skilled artisans from Europe by guaranteeing them a monopoly (and all the proceeds) for a limited time, on condition that they taught the locals the skill and thereby increased the knowledge of the realm. The **first patents of the modern type originated in Italy**; in Florence in 1421, the architect Brunelleschi was granted a three-year monopoly for a barge with hoisting gear for the transport of marble. The State of Venice also had a well-developed system; the **Venetian patent statute of 1474** (remarkably modern in content) is shown in Appendix C. The artisans and inventors operated under “letters patent”, literally “open” (in the sense of being written to the public at large) letters setting forth their monopoly. These letters patent were granted by the State or the monarch (often one and the same thing in those days) and the right to grant such privileges was often greatly abused.

In **England**, the abuse rose to such heights – James I granted one of his favourites the exclusive right to produce playing cards in the country - that Parliament finally put its collective foot down and decreed that Letters Patent should be granted only for “any manner of new manufacture” (**Statute of Monopolies 1624**). Nevertheless, the whole business remained rather haphazard until the 19th century and the rise of technological society. A major step forward was the signing of the **Paris Convention of 1883** which ensured that signatories gave foreign applicants the same rights as they gave their own nationals. All major and most minor countries are now Paris Convention members. The major non-Convention country remains Taiwan, mainly because signing could be taken as a declaration of independence by A Large Unfriendly Neighbour. More recently, there have come into existence regional and supra-national offices and organisations. We'll look at these later.



Subject of an early British patent – the Puckle flintlock machine gun, patented in 1718. It could fire round bullets (for Christians) and square bullets (for Muslims) – no kidding (square bullets were believed to inflict more damage). That’s the square bullet magazine hanging below the mounting tripod…



…and the subject of an early US patent – the altogether more efficient device of Richard Gatling, patented in 1862 (US 36,836)

Before you even commence to begin to start to think about your own patent…

Freedom to operate

Having a patent for a technology is very nice. It prevents anyone else from performing the technology covered in your patent. However, it is merely the icing on the cake, not the cake itself. And if you are prevented from making and selling cakes, having nice icing doesn't help a lot.

Before you pose the question, "Can I monopolise this for my own benefit?", you must first pose the question, "**Can I do it without infringing someone else's monopoly?**" You can certainly get a patent within someone else's prior patent (see Selection patents on p.96), but you cannot work that patent without a licence from the prior patentee. You can have all the patents in the world, but if you can't make and sell stuff, your business will go nowhere very rapidly.

From this come two vitally important lessons:

1. **Having a patent does NOT necessarily give you freedom to operate.**

2. It is thus **essential** always **to ensure first** that you have **freedom to operate**. More detail on this on p.57.

Marquis of Queensberry Rules…

or, Patent law for beginners

There follows a brief and necessarily incomplete description of the law of patents.

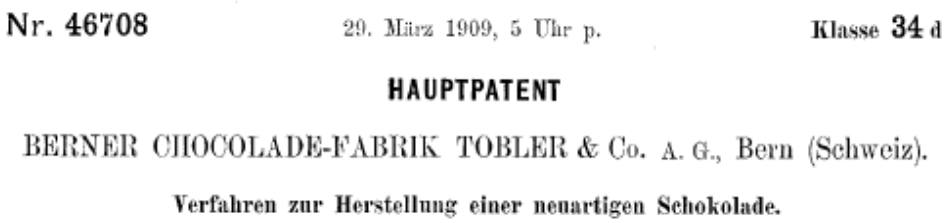
In order to be granted a patent, an invention must have the following attributes:

1. It must be **suitable subject matter for a patent**;
2. It must be **novel**;
3. It must be **inventive** (non-obvious);
4. It must be **useful;**
5. It must be **sufficiently well described**.

As we shall see, these categories overlap to some extent. Taking them in turn:

1. Subject matter

We have already considered what an invention is, and have seen that it is a way of achieving a new and practically useful result. Remember that cool Swiss Patent Office inventor a few pages back, the one with the oversupply of hair? While the Swiss Patent Office was working on things of profound national significance, such as a patent for "Toblerone"



Nr. 46708 29. März 1909, 5 Uhr p. Klasse 34 d

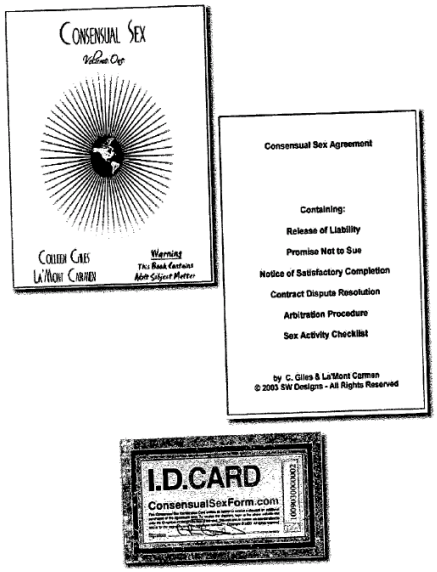
HAUPTPATENT

BERNER CHOCOLADE-FABRIK TOBLER & Co. A. G., Bern (Schweiz).

Verfahren zur Herstellung einer neuartigen Schokolade.

Experte 2er Klasse Albert, in his *annus mirabilis* (1905), produced some earth (and heaven)-shaking scientific discoveries. And none of them were patentable, because they were just that, **scientific discoveries, abstract knowledge** without practical application. The technology had to catch up with the ideas – in the case of special relativity, one suspects the technology is still running, but the photoelectric effect is in widespread use. The photoelectric effect itself is naturally as **unpatentable** as the law of gravity, but a door opener or a piledriver using those principles is certainly patentable. The question of where a law of nature ends and an invention begins was recently considered by the US Supreme Court in *Mayo v. Prometheus*, relating to a blood test applied to gastrointestinal disorders, which, in a decision bizarre even by US standards, concluded that the application of a newly-discovered law of nature is not patentable if the application merely relies on elements already known to the art.

However, **not all** such **things** that are **new and practically useful are suitable subject** matter **for patents**, and the concepts of what constitutes patentable subject matter differ from country to country, as we've seen above under "what is an invention?" The European Patent Office (EPO) insists on there being a "technical effect", and this, as we shall see, gets in the way of the patenting of computer programs and business methods. The US has no such restriction. In the following example (US Application 2005/0057034), I don't dare think about what sort of technical effect would satisfy the EPO…

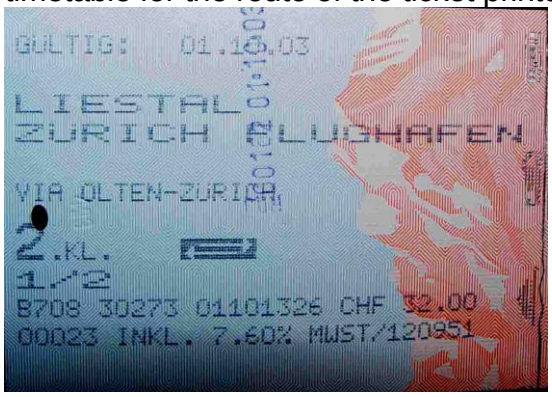


Consensual Sex Agreement Kit, consists of a book, document, I.D. Card for purchaser and method for using same. Book: printed article consisting of sheets secured together. The book comprises a plurality of pages including printing thereon, each of said pages refer to and demonstrate the document associated with the kit. Book with document enclosure: A printed article consisting of sheets secured together where covers are removable by way of perforation comprising of a Release of Liability, Promise Not To Sue, Notice of Satisfactory Completion, Contract Dispute Resolution, Arbitration Procedure, and Checklist of Sexual Activities. Identification Card: Printed matter for use as an identifier, which prevents undesirable use of the document associated with the kit and also prevents misrepresentation of identity of user of the kit. Also provides for entry to members area of kit's associated website.

Anyway, here are some examples of non-inventions and some controversies surrounding others.

Not subject matter (1) – combination to produce a new result necessary

In essence, a patent covers practical, usually technical subject matter. Thus, for example, chemical compounds, compositions, machines and the processes for manufacturing and using them are patentable. But not everything practical is suitable patent subject matter. For example, say Swiss Federal Railways decides to produce railway tickets with the timetable for the route of the ticket printed on the back.



Dep. Liestal	Arr. Zürich Fl.
08.33	09.45
09.33	10.45
10. 33	11.45
11.33	12.45
12.33	13.45

Very useful indeed, but the function of the ticket is not changed in any way. It remains a ticket that just happens to have some useful information on it. There is no interaction between ticket and information to produce a novel, practical result.

Not subject matter (2) – the Swiss Army Knife and similar non-inventions

sharp idea - but patentable?

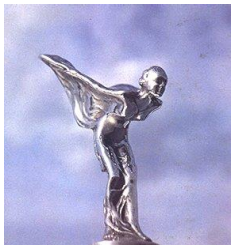
However, not even everything practical and functional is necessarily patentable subject matter. Consider that paragon of Swiss excellence, the Swiss Army knife, without which no small (or big) boy should be. Here we have a knife with, say, blade and scissors. Is such a knife patentable subject matter? Answer, no. The presence on the knife of a known apparatus (scissors) for the performance of its normal function, does not improve the blade function, or *vice versa*. Blade and scissors are

entirely independent of and unaffected by each other. If you are relying on the combination of a number of known integers for invention, there must be a *true* combination, that is, the integers must interact in a way that gives a new function or result. In old British law parlance, the Swiss Army knife is “a mere collocation of known integers”. However, if having a pair of scissors at the other end meant that the knife blade somehow (and unobviously) was twice as effective as a knife without scissors, this would definitely be inventive.

Or, to put it in more tasteful terms (if you'll pardon the expression), let's say you provide a new flavour mixture that is a mixture of a number of ingredients. If each ingredient merely performs its known function exactly as if the other weren't there, this is not an invention. However, if one were to influence the properties of the other and produce an unexpected beneficial result (say, the flavour is unexpectedly strong), this could be inventive.

Not subject matter (3) – aesthetic creations

Something whose function is purely aesthetic and lacking utility cannot be the subject of a patent application. For example, the Spirit of Ecstasy on the radiator grille of a BMW, sorry, Rolls-Royce is purely aesthetic, seeking to console generations of owners that all that money has not been spent in vain.



Now, if the presence of the Spirit of Ecstasy were somehow to contribute to better airflow over something that has otherwise the aerodynamic qualities of a house brick and therefore lead to RRs devouring fewer litres per metre, this would definitely be inventive, but it could only be claimed in terms of the technical features. I’m sure Sir Henry Royce would have approved.

We are not amused…

Appearances of industrially-produced articles can be protected by registered designs (design patents in the USA). For example, the Apple iPad™ has design (in the US design patent) protection, hence the long-running feud involving Samsung’s similar-looking device.

Not subject matter (4) – unethical/contrary to law

Ethical considerations often influence what can and cannot be patented. **Methods of medical treatment** (which could stop a doctor or surgeon from doing his or her job efficiently) are generally banned from protection. Some countries, e.g., the USA, will allow the patenting of some medical and surgical procedures. (However, a recent attempt by a US eye surgeon to enforce his patented method failed and Congress is contemplating a total ban). Inventions **contrary to law** or “ordre public”, e.g., letter bombs, are also not allowed. In addition, various countries have specific prohibitions. Some countries used to refuse chemical compound protection and sometimes specifically pharmaceutical protection, but I can’t think of any that now do. Some, however, go out of their way to make chemical protection very hard to get (e.g., India).

Not subject matter (5) – “mere discovery”

In some countries, notably the USA and British Commonwealth, the discovery of a hitherto unknown property of a known substance is a “mere discovery” and not an invention, the argument being that the property was there all along and you’ve merely discovered it. So, if you discover that the stuff you’ve been putting in your car’s radiator coolant as a lubricant also acts as an anticorrosive, the anticorrosive is not an invention.

However, this very example was the basis of the EPO's *Mobil* case (G2/88), in which the anticorrosive use was held to be a novel technical effect, and therefore patentable in its own right, even though the effect was there all along. Thus came into being in Europe the so-called "second non-medical use" claims ("Use of compound X for purpose Y").

Controversy #1; Biotech/genetic engineering ("patenting life")

One big ethical area is that of biotechnology and genetic engineering, particularly with respect to the protection of modified life forms, such as the now notorious "onco-mouse" (US 4,736,866). The **argument** is **not whether these things are patentable** (they most certainly are, in the present state of the law) **but whether they should be**. This is a matter of public policy and morality, rather than patent law - the patent profession as a whole has merely done its job and pushed at the boundaries of laws which were formulated when inventions were mechanical, chemical or electrical and the idea of "patenting life" belonged to the realm of fantasy. The arguments tend to be of the incandescent bulb variety – they generate more heat than light, and people on both sides often take strongly-principled, highly emotional and often wildly erroneous stands. However, biotech patents are here to stay and trying to stop them now is like closing the stable door long after the horse has disappeared over the horizon. We can only hope that the more outrageous biotech patents will be stopped, for example, applicants claiming enormous gene sequences, just in case there's something worthwhile in there, somewhere.

The series of US court cases *Association for Molecular Pathology v. Myriad Genetics, Inc.* on the subject of the patentability of isolated gene sequences has now been heard by the US Supreme Court, which has held them to be unpatentable, reversing a previous CAFC decision. However, cDNA, synthetic DNA with non-coding sections omitted (and thus having the same information as the natural sequence), remains patentable. The disastrous effect sometimes predicted if DNA were held unpatentable may not eventuate, but the consequences remain to be seen.

The *AIA* has a specific prohibition on the patenting of "human organisms". We can't wait to see what the courts make of that one.

Another field of dispute is that of stem cells, cells that can become any other type of cell and which offer the possibility of cures for many ailments. To date, a major source has been embryos, which otherwise would be discarded. This raises considerable moral dilemmas for many. Recent cases in the CJEU and *Bundesgerichtof* (Germany's Supreme Court) in the case of *Brüstle v. Greenpeace* held that stem cells could not be patented, if the process involved killing the embryo.

Controversy #2; going to seed…

Genetically-modified seed, most (in)famously, Monsanto's "Roundup-ready" seed, cannot be saved by a farmer from a plant grown from such seed for replanting, because it infringes Monsanto's patents. One farmer, a Mr. Bowman, took on Monsanto in court, arguing that Monsanto's patent rights were exhausted with the first sale (see p.107). The US Supreme Court rejected his case.

Controversy #3; Computer programs and business methods ("WHAT technical effect?")

Computer programs were **originally** viewed as being within the province of **copyright**. This was all very well if the program was in written form. But what if it wasn't – what is

then protected? The code in the machine itself? Or anything that replicated the function of the program? In one Australian case, an add-on electronic device that emulated part of a CAD program by simply emitting appropriate signals was considered a breach of copyright in the program, even though no programming was involved.

However, in the USA, part of the **US definition** of "invention" is that there be **"utility"**, and that doesn't necessarily mean technical utility. Thus, in the USA, not only are computer programs patentable (provided they have utility – a program with no utility is not patentable), but that includes **even non-technical computer programs**, such as financial programs. Other offices specifically exclude protection of computer software *per se*. The **EPO allows software patents**, **provided** the software has a **"technical effect"**, beyond that of merely modifying the functions of the computer itself – the program and its associated computer must interact with something else to provide a technical advance. The EU has now ruled out any protection of computer programs *per se*, so the EPO's current rules will continue. At the time of writing, the US Supreme Court has just delivered judgement in *CLS Bank v. Alice Corp.*, involving a computerized trading platform, holding that it was unpatentable for being merely the computer implementation of an abstract idea. This in effect brings US practice more into line with EPO practice.

The **US** "utility" provision also **allows** the patenting of very non-technical **business methods** (e.g. Amazon's "One-Click" ordering system). However, the impact of the Supreme Court decisions *Bilski, Mayo* and *Alice* remains to be seen. The Supreme Court agreed with a lower court's rejection of the Bilski "invention" (a method for hedging against the risk of price changes in the commodities market) but disagreed with its basis for doing so. However, it laid down no clear guidelines. And the CAFC has been told to reconsider another computer-based invention in the light of *Mayo*. So, business methods remain patentable, but not such a wide form as previously possible – how wide depend on how the lower courts and the Patent Office interpret the Supreme Court's exercises in applied vagueness. In a recent case, a method of real estate investment was held unpatentable.

The *AIA* has tighter restrictions on business methods applications. It even has a definition for them:

..a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.

In case you're wondering what a "technological invention" is, the USPTO has that covered – sort of…

whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.

It seems to echo the EPO's "problem-solution" approach. The USPTO and the courts can be relied upon to tie themselves in knots over this.

Some other countries, e.g., Australia and Japan, allow business methods. In **Europe**, business methods are **specifically disallowed** (the EPO Board of Appeal recently rejected "one-Click" for lack of inventiveness). Only a major change in European law and practice will ever allow the grant of business method patents.

And then, of course, there are things like this:

(54) **METHOD AND APPARATUS FOR FINDING LOVE**

(76) Inventors: **Catherine Richards**, (US); **W. Martin Snelgrove**, (US)

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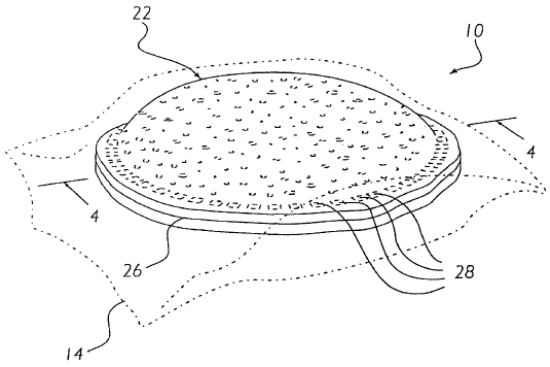
(21) Appl. No.: **10/279,731**

(22) Filed: **Oct. 25, 2002**

An apparatus is presented which, carried by or embedded in a lonely or socially inept individual, communicates with like devices in such a way as to divine the likelihood of attraction due to relative sexual, social, intellectual or spiritual interests of the bearers. It may either be programmed explicitly by a trusted body, or suspect compatibility by observing and mining patterns of behaviour, environment and physiological response in the users of the said devices. The users are signalled or led to initial interaction in such a way as to maximize the likelihood of prolonged and deepened contact.

O, Canada! Unsurprisingly, it never made it beyond the application (US 2003/0083544) stage. However, this:



A sealed crustless sandwich for providing a convenient sandwich without an outer crust which can be stored for long periods of time without a central filling from leaking outwardly. The sandwich includes a lower bread portion, an upper bread portion, an upper filling and a lower filling between the lower and upper bread portions, a center filling sealed between the upper and lower fillings, and a crimped edge along an outer perimeter of the bread portions for sealing the fillings therebetween. The upper and lower fillings are preferably comprised of peanut butter and the center filling is comprised of at least jelly. The center filling is prevented from radiating outwardly into and through the bread portions from the surrounding peanut butter.

was granted as US6,004,596 – and not only did its owner, Smucker's Company, send out "cease and desist" letters to "infringers" of its Uncrustable™ sandwich, but it even took one to court - the hearing by the CAFC was one of the shortest on record (it can roughly be summarised as, "Why are you wasting our time with this rubbish?"). It gives an idea as to just how badly the US patent system has lost its way.

2. **Novelty** means simply that **nobody has ever done before exactly what is claimed**. The precise boundaries of "exactly" differ from country to country*. However, if, for example, we have a flavour formulation that involves mixing A+B+C+D, and somebody comes along and replaces D with E, the combination A+B+C+E is usually considered novel over A+B+C+D.

Novelty is **measured against** the **"prior art"**, that is, the totality of publicly-available knowledge in the particular technical field, at the time of filing of the patent application or at the priority date (see p.65). In the case of novelty, an anticipation must be found in a single document or use - only in unusual circumstances is it permissible to combine (or "mosaic") documents.

So, if this: 

is the prior art, and I come up with this:

- do I have novelty? In general, yes, I do.

The nature of novelty differs from country to country, depending on what exactly each country considers to be "prior art". There are three **types of novelty**:

> **absolute novelty** - anything published anywhere in the world in any language by any means (oral, use, trial, printed publication, written communication) before the application/priority date destroys novelty. Used by the **European** Patent Office and the individual European countries, plus many other countries.
> **local novelty** - only publication or availability within the country is destructive of novelty - no account whatsoever is taken of what happens elsewhere. It can **now** be considered **extinct** since its last major practitioner, New Zealand, changed to absolute novelty on 13 September 2014.
> **relative novelty** - printed publication anywhere, but only local use or oral disclosure, destroys novelty. Used in, e.g., the **USA**, PR China and Japan. Under the *AIA*, the US position will move nearly all the way to absolute novelty. "Public use" anywhere in the world will be prior art. What exactly "public use" means remains to be seen.

There are only two generally-recognised cases in which a prior publication is not novelty-destroying, publication without permission of the would-be applicant (either inadvertently or deliberately) and publication at an internationally-recognised exhibition. In the latter case, a patent application must be filed within 6 months of the opening of the exhibition.

These are examples of what is known as a "grace period". There are individual countries with much more generous provisions. See p.63.

3. **Inventiveness** (Unobviousness) In terms of our A+B+C+E example, nobody may ever have done this before, but **would the person skilled in the art**, using his or her normal work skills, **think** that the replacement of D by E is **obvious?**

Stop briefly and gaze upon the wonder of the **person skilled in the art**, sometimes known as Mr/Ms PHOSITA (**P**erson **H**aving **O**rdinary **S**kill **I**n **T**he **A**rt). This extraordinary individual is a marvellous legal fiction, a person who **knows**, or who is deemed to have access to, **all** of the knowledge **of the particular art field**, **yet** who **is** totally and **completely unimaginative/inventive**. Sometimes the legal fiction groans a bit at the seams - the skilled person in the field of biotech is usually a Ph.D. with a skilled team behind him/her – but it has been generally very useful. Should you know one, please introduce us. In the meantime, be sure to introduce the term into your conversation – it is sure to impress.

To go back to the highlighters, is the green one made obvious by the yellow one? If it is just a simple change of one colour of ink for another, yes. However, what if green ink is inherently unsuitable for highlighters, and only special ink formulations will work? That probably lies beyond the ordinary skill of the art and the green highlighter may be inventive.

The Person Skilled in the Art, according to EPO Examiner Pierre Favre and German Sculptor Tina Heuter. Adds a whole new meaning to "bookend"…

Let's take another example. Despite looking vaguely familiar, this is in fact the planet Mudd, and its entire, er, land surface looks like the photo in the middle:

*****_For example, the EPO regards a prior patent disclosing a racemate as not disclosing a specific enantiomer, whereas the German courts do (_Lipitor _decision)._



To get around, the Muddites, the dominant carbon-based, occasionally intelligent bipedal life-forms of Mudd, have evolved the internal combustion engine and a means of locomotion across the surface of Mudd. It looks like the thing on the right - slow, thirsty, but effective. The company Muddluvver™ has sold zillions of them.

But, despite the refusal of muddled Global President Mudd Romney to accept it, global warming has come to Mudd (to which all those exhaust fumes have made a muddest contribution) and the surface is becoming distinctly less Muddy.


Now the interior dwellings of the Muddites not are at all muddy, and for generations, Muddkins have played with toys that look like the thing on the left, and an enterprising Muddite suddenly gets the idea that the rotatable discs used on such toys can work on large powered vehicles on the newly consolidated surface of Mudd. And so he takes a MuddLuvver™ and produces the Landlubber™ (right):

Is this novel? YES - because nobody has ever done exactly that before.

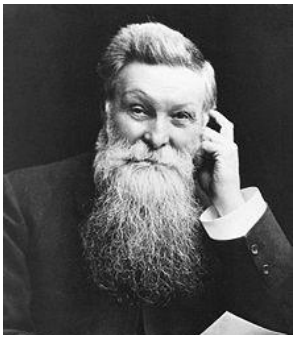
But is it inventive? NO, because –
(a) The principle of locomotion on a hard surface by means of rotatable discs on a shaft is known;
(b) The principle of rotating a shaft by internal combustion to produce a driving force is known.

Therefore, the skilled person would find it obvious to use the known principle of motorised shaft rotation to convert a Muddluvver™ into a Landlubber™. <u>It matters not at all how useful this is</u>, it fails the inventiveness test.

UNLESS…**there is a technical problem in connection with the rotatable discs that needs to be overcome. For example…**

…the newly mounted discs tend to sink into the not-yet-quite-hard Mudd surface.

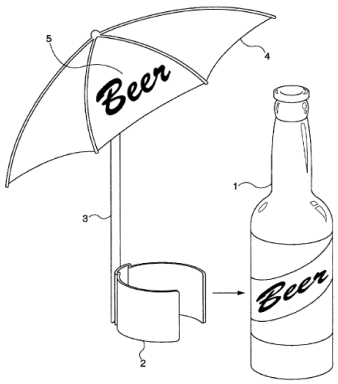
Enter John Boyd Mudlop, a Scottish veterinarian who has relocated (for reasons beyond all possible comprehension) to even muddier Belfast. Mudlop gets the idea of putting inflated bladders around the circumferences of the rotatable discs – hey presto! no more sinking feeling! This could make the vehicle patentable – but only in connection with the inflatable bladder. Mudlop might even be able to retyre on the proceeds…



Och, d'ye ken yon's a brrrraw guid wee idea, th'noo!

Or take the picture on the left below, someone's fantasy of a catamaran aircraft carrier for the Chinese Navy. Novel, perhaps, but inventive in the light of the thing in the middle, or even the much older thing on the right? Probably not, unless there is something extra. For example, the section joining two heavy hulls full of engines, etc. might not be able to stand the stress of heavy seas and unilaterally decide to double the number of Chinese carriers. If a new principle of marine construction were involved, allowing such a ship to be made, that would be inventive, as it overcame a problem not previously encountered*.

If an alleged invention is obvious, it cannot be patented. To show obviousness, the combining or "mosaicing" of documents is permitted in some countries, provided that the skilled person could reasonably be expected to make such a combination. Thus, if A, B, and C were in one art field (say, fine fragrance) and E was in a totally different one (say, paint stripper), it would be highly unlikely that this would be held to be an obvious combination. The borderline between what is "obvious" and what is "inventive" is often extremely unclear and depends very much on the individual circumstances of the case. The obviousness or inventive step argument is a favourite one of patent examiners, often because it often obviates the need for the lazy so'n'sos to think. Judging by some of the "obvious" combinations I've seen, patent offices are hives of undiscovered inventive genius.



The present invention provides a small umbrella ("Beer-brella") which may be removably attached to a beverage container in order to shade the beverage container from the direct rays of the sun. The apparatus comprises a small umbrella approximately five to seven inches in diameter, although other appropriate sizes may be used within the spirit and scope of the present invention. Suitable advertising and/or logos may be applied to the umbrella surface for promotional purposes. The umbrella may be attached to the beverage container by any one of a number of means, including clip, strap, cup, foam insulator, or as a coaster or the like. The umbrella shaft may be provided with a pivot to allow the umbrella to be suitably angled to shield the sun or for aesthetic purposes. In one embodiment, a pivot joint and counterweight may be provided to allow the umbrella to pivot out of the way when the user drinks from the container.

Novel, perhaps, but inventive? Amazingly, according to the USPTO (well, in that case, perhaps not so amazingly), yes - the "Beerbrella" of US 6,636,447

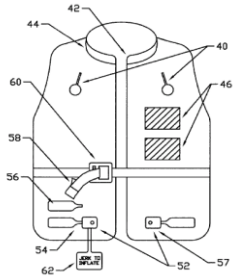
4. An invention must be **useful.** As previously mentioned under "inventiveness", **usefulness is NOT sufficient grounds for patentability**. Think of all those non-patented Apple products (except for design patents covering the physical appearance), which, with a combination of a neat design philosophy, well-thought-out functionality and slick marketing, have left all the others trailing in their wake. Apple was not the first to make a portable music carrier or a tablet computer, but it has established a dominant position in those markets – and without patenting the devices themselves.

**Thanks to Don Berryman for the idea*

Generally, “useful” means that it must be **industrially applicable** (the words used in the European Patent Convention). This eliminates such things as methods of medical treatment and diagnosis.

However, one ingenious applicant before the European Patent Office sought to avoid a rejection on the ground of lack of industrial applicability for a contraceptive method by arguing on appeal (T74/93) that, as prostitution was the oldest industry in the world, the method was most certainly industrially applicable. (Note, not the oldest profession in the world; in addition to fitting the argument to the circumstances, the appellant was obviously seeking to raise prostitution out of the common mire of lawyers, doctors, dentists, accountants, patent attorneys and the like). The EPO Board of Appeal, somehow managing to keep a straight face through all this, didn’t see it that way and refused the appeal.

The **US law** says that an invention must have **“utility”**, which usually amounts to the same thing. However, it is **somewhat broader**, and, for example, the USA will allow the patenting of some medical methods (as do Australia and New Zealand, which still use the “manner of manufacture” definition). Not to mention, as per US 6,350,168, the avoidance of having to choose between tanning and drowning…



A life vest for water sports is taught which is translucent to ultraviolet radiation and visible light. This allows the wearer to achieve uniform tan without having the harsh tan lines where the edges of a life vest would normally be. This allows an individual to enjoy both safety and tanning without having to make a choice between the two.

Lack of utility is nowadays the ground used to reject that most celebrated category of invention, the **perpetual motion** machine. As the USPTO Utility Guidelines for Examiners put it:

…no perpetual motion machines would be considered to be currently available.

As a result, those who want to patent such things have to resort to camouflage. For example, anyone who can find a perpetual motion machine lurking in the following abstract is a better man than I (US 7,109,671):

This invention is a back EMF permanent electromagnetic motor generator and method using a regauging process for capturing available electromagnetic energy in the system. The device is comprised of a rotor with magnets of the same polarity; a timing wheel in apposition to a magnetic Hall Effect pickup switch semiconductor; and a stator comprised of two bars connected by a permanent magnet with magnetized pole pieces at one end of each bar. There are input and output coils created by wrapping each bar with a conducting material such as copper wire. Energy from the output coils is transferred to a recovery rectifier or diode. The magnets of the rotor, which is located on a shaft along with the timing wheel, are in apposition to the magnetized pole pieces of the two bars. The invention works through a process of regauging, that is, the flux fields created by the coils is collapsed because of a reversal of the magnetic field in the magnetized pole pieces thus allowing the capture of available back EMP energy. Additional available energy may be captured and used to re-energize the battery, and/or sent in another direction to be used as work. As an alternative, the available back EMF energy may be dissipated into the system.

5. **Sufficiency** A patent specification or description must teach the claimed invention well enough **such that** the **person skilled in the art can perform the invention without** either **having to reinvent** the thing or having to perform an enormous amount of work to find out which part of the invention gives the desired improvement over the art. It does not mean that the skilled person has to be taught absolutely everything.

A classic old British case, *No-Fume v. Pitchford*, illustrates this well. No-Fume made smokeless ashtrays that consisted of a gourd-type body with a long trumpet-shaped neck. You dropped your cigarette butt into the trumpet, and, inside the body near where it joined the neck, a deflector plate flicked the butt into a place where the rising smoke was trapped. On being accused of infringement, Pitchford said that the angle of the deflector plate was critical, that No-Fume's patent did not disclose this essential feature and that it was therefore invalid. The House of Lords held that No-Fume had disclosed the essentials of the invention (the need for a deflector plate), and, given this knowledge, the skilled workman could readily determine an appropriate deflection angle.

However, this is the exception rather than the rule, and it should not be pushed too far. One of the great enemies of the patent application is **indefiniteness**, that is, that something has not been adequately defined and that it is beyond the ordinary skill of the art to determine what was actually meant. One example is vague or ambiguous terminology. Another is the undefined physical parameter. Take, for example, the molecular weight of a polymer. Now, while the molecular weight of sodium chloride is a single number, the molecular weight of polymethyl methacrylate is all over the place. And was it weight- or number-average MW (it can make a big difference)? And what about parameters such as viscosity, which are dependent on the method of measurement? Leave out that method and the number is meaningless. If a term hasn't an art-recognised meaning, and you can't point to a definition of it in a standard text, you'll need to define it in the text, or at least provide good fall-back positions in the text, should the patent office not accept your story.

Enablement – the necessity to provide everything needed for working an invention

This is a subset of sufficiency, and an **essential consideration** if you want **to cover a broad area.** A patent specification must enable a reader to do what is described – and that means everything that is described. If it doesn't, it is bad. For example, if a patent specification describes how to prepare a particular material, listing all the raw materials and the process steps needed, it is sufficient. However, if one of those raw materials is not readily available and the process for making it is not described, the specification may not be fully enabling. And if you claim A-Z and describe only how you made J, you're asking for trouble. You don't need to describe specifically all 26 letters, but you do need to describe a number of possibilities across the broad range, so that it is evident that the invention works over that entire range.

The USA is particularly strict with regard to sufficiency and enablement. In one US case (*U. California v. Eli Lilly*), the specification claimed genes for all mammalian insulin, including human insulin. However, the inventors had isolated and sequenced only the rat insulin gene, and a claim to the human insulin gene was refused, even though the specification described a method by which it could have been made (and was therefore sufficient). In the US view, there was no fully enabling disclosure of the human gene. The European Patent Office is also taking a stricter line on enablement, and an application covering a broad area should have sufficient information to enable practice right across the claimed area, not just a small part of it. Failure to do so risks having part of the area refused.

A fine example of a non-enabling disclosure – George doesn't tell us how it's done!

(19) **United States**
(12) **Patent Application Publication** (10) **Pub. No.: US 2004/0005535 A1**
Knauer, III (43) **Pub. Date: Jan. 8, 2004**

(54) **PROCESS OF REINCARNATION**

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(21) Appl. No.: **10/035,947**

(22) Filed: **Jul. 8, 2002**

Publication Classification

(51) **Int. Cl.**[7] **G09B 23/06**
(52) **U.S. Cl.** **434/300**

(57) **ABSTRACT**

The invention consists of the process of reincarnation or rebirth resulting in immortality.

Or one better from what appears to be a genuine Holy Roller…

(19) **United States**
(12) **Patent Application Publication** (10) **Pub. No.: US 2007/0035812 A1**
Roller (43) **Pub. Date: Feb. 15, 2007**

(54) **GODLY POWERS**

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(57) **ABSTRACT**

Christopher Anthony Roller is a godly entity. "Granters" had been given my powers (acquired my powers) (via God probably). These "granters" have been receiving financial gain from godly powers. These "granters" may be using their powers without morals. Chris Roller wants exclusive right to the ethical use and financial gain in the use of godly powers on planet Earth. The design of godly-products have no constraints, just like any other invention, but the ethnic consideration of it's use will likely be based on a majority vote of a group, similar to law creation. The commission I require could range from 0-100% of product price, depending on the product's value and use.

How to write a patent application in six easy lessons…

How a patent specification or description is constructed

A **patent seeks to exclude** others from a defined area of technology. Naturally, part of the deal is that you **must describe** exactly what is the **nature of this exclusion** that you are seeking. More importantly, you must clearly **define the boundaries of** your **invention** so that competitors in the field can see exactly what they shouldn't be doing. This is done in a document called a patent description or specification. The document itself usually comprises the following elements: a brief description of the technological background, including, usually, a problem encountered in the field which the invention is going to at least ameliorate; a short, concise statement of invention; a more detailed description of the invention; examples of the invention; claims defining the invention; drawings (if a device); abstract.

As the title of this section suggests, you can do it yourself, but this is inadvisable. Identifying an invention (which may not be at all what you think it is) and properly claiming it is skilled work, and is best done by a professional. Because of what's involved, it isn't cheap, but you will have the assurance that the job has been done properly, and that you don't, as the old English expression has it, risk spoiling the ship for a ha'p'orth of tar.

Despite the odd, convoluted language, patents basically tell a story, probably a bedtime story, as they seem to put most people to sleep very quickly.

In addition, no matter what the technology is, it's always the same story (which may explain why it's so boring), with the unusual feature that it's an outside influence (the patent offices and the courts) that determines whether the story will have a happy ending. The story goes like this:

Once upon a time, there was a technology… This was a good and great technology, and everyone loved it.

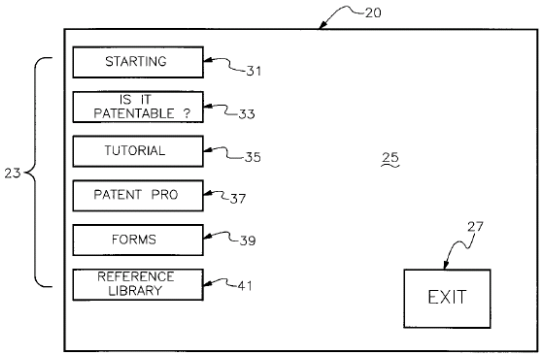
But it was not without its problems. And skilled and diligent workers tried and tried and couldn't solve them.

But, hey presto! We have now solved them! By following these steps, you can make a product/work a process that overcomes the problem.

Here's a more detailed description…

And here are some specific examples…

And finally, here are some claims, which define the boundaries of our invention.



A machine and method for drafting a patent application has a keyboard, mouse, display, printer, and a computer for receiving and transmitting data. The computer requests and stores information regarding the invention including, if appropriate: 1) qualities and benefits (QAB) of the invention over the prior technology; 2) primary elements (PE) of the invention that define the invention apart form prior technology; 3) secondary elements (SE) of the invention that may be important but not necessary to define over the prior technology; and 4) substitute elements (SUB) of the invention that may substituted or modified in an effort to avoid the primary and secondary elements but not depart from the invention. The QAB are requested and stored before the

. . .

Redundancy threatens! An excerpt from US Patent 6,574,645

The nearest I've ever found to patents as literature is the marvellous poetic application by Dr. Philip Grubb, former patent counsel of Novartis AG, which is reproduced by kind permission of Dr. Grubb as Appendix I. Alas, his boss in ICI didn't allow him to file it.
Art lovers should not miss the marvellous BANG! WHAM! KAPOW! drawings of US3,398,406 (See Appendix J).

It would be remiss not to mention the greatest patent artistry of them all, the work of Arthur Paul Pedrick. In the 1960s and 1970s, Pedrick, a former examiner in the UK Patent Office, produced a series of deliberate spoof patents with absurd subject matter. As he'd been a UK Examiner, he knew all the tricks, and in the end, the Comptroller of Patents instructed the examiners to allow Pedrick's stuff through without substantive examination. A comprehensive collection of Pedrickiana can be found at:

http://www.patent.freeserve.co.uk/pedrick.html

Pedrick's finest hour is GB 1 426 698, in which Pedrick achieves the miracle of unity of invention for the following inventions in a single disclosure:

(a) a cat flap in a door which allows in Pedrick's ginger cat, but keeps out next door's black cat; and

(b) an orbiting 1000 megaton nuclear bomb that will home in on and destroy anyone starting a nuclear war.

If you read the patent, you will find that Pedrick's ginger cat is the co-inventor of (b). A copy of the first page is printed on the back of Appendix J.

There now follows a simple (and much less entertaining) example of a patent description and it gives an idea of the general format to which most descriptions conform. Each page of the description has an explanatory page. In the booklet, the explanatory page faces the page. In the electronic form, the explanatory comments for a given page precede the page (e.g., p.42 explains p.43). The particular patent I have chosen is a rather venerable one that represents one of the earliest ventures in the field of maritime surface coatings. To the best of my knowledge, the inventor never had much luck licensing the idea....

MESOPOTAMIAN PATENT OFFICE

APPLICATION NO: 777

INVENTOR: NOAH

TITLE: IMPROVEMENTS IN OR RELATING TO HULLED WATERCRAFT

The description starts with a short introductory paragraph and then generally goes on to give some background. This usually leads to a description of a particular problem or particular problems in the art, which the invention is going to overcome completely or partially. The nearest known prior art is often quoted - indeed, some patent offices insist that it be mentioned. However, in most places it is quite acceptable to have no background description whatsoever.

This invention relates to hulled watercraft and more particularly to those of extended durability.

It has long been known that watercraft having a hull, that is, a series of essentially planar members joined so as to define an internal space, are capable of carrying more cargo than are the planar rafts of logs which have hitherto been used. However, the potential of hulled watercraft has never been realised because of the inability to waterproof the various joints adequately. This lack of waterproofness has meant a considerable reduction in the durability and therefore the prophetability of such watercraft.

Some solutions to this problem have been suggested. Thus, Lakka, in his article in the Mesopotamian Coatings Journal (34, 5, 130-134) recommends a coating of various natural gums, especially the exudates of various trees. These have proved excellent for short times, but they are unsuitable for longer times, especially when exposed to sea water, and frequent (and expensive) recoating is required.

Then comes the statement of invention. Note it well; the wording will probably be duplicated in claim 1 (almost certainly in unamended applications). Again, this does not have to be the case, but usually is (why write two lots of words to describe the same thing?)

It has now been found that these problems with hulled watercraft may be overcome completely and that said watercraft may be given long durability. There is therefore provided, according to the present invention, a hulled watercraft in which the hull has been coated with a liquid coating composition comprising a bituminous substance.

There follows a detailed description of the invention, setting out preferred embodiments. Note the invocation of the **“person skilled in the art”** (see p.33). S/he knows everything about the particular field of endeavour, but is totally unimaginative and uninventive. I'm still waiting patiently to meet my first one.

The coating composition for use in this invention has two characterising features:

1. It comprises a bituminous substance; and
2. It is applied to a hull as a liquid.

By “bituminous substance” is meant one of the black carbonaceous substances found in nature, alone or in conjunction with subterranean petroleum or natural gas deposits. Subject to the requirement that the substance must be able to be rendered liquid for application, any such substance is satisfactory. An especially preferred substance is pitch, but other forms (tar, asphalt) are also satisfactory.

The substance is applied in liquid form and leaves a solid waterproof film. The substance may be rendered liquid by any convenient means. One method is by dissolving or dispersing a solid bituminous substance in a suitable solvent, and many of the petroleums are suitable for this. Alternatively, the bituminous substance may have a melting point, which allows it to be melted to a liquid by heating; it may be applied in this melted state and it will return to solid form shortly after application. It has been found that the materials that have this characteristic (pitch in particular) give the best results.

The coating composition may be applied to a hull by any convenient means. The thickness of the coating is not significant - it should be such as to confer waterproofness on the hull, and the skilled person will readily be able to ascertain what is required in any given case. It is preferable that the hull should be coated both inside and out with the coating composition.

Hulled watercraft according to the invention have considerable durability in both fresh and salt water and are proof against heavy rain and storms. The hulls are of exceptional waterproofness. Moreover, the coating composition is unaffected by any known kind of animal waste product, which makes feasible the construction of livestock carriers of a size hitherto believed impracticable.

The Example is ideally an example that has actually been done (this is not always the case!). Detail should be sufficient to allow the skilled person (see? back already!) to carry out the invention without having to reinvent anything. If the invention is mechanical, there will probably need to be drawings to which this section will refer.

Proper examples are essential even in priority applications - the United States Patent Office is especially strict in this regard and can refuse to give Convention priority to a foreign priority application which is not, to use the US term “fully enabling”, that is, able to be worked by the skilled person. (Explanation of Convention priority and priority application coming shortly).

The invention is further described by means of the following example.

EXAMPLE

Three identical rectangular boxes of cypress wood are constructed. One is coated on the exterior with a hot melt pitch (Baku No. 5 ex Tashkent Enterprises Ltd.), a second is coated both externally and internally with the pitch and the third is not coated and used as a control. All are placed in sea water and loaded with stones such that the tops of the box sides of all three stand clear of the water surface by the same distance. The boxes are left for 150 days. At the end of this period, it is found that the control has sunk, the box with only an exterior coating has taken in an appreciable quantity of water and the box coated on both sides has taken in no water.

The claims define the extent of the exclusivity desired. They start off with a broad claim (the main claim) and then a series of narrower claims. Note that Noah's patent attorney has not only product claims (1-4) but also process claims (5-8), which mirror each other. Other types of claim are possible - for example, “use” claims (“use of a bituminous substance in the waterproofing of a watercraft hull”). In some countries, a “use” claim will protect the particular use and will be patentable over a different use of the same material. This sort of claim works well in Europe; Noah's attorney probably didn't use it because, as the contemporary Europeans were living in caves and painting themselves blue, there wasn't a lot of point.

CLAIMS

1. A hulled watercraft in which the hull has been coated with a liquid coating composition comprising a bituminous substance.

2. A hulled watercraft according to claim 1, in which the coating composition is a bituminous substance that is rendered liquid for application by heating.

3. A hulled watercraft according to claim 1 or claim 2, in which the bituminous substance is pitch.

4. A hulled watercraft according to any one of claims 1-3, in which the hull is coated both inside and outside with the bituminous substance.

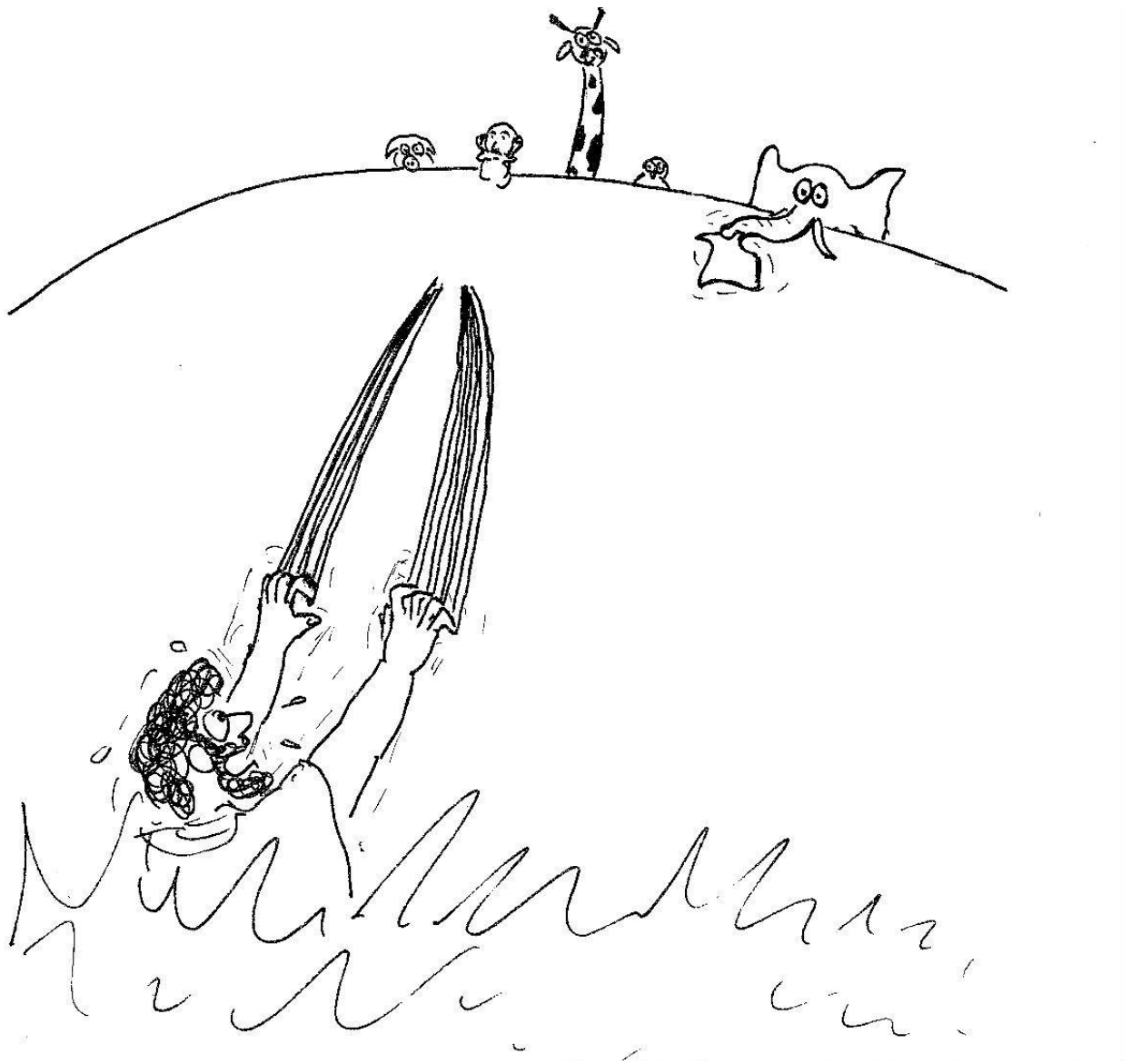
5. A process of waterproofing a hulled watercraft by application to the hull of a liquid coating composition comprising a bituminous substance.

6. A process according to claim 5, in which the coating composition is a solid bituminous substance that is rendered liquid for application by heating.

7. A process according to claim 5 or claim 6, in which the bituminous substance is pitch.

8. A process according to any one of claims 5-7 in which the coating composition is applied to both the inside and the outside of the hull.

P.S. NOAH'S FINAL INTERVIEW WITH THE EXAMINER



"Mr. Noah!!! I am sure we could accept on the basis of claim 4! . . . . no, no, claim 3! . . . claim 2????

More details about details…

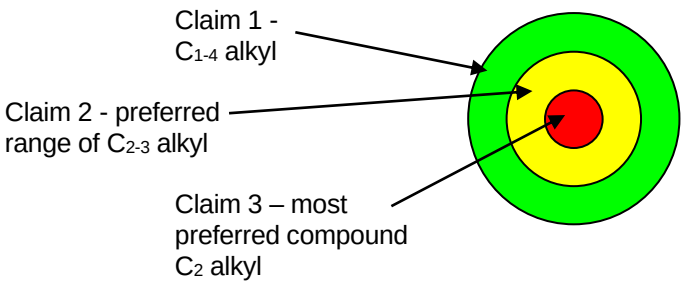
Patent Claims and their interpretation - Caution! Professionals only!

As previously mentioned, the **claims define the exclusivity** sought. They are in a way like gold prospectors' claims staked out in the old gold rush days - as Zeke Kanfind below would say, “What happens outside these here lines ain't none o' my business, but inside here is mine, so keep off!”

However, **claim interpretation** (deciding what a claim does or doesn’t cover) is **not** as **straightforward** as in the gold rush claims and should not be attempted by non-patent attorneys. For example, the British (and US) interpretation of claims is a very literal one and great attention is given to what the claims actually say, and the text can only be used to define claims - it can not add or take away anything from their literal meaning. On the other hand, the German school of interpretation regards claims as merely a guide to the inventive concept. Both the UK and Germany are signatories of the European Patent Convention, and the EPC's way around the dilemma is a Protocol to Article 69 EPC that says, in essence, that claims should not be interpreted in the UK way or the German way, but somewhere in between! In short, **patent claim interpretation should be left to a patent attorney.**

There are usually a number of claims, each one narrower then the previous one. Claim 1, the main claim, is the broadest - it is usually identical with the statement of invention. The idea is to cover everything which could possibly be of interest and which delivers the result promised by the invention (even if only marginally).

Inventors find this concept difficult when they meet it for the first time. For example, the chemists have determined that the ethyl compound is the one - methyl and butyl do not perform nearly so well, pentyl does not perform at all, propyl is nearly as good but costs a fortune to make - so they head down the commercial road with ethyl. But what do the patent folk claim? $C_{1\text{-}4}$ alkyl. Why? To deny as much as possible to the opposition. Who knows, they might find a cheaper route to propyl and be able to undercut your prices. The structure of the claims is a bit like a series of concentric circles.



Should a patent office find a prior disclosure of, say, butyl, you can abandon claim 1 and drop back to claim 2, and so on.

What claims must (and mustn't) say

Claims are there to **define** the **boundaries of an invention**. They therefore must do this **clearly** (at this point most people cry, "You could have fooled me!") and **unambiguously**. The greatest crime a claim can commit is to be indefinite – this is a certain path to rejection. So, anything that leads to indefiniteness is out. Thus, you can never use a trade mark in a claim, because the goods covered by a trade mark can change. So, never "a composition according to claim 1 in which the additive is STINKO™", but "a composition in which the additive is hydroxyethyl cellulose [or whatever STINKO is]".

You can also never use anything like "e.g" – "a composition in which the additive is a cellulosic derivative, for example, methyl cellulose, hydroxyethyl cellulose…". You make the cellulosic derivative one claim, and then you make the others dependent claims (" a composition according to claim x, in which the cellulosic derivative is selected from methyl cellulose, hydroxyethyl cellulose…"

It is also not permitted to refer to other documents, so no "a composition in which the additive is as described in US Patent 1234567".

The **claims must stand completely on their own**. It is permissible to use the specification as a dictionary to interpret a claim, but nothing can take away from the plain meaning of a claim. This is especially important in the USA. If you say in a claim that it must be black, then that's what it is, even if you've said that it can be any colour in the specification. This is the reason why, in US patents, claims are often drastically narrower than the specification. Unlike many other countries, the specification in the USA is never amended to bring it into line with claims amended under examination. In the USA, the old House of Lords dictum (in *EMI v. Lissen*) that "the forbidden field must be found in the claims and nowhere else … what is not claimed is disclaimed" holds absolutely true.

Types of claim

The **best type of claim** of all to have is a claim to a **product**. This prevents anyone else from making it. Even if someone else were to come up with a method of manufacture that is vastly superior to yours, s/he ends up making your product and therefore infringes. Moreover, a product can be analysed and infringement detection is therefore relatively straightforward. However, product claims are not always possible - for example, if you discover a compound that is a useful fragrance ingredient, and you claim this compound in your patent application, you'll be killed by a prior patent which discloses the same compound as a lubricating additive for engine oil. So, it's no good writing "a compound for doing this, that and the other", because in most countries, such a statement of function is

not considered as limiting the claim to that field. When a product claim isn't possible, you'll need one of the other types below – indeed it's worth having them, even when you have valid product claims

Process or method claim - covering a method of manufacture or a method of application of your compound ("a method of providing a fragrance, consisting of the addition to a fragrance composition of this compound") Such claims are not so good, because it is harder to detect infringement - you've got to catch someone actually doing it. In Europe, the product of a process is covered by the process claim.

Product-by-process claim - basically a claim saying "My compound obtained [in Europe "obtainable"] by doing this and this and this" - a sort of product claim which is not as good as a proper product claim, but which is better than nothing. Not accepted in some countries unless the product of the process is genuinely novel. Usually superfluous in Europe where the process is considered to cover the product and only accepted if there is no other way to claim the product (e.g., the product of a complex mixture of reactants).

Composition claim - covering the use of the compound in a specific composition. Narrow, and often easily avoided, but useful either if you have any sort of synergy among the components or if you have the ideal composition.

However, as for product claims above, calling a known composition by a different name will not make it novel. For example, a major multinational corporation (which shall naturally remain nameless) submitted the following claim to the European Patent Office:

An ironing aid for use in a steam chamber of a steam iron, comprising:
(a) 0.001 to 5 wt.% of a water-soluble perfume
(b) water with a French Hardness of 20 or below;
(c) 0.1ppm to 3 wt.% of at least one water-soluble preservative, whereby said water-soluble preservative is selected from aromatic, linear or branched C1 - C20 alcohols and mixtures thereof; or
at least one isothiazolone-based compound.

and received the following response:

The claims are so broadly defined that it appears that an alcoholic drink, for example, beer, would fall under claim 1…beer has a characteristic smell and thus contains water-soluble perfumes…it cannot be believed that beer is made from such hard water that it would have a French Hardness of above 20 [French Hardness 20 is medium hard]*…ethanol falls under the definition of component (c)…it appears, therefore, that the claims should be drafted somewhat more precisely*

So, no "free beer" claim here! Just labelling it an "ironing aid" doesn't help. In such a case, you need a…

Use claim - covering the use of the compound in a new application. Allowable in some countries, regarded in others as disguised method claims and not allowed.

All are useful in their own way, and patent attorneys try to include as many types as possible in an application.

Some particular claim forms that are encountered include

"Characterising" claim - this is the form preferred by the PCT and the EPO, although not actually obligatory (there are countries that insist on it). In this type of claim, everything before the phrase "characterised in that" is prior art, everything after it is invention. Thus,

"A method of making haggis, **characterised in that**, the sheep is drowned in 20 year-old single malt whisky prior to butchery."

The Germans like this form too ("...dadurch gekennzeichnet..."). Sometimes useful, but not universally applicable.

Jepson claim - the US equivalent of the characterising type - the form is

"**In a process** for making haggis **wherein the improvement consists of** drowning the sheep in 20 year-old single malt whisky prior to butchery"

Markush claim - the USPTO doesn't like alternatives designated by the word "or" - this is "indefinite". But life is full of alternatives. What to do? The ingenious solution was judicially approved in the leading case *In re Markush*, and it consisted of saying "selected from the group consisting of A and B and C", instead of "A or B or C". Much beloved of chemists, particularly in the pharmaceutical and agrochemical field who start with a general formula and build thereon Markush formulations which encompass half the observable universe.

Omnibus claim - a feature of old British law was that you could **claim the examples**, so that, if all else failed, you still had them. The classic omnibus form is

"A polymer substantially as hereinabove described, with reference to any one of the examples"

This type is still allowed in some Commonwealth countries, and even in the UK itself, despite its alignment with European patent law (which doesn't allow them). If there are comparative examples (showing how awful is the prior art), the patent office will object to "any one of the examples".

Other bits and pieces; abstracts, drawings and gene sequences

Most countries require the applicant to submit an **abstract** of the invention, typically of **150 words maximum**. This is purely for searching and classifying purposes and is not examined.

If the invention is a mechanical device, **drawings** will most certainly be needed and the examples of the chemical application will be replaced by a description of the drawings. In chemical cases, graphs, spectra, molecular weight distributions, etc. (but not tables) are considered drawings and must comply with the drawing requirements with regard to evenness of lines, etc. It often means that spectra have to be specially redrawn, because copies of the originals may be too faint or uneven. Drawings are placed at the end of the description, after the claims and abstract, in a separate series of pages and often with their own numbering sequence. Most countries require good quality drawings on application, but in the USA you can initially get away with relatively informal drawings. This can be a problem with US-sourced mechanical inventions, and care has to be taken that good drawings are available immediately for filings outside the USA.

A feature of many biotech. applications is the **gene sequence**, the series of nucleotides of the CCATGATTGACA…type which goes on forever (or perhaps it only seems that way). Once upon a time, applicants submitted these on paper, but then patent offices required that they be supplied also on electronic means (diskette or CD-ROM). A number of patent offices provide special software (*PatentIn*) for this purpose. The sizes of these sequences have now reached such proportions (literally thousands of pages)

that part-electronic filing for such applications is permitted in many countries - applicants can submit the sequence on CD-ROM alone.

This represents a major cost saving - most patent offices charge extra for applications with large numbers of pages, the PCT's CHF15 per page for each page over 30 being typical. So, if you file a description of 140,000 pages (no kidding! one such patent application was received by the PCT), you are up for (are you sitting down?) CHF2,099,550 (about $US2,270,245) in extra page fees. If a PCT application is filed electronically, with the sequence in a PCT-approved format, no fees are payable. However, if the sequence is in, say, PDF format, the normal page rates apply.

Filing sequences electronically is also safer as it reduces the chances of an error in transcription of the sequence - such an error cannot be corrected and the application is worthless (to be correctable, an **error in a patent** application is **correctable if** both the error and its correction (what was really meant) are **obvious**). This actually happened in EPO Case G11/91 CELTRIX in which the Enlarged Board of Appeal held that correction was not possible.

Microbiological inventions

As we've already seen, it is the duty of the applicant to describe the invention such that the skilled person can perform it. But what if the invention is a modified micro-organism? Such things are not easily described on paper. The requirement here is that the applicant must **deposit a sample** of the microorganism with an approved International Depositary Authority, which can release samples to third parties when the application is published. Under the Budapest Treaty, a number of International Depositary Authorities have been approved for this purpose. On deposit, the applicant receives a reference number, which s/he must include in his or her application.

Before you start patenting…

Initial considerations…ask yourself some important questions…

…Do I have freedom to operate (or, do I avoid other people's patents)?

As mentioned already on p.26, this is the most important question of all. **Before you can patent** (that is, stop people doing what you want to do), you must first **make sure that you can do it!** This means that whatever it is must be outside other people's patents (however, for a special case, see "Selection patents" on p.96). This must be checked (so far as it's possible) before even starting to draft. It is an inconvenience not to be able to patent a valuable product, and therefore to be unable to stop every Tom, Dick and Harry copying it and stealing some of your market share, but it happens to all of us every now and then. However, infringing someone else's patent can be a disaster. Patent infringement is very expensive both in terms of damages to be paid to the patent owner and in terms of perhaps having to throw away major investments made in preparation for manufacture and marketing, or even worse, in actual manufacture and marketing (see p.100). It also does not help your business reputation.

So, if you have a new product or process, do see your patent attorney and let him or her clear it for you. It is no embarrassment to reinvent the wheel - people do it all the time - but it would be an embarrassment to try to sell it as a novel product. A **search of the prior art** can be easily arranged and your attorney will be only too happy to advise on your situation (see p.61). You also have do-it-yourself possibilities (see p.111).

To be free to operate, what **you** are doing/making/selling **must be outside the valid claim of a granted patent.** If what you do falls within such a claim, you infringe. However, remember that you may be looking at a published application (and most of what people refer to as "patents" are just that these days, because nearly everyone publishes early, prior to examination). You cannot infringe that, because the applicant has as yet no property that you can infringe. But if and when it's granted, you might infringe it, if the granted claims encompass what you do. So, if it looks close to what you want to do or already doing, see your patent attorney – s/he can arrange to have it watched, to see whether you actually do have anything to worry about.

Care should also be taken to avoid "contributory infringement" (see p.102).

…how do I know that I have a patentable invention in the first place?

Hmmm, not easy to explain this one. Try the imperfect guidelines in Appendix D. And do a prior art search (or have one done).

…do I really need to patent?

Not always. Sometimes freedom to operate (to make and sell what you want to make and sell) **is sufficient** for your needs. Not every product or process is a world-beater and the cost of getting protection may be too high with respect to the benefit you expect. Remember that the object of businesses is to make and sell products, not produce patents. In any case, the cardinal rule is:

WHEN IN DOUBT, FILE

If you finally decide you don't want or need a patent, you can always withdraw the application – if this is done in good time, there will be no publication (see p.85). The question of cost brings us neatly to…

…how much is this going to cost me?

As mentioned back on p.15, this is not going to be cheap, so having decided that you do need to patent, consider…

Strategy (or, what do I want to achieve by patenting?)

Possible reasons for patenting:

- **Monopoly**; you want to have the market to yourself and to stop the competition copying your product.

- **Blocking**; you want to impede or stop the competition from using a particular technology. Some companies are celebrated for this – they file many patent applications (100+ is not unknown) in an attempt to saturate an area and dominate it, regardless as to whether what they're filing is actually any use, apart from blocking. This is very much an offensive strategy. Advantage: if you're lucky, you can cause your competitors nearly endless heartburn. Disadvantages; you need nearly bottomless pockets, and what you file might be of no value.

- **Licensing**; you want to license the technology (if you have developed something that you yourself won't sell, e.g., a piece of testing equipment).

- **Publicity**; you want to display to the customers that you are an innovative company and thus get your foot in the door (there are industries in which this is particularly important).

Bear in mind that patenting may not always be the best way of achieving your ends (see, for example, the section on publication and secret use in the next section). In fact, sometimes, if you have a technology that may be difficult to patent, it may be best filing a patent application in the UK Patent Office (£130 fees) and allowing it to publish, or publishing it in a publication such as "Research Disclosure". This ensures that, if you can't patent it, neither can anyone else.

Your desires will determine whether and **where to patent**. Patents are nice to have, but they are expensive. Therefore, you need a strategy that ensures the best return on investment for you. There is no universal strategy, because industries and goals are so different, but not even the big pharma companies patent everywhere. So**, some considerations** may be:

1. **In which countries are you going to do business with this product?** Obviously, if the product is relevant only to the Japanese market, it is pointless to patent it outside Japan. Having decided that, then -

2. **Is the return on a patent in any given country worth it?** By return, I mean the sales and/or the ability to block a competitor If your sales in Colombia are going to be $US1,000 a year, is it worth paying the $3,000+ for a patent in Colombia?

In relation to point 1, note that it may not be necessary to patent it everywhere it will be sold. Where sophisticated products and processes are involved, it may be that only a few countries have the facilities to make or utilize them. Patenting in these few countries can therefore have an effect extending beyond the countries themselves.

A former employer of mine applied these principles ruthlessly to its chemicals business. It sought to cover 80% of the market, because it assessed that this could be done at reasonable cost – above that, it believed that the law of diminishing returns came in. Its pharma patent people had a whole battery of foreign filing "Variantes" to suit different circumstances, which, I believe, still continues.

In addition, **in applying for a patent, you are disclosing your technology to the competition** when the application is published, and that competition will then start looking for ways around it, if it is interesting. And they could find one (see p.96 on selection inventions). This is the double-edged sword of patenting. It is risky. Only you can determine whether the risk is worthwhile to you.

A money-saving possibility available in many countries is the utility model. It's not appropriate in all cases, but where it is, it can represent a considerable saving. See more on p.95.

What if I decide NOT to patent – what are my options?

There are several, namely, publication (so that, if you can't patent it, neither can anyone else) and secret use.

Publication

Basically any publication in any language anywhere in the world is novelty-destroying for all matter in it. In the words of an old British judgement, disclosure to a single person "without inhibiting fetter" is a publication. (This is why it is so important to have a confidentiality agreement in place with a customer, if it is desired to show a potentially patentable invention to the customer prior to patent filing).

One could be clever and have both publication and secret use at the same time by publishing in some relatively incomprehensible foreign language (for example, in Irish in *An Phoblacht*), or by filing it as a patent application in some obscure non-examining foreign country where it would lie dormant until aroused (some of the Latin American countries, before they all signed up to GATT-TRIPS). However, the cost of doing this might outweigh any advantage.

One could publish it on a website, but different countries have different rules as to whether and when this constitutes a publication.

The most universally-recognised route of quick publication is *Research Disclosure*, which is part of the searching literature of all patent offices. RD will have your publication on its website on the same day and in the following month's printed publication. Current costs are $US120 per page.

Secret use

Sometimes known as the "Coca-Cola" approach (see p.19). There are **circumstances in which** it may be **better not to patent** an innovative idea, **but** instead to **work** it **secretly**. The reason for secret use most frequently encountered is that use of the invention cannot easily be detected. This gives rise to two possibilities;

(a) if you don't patent - there is no publication, the competition cannot detect what you're doing and therefore cannot copy you - you have an eternal monopoly; and
(b) if you patent – there will be publication, and if the competition copy you, you cannot detect infringement – and, as previously stated, if industrial espionage is the only way of detecting infringement, perhaps it would have been better not to patent.

Of course, if you decide to work secretly and a competitor comes up with the same thing, either independently or by reverse engineering yours, there's nothing you can do about it. Instances when secret working may be the better option include:

(i) you discover a new manufacturing method for an existing chemical product, which increases the yield substantially, but the product is the same;

(ii) you devise a new testing apparatus which allows you to test more efficiently, and you have no intention of selling the apparatus or licensing its manufacture.

The decision as to whether to work secretly or patent will depend on the individual circumstances of each case and what you want to achieve with a particular technology. In some cases, having a patent and advertising the fact can be good publicity and create an impression of innovativeness. However, remember

WHEN IN DOUBT, FILE.

You can always withdraw before publication and remain secret.

The US situation

With the coming of the AIA, the previous US law is changing. Previously, the "first to invent" priority system (see p.70) sought to encourage patenting and therefore publishing, and a person who "abandoned, suppressed or concealed the invention" lost the right to be considered the true and first inventor. This meant that the second user could prevent the actual originator from using it. Under the AIA, the prior use defence, previously available only to business method patents, is now available for all technical fields. The person making the defence will have to provide clear and convincing evidence of the prior use.

However, the old law and practice may still apply to applications filed under the previous law, so there is a need to be careful.

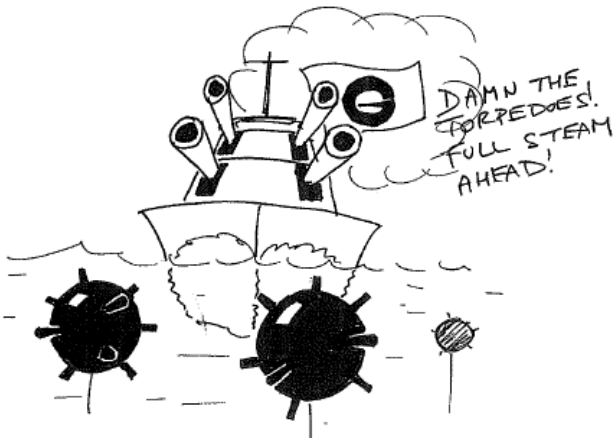
The USA and trade secrets

Should you really wish to keep something secret in the USA, you can have it considered a **trade secret**. This was **previously** regulated under **State law** in the USA. (However, there is **now a Federal** trade secrets **law** (the *Defend Trade Secrets Act*). There is no registration system for trade secrets, but the **person wanting** something to be considered a **trade secret must take all necessary precautions** and measures to maintain it a secret, such as marking all relevant documents "confidential", ensuring that all personnel involved in the trade secret are obliged to maintain secrecy, and so on. It is useful for things where detection of infringement would be difficult.

The European Union is about to adopt a Trade Secrets Directive.

Finding what's already out there – searching

As a skilled person, you will already know a lot, and this will be of enormous assistance to your patent attorney. But you won't know everything. Much of your knowledge will be derived from what's already used in the industry. However, the number of patented inventions that end up as commercial successes is relatively small. Lots fall by the wayside, but the related patents are still there as publications, lurking like unexploded mines…



What will be your minesweeper? Well, you can do quite a lot yourself these days, courtesy of the various on-line search possibilities (see p.111), but there are tools available to professional searchers that will find out more than you can, and you should avail yourself of these services. Your patent attorney will know what these are and be able to advise you appropriately.

With all of these tools at your disposal, you will find most things, but you will not find everything. Computerised databases are not all-knowing and many do not extend far back in time (a consideration that will become less important as time goes on). And of course they're put together by people and will have errors. In addition, all the means of searching (classification, keywords) have their drawbacks, and searchers will ask the eternal question to which there is no answer – didn't I find it because I asked the wrong question, or because it wasn't there to be found? The only answer is clairvoyance, and that's in short supply.

In addition, there is **prior art that no amount of searching will find – the pending applications in the 18 months between filing and early publication** (see p.85). So, there is always 18 months'-worth of unknown material. However, in most countries (but not in the USA), this can be cited only in a novelty objection, that is, it cannot be combined with other material and must be considered on its own. (In European practice, this is known as an intermediate or "54(3)" citation). To be relevant, it must score a direct hit on your invention. This can happen, but you'd have to be very unlucky.

Nevertheless, with what's currently available, at least 90% (probably more) of the relevant prior art should be discoverable, and this will have a bearing on what is eventually filed, or whether anything is filed at all.

A further way of doing a prior art search is to **have a patent office do it for you**, by filing an application. Several offices offer cheap, quick and generally good quality searched for applications, two being the UK Patent Office (£150 ($235) application + search fee) and the German Patent Office (€290 ($386) application + search fee). In the case of the UK Office, the search is generally done within 4 months (and it will accelerate that if you tell it a good story). This can be a good way of both planting your flag in the ground to get a priority date (see p.65) and to get a search done. In countries that require a first filing in the country (e.g., the USA), it is still possible to file a UK application for the search only.

So, how do you go about getting a patent?

You have taken the essential first steps; you have a patentable invention, you have freedom to operate and you can pay the inevitable bills. For the next steps, see p.65. These should be done as early as possible. One critically **important** thing is **that**, unless you're in a grace period country (see next section) and intend to patent only there, the **invention must not** be **disclosed** in any way **to the public prior to** the **filing** of a priority application. If disclosure to someone outside the company is necessary, for example, for some sort of testing or trials, this should be done under a secrecy agreement, which should be completed prior to any disclosure. Your patent attorney would be happy to provide such an agreement. Similarly, no scientific paper should be published or conference presentation given before filing. Any publication of the invention prior to the filing of the priority application is fatal in most countries.

There should also be **no commercial dealing** in the subject-matter **before filing**. In a UK case (*Wheatley's Application*), a safety device for coal conveyors in mines was shown to the relevant UK Ministry prior to patent filing. This was done under confidentiality agreement. The man from the Ministry was so impressed that he promptly ordered 10, and the order was accepted – and the subsequent patent was held invalid.

A recent US case, *Hamilton Beach Brands v. Sunbeam Products*, illustrates the dangers. The pre-AIA US law had a so-called "on-sale bar", that is, any commercial sale prior to one year before the filing of the patent application, i.e., outside the US grace period (see next paragraph) is novelty-destroying. Hamilton requested a foreign supplier to manufacture cookers, to be delivered to its US facility, the request being made before the commencement of the eventual grace period. Even though the final release order to the foreign supplier was given within the grace period, it was held that the fact that an order had been given indicated that the device was "patent ready", and that this violated the on-sale bar.

There are many good reasons why an invention should not be published until foreign filing (a year after priority application filing). For example, early publication would destroy any chance of amendment. Ideally, there should be no publication until foreign filing, and more preferably not until the automatic publication that occurs in many countries at 18 months from priority. Obviously this cannot be rigidly reinforced - there may be occasions when some sort of relatively early publication is necessary, such as a customer eager to buy everything you can make - but it is a goal worth aiming for.

Grace periods

A grace period is a **period within which something** you did (or didn't do) and that would **normally** be **fatal** to a patent application **has no effect**. We've already seen the two accepted universal grace periods under "novelty" (p.32). However, in some countries, any kind of publication prior to patent filing may be allowed, without detriment to the application in that country. At the moment, 38 countries allow such periods. The **most important** of these is the **United States** (but see next page). Other important examples are Canada, Mexico and Australia. The grace period is usually **one year**; however, the Japanese grace period is only 6 months. In most grace period countries, you can publish details of your invention by any means (printed publication, use, oral disclosure) without detriment to your local patent application, provided that you file your application within one year from that first publication. However, again Japan allows the grace period only in particular circumstances, for example a paper to be presented to a learned society or published in the journal of such a society.

However, note that I said “in that country”. The **benefit** of the grace period **does not extend to other countries** that do not have grace periods of their own, e.g., the European countries, and utilisation of the grace period in, e.g., the USA by some sort of publication prior to the first filing in the USA will destroy your chances of patents in many countries. US inventors, used to their own system, frequently assume that the rest of the world works the same way. So, if you want patent cover in many countries, file first, then publish.

For non-grace period countries such as Europe, the system has the advantage that, if your invention is inadvertently published in Europe, you can still apply for a patent in a grace period country.

In an attempt to persuade the USA to change from its “first to invent” system (see p.70), it was proposed at one point to introduce a universal grace period. It has never gone any further than that, but the subject has recently resurfaced and something could come of it.

The advent of the *AIA* in the USA has greatly narrowed the scope of the US grace period. Previously, **any** disclosure of the invention within the grace period was covered, whether by the inventor or not. The new provisions define the grace period to apply only to the inventor’s own disclosures. Moreover, they apply only to the same subject matter. In other words, if an inventor communicates his or her invention to a third party, and that third party then publishes a variation on the invention, this could be held to be prior art. Small wonder that many US attorneys are now advising their clients to be very European and file as soon as they can, rather than rely on the grace period for protection.

There has now been introduced into US Congress the *Grace Period Restoration Act* of 2015, which seeks to get back some of the lost scope. Early days.

Applying oneself to the job…

Priority Application - This is the **first application filed**, and it should be filed as soon as possible - it is rare, but not unknown, for a competitor to file a few days previously an application for an invention whose disclosure overlaps yours.

Where to file? In many circumstances, there is no choice; **most countries require** you either to **file** your application **in the country in which it originates or**, if you want to file first elsewhere, to **apply for** an **exemption**. This is generally required on the grounds of national security. For example, to file an application in the UK on an invention with a US-domiciled inventor requires a foreign filing licence from the USPTO (generally readily granted, but it can take some weeks). The requirements of some countries in this regard are quite strict – for example, France may regard some inventions made in France as part of the *patrimoine national*, nowhere clearly defined. You can apply to the French Patent Office for clearance and receive it, but this doesn't stop a French court reversing the decision sometime in the future. However, the problem can be solved by filing a European application in the French Patent Office – it can even be done in English. Some countries, e.g. Australia, Germany and Switzerland, have no requirements of this kind, and inventions originating in those countries can be filed anywhere.

So, why even consider filing outside the home country? It can be cheaper. For example, a filing in the UK Patent Office costs only £30. In addition, the UK Office offers a cheap (£150 ($US240)) search within the priority year, which will give you an idea as to whether the application is worth pursuing. The German Patent Office also offers such a search, and the costs are similar to those of the UK Office, so it's a matter of language.

Filing a priority application in Europe can actually be free. The European filing fee is €190/$US252 (€105 if filed on-line), but the EPC's rules provide that they must be paid within one month of a reminder from the EPO that you owe it money. If you don't pay, the application lapses – but by this time, it has a filing date and a filing number, and you can claim Convention priority from it (see p.70). The EPO offers a search, but it's wickedly expensive €1105 ($US1470)).

Priority date

The **date of filing of the priority application is the priority date**. This is an important date; if two people invent the same thing, the one with the earlier date has priority (but see p.70 with respect to the USA and "first-to-invent"). The filing date in most places is the date of receipt at the patent office, but the US system has the good feature (well, there had to be one somewhere) that the date of placing in the hands of the US Postal Service for transmission by registered mail is considered the filing date. Thus, even if your US application inadvertently goes for a three-month holiday to Puerto Rico, it is still deemed filed as of that date.

Provisional applications

In some countries, it is possible to file a so-called "provisional application" without claims. Formerly a feature of old British-type law (which lives on in a number of Commonwealth countries), it has also been adopted by the USA. The **sole function** of a "prov." is to **establish a priority date**, and it is **not examined**, except when it is necessary to check whether an aspect of a later substantive application claiming priority from it is actually entitled to priority.

It was allowable under old British practice to draft a fairly general description and then, after a year, when more was known, to file a substantive application much richer in specific detail. In most of the world, this is now not permitted - the new detail constitutes "new matter" which is not entitled to priority. You can add new matter to a prov at foreign filing time, but that new matter is not entitled to the original priority date.

Filing a US provisional is much cheaper than filing a regular US application, which you can still do. Official fees are $US260) for the prov and a total of $US1600 for a regular filing – made up of $280 filing fee + $600 search fee + $720 examination fee.If you qualify for "small entity" status (less than 500 employees), those fees are halved. The *AIA* has introduced a "micro-entity" status, with a 75% fee reduction. And of course the attorney's fees are on top of that. (These are the last US official fees you will pay until the issue fee for grant - $1780 – but there will be attorneys' fees).

US "provs" are acceptable as priority documents for foreign filing, even though they can be filed without claims (this used to cause problems with old British-type provisionals in some countries). In any case, nearly all US attorneys include some claims in their provs.

So, how much information is needed in order to file a priority filing?

It cannot be stressed too much that **your attorney does not need everything**. You do not need to work at a thing until you can dot all the i's and cross all the t's, in fact you must not. . I know of one large company that threw away a valuable lead by delaying filing until it understood why a technology worked. This is irrelevant to a patent. A patent is a practical document; it only has to say, in essence, "do this, and you'll get this beneficial practical result". If you have something that delivers a potentially commercially desirable result and you can back that up with a working example, go and see your patent attorney right away. You may find that your concept of the invention broadens with time, but in tightly-contested fields, it may be important to get that early priority date. If you find out more later, you cannot add them to that original filing, but you can augment it with further filings, and two or more filings can be made into one at foreign filing stage (this is called "cognation"). The Japanese like to file lots of applications and cognate them, but the best one I've found is the UK-originating biotech application EP 1 033 405, which was made up from 283 prior applications!

On the other hand, **your attorney does need something!** There are those who go to the opposite extreme, come up with an idea, give it to a patent attorney and expect him or her to do all the rest. It's as if you say to your attorney, "I have decided to patent a car that does 200kph and gives 1L/100k fuel consumption at the same time. Please proceed." S/he'll need to know how it was done, otherwise you'll fail in your duty to disclose the invention. By all means talk to your attorney as soon as you have the idea, but without practical details, you're going nowhere.

Costs? The official fees mentioned above will be the minor component. They will be dwarfed by your attorney's fees (conferences, correspondence and drafting). How much will depend on time spent. However, defining an invention in such a way that it will stand up in court, should it ever come to that, is a job that can best be done by a patent professional.

In addition to finding out what you've actually done, your attorney will encourage you to **look beyond what you have actually done experimentally**, to think of alternatives. S/he will want to include anything that you think has a chance of working (even if at this stage you do not actually know). And when an attorney says "working", s/he includes things that work only slightly (naturally, s/he will not include things that will not work at all).

You may never want to market such things, but by covering them you deny them to competitors who cannot use them as starting points to try to get round your final patent.

The approaches of your attorney and yourself are different; in your search for a marketable product, you concentrate on a narrow area and investigate it in depth, whereas the attorney will try to cover broad areas in a relatively shallow way to keep others from marketing a product that lies within that broad area. But the approaches complement each other; a broad protection gives you plenty of cover should your chosen development path not come to fruition and you have to try something else. Moreover, if you have a broad scope, you may dominate other later patents that seek to cover "selection" inventions lying within this broad scope (see p.96). For example, you patent a broad range of compounds and somebody finds a novel use for some of those compounds. You can't work their invention because you didn't invent it, but they can't work theirs without your consent, because they would have to use your compounds. You can then cross-license each other, ensuring that you have property that a narrow scope would have denied you. So try to think like the competition; **if you had to get round your patent, what would you do?**

It is important to have at least one working **example**, preferably the best one you've got. This is particularly important from the point of view of any future US filing - the USPTO may refuse to recognise the priority date of a priority application if it is not "fully enabling", that is, if the teaching in the patent application is insufficient to permit the skilled person to work the invention.

Filing; fax and electronic

Filing is accomplished by sending the specification and application form(s) to the Patent Office. In the past, this was done by posting. Most patent offices now accept filing by fax, provided that the original arrives within a specified time (typically one month later). Thus, it is possible to get an early priority date. However, these will eventually be superseded by electronic filing. The Japanese and US Offices have used it extensively for some time, and the EPO and WIPO are also moving completely to electronic filing – a time will come when paper filing will be obsolete.

The other consequence of these methods is that it is possible to file when a patent office physically is closed for business. This was also possible in the British Patent Office of the 19th century, by the simple expedient of tying the application to a brick and throwing it through the window. But first, the inventor would call a policeman to witness the event, and the date and time of filing would be noted in the constable's notebook. And, no, this isn't a joke!

...on the evening of Friday, 21st. August,1891, at 9.17 pm precisely, m'Lud, the accused was observed to file a patent application at the premises of the Patent Office by attaching thereto a missile, to wit, a brick, and projecting said missile through a window of said premises, said action occasioning physical damage to said premises and contents thereof...

Having filed your application, by fair means or foul, you enter the dreaded world of…

Deadlines

From now on, your life will be regulated by the things. For a start, the Convention priority year starts from the day you apply (see next page). Miss that, and you lose the benefit of a year's priority, and someone who files on the same thing after you may get the right. The priority year is absolute everywhere – miss the anniversary and only something extraordinary (such as a postal strike or a natural disaster wrecking the patent office) will save your priority. In many cases, a deadline falling on a weekend or a public holiday will automatically shift the deadline to the next working day.

The best idea is **DO NOT MISS ANY**. But, given the fallibility of we humans, it can happen. Can we recover from the brink of catastrophe? In some cases, yes. An incomplete list is provided as Appendix K.

Commercialisation in the priority year – cautionary tales

Once you've filed your patent application, you can go out and tell the world about it – but if your invention should change in any way in the priority year, such that what you've told the world was NOT in the priority application, you might have problems. You might be held to have published the invention.

For example, say you have invented A-M. In the year between priority filing and foreign filing (see next page), you've discovered that X is the best. So, you include X in your foreign filing. This is perfectly fine – but X will take as its priority date the date of the foreign filing, not the date of the priority filing. And if you've commercialized X before the foreign filing, you have published it, and any patent granted will be invalid with respect to X. So, before showing it to customers, be sure that any showing is done under conditions of confidentiality, unless you're absolutely sure that you've nailed down everything. If necessary, file another application including X prior to showing it.

In a recent Australian case, *Bradken v. Lynx*, involving railway wagons, it was held that the patent covering Lynx's wagons contained an essential feature not in the priority application. This meant that the feature was accorded a priority date later than Lynx's supply of wagons to mining company BHP for trial. The court held that these were for "reasonable trial", and therefore could be considered secret use, and not publication.

However, had BHP bought the wagons, it would have been a different story. Once a commercial dealing is made, that's the end of any secrecy. See *Wheatley's Application* on p.63).

Moral of this story; **be very careful about any sort of publication prior to foreign filing or early publication.** It is sometimes necessary, but if **it can be avoided, avoid it.**

The joy of filing in foreign parts…

Foreign Filing is done **within a year from priority application**, to gain the benefit of Convention priority (see below). When I started in the patents business ten million years ago (it only seems like it), people often applied for patents because, well, it was good to have patents, wasn't it? They looked nice, with their shiny seals and pretty-coloured ribbons, and nobody worried too much about costs. And if they made some money for you, so much the better – icing on the cake! However, nowadays, **foreign filing is too expensive** to indulge in **just for** the **fun** of it, so you should consider carefully whether you want to foreign-file, and where.

Reasons to justify foreign filing (or not)

Typical reasons include (a) a marketable product is in existence or in sight, and it may be of interest in other countries; (b) the technology is a strategic one and there is a need to defend an area of technology; (c) there is a possibility of licensing the invention; or (d) the application can hinder the competition. If none of these apply, the application can be abandoned and refiled without any publication of the idea taking place. You lose the priority of the original, but we have a new valid application. Hopefully, nobody else has thought of the same idea between filing and refiling...

During the year, you have hopefully defined your invention much better and your attorney can now prepare a more detailed disclosure. In an ideal world, s/he would not have to do this, because, as previously mentioned, any **added matter is** regarded in most countries as **"new matter"** and **does not have a right to the priority date**. Thus, if you initially disclosed "$C_{1\text{-}4}$ alkyl", but not specifically "ethyl [C_2]", in the priority application, and then you specifically disclose "ethyl" for the first time in the foreign filing application, "ethyl" is not entitled to the priority date – its priority date will be the actual date of filing of the application specifically mentioning it. This will only come out in prosecution if somebody else has filed an application for an "ethyl" embodiment between your priority date and your actual filing date in the country concerned (which becomes your date for "ethyl"), or if it becomes an issue in litigation. So, insofar as it is possible, nail down all the most important variants at priority application time. **Note that this is your very last chance to add anything substantive to the application.** Once the foreign filing application is on its way, protection for subsequent matter is only possible by filing a further application (except in the special case of the US C-I-P (see p.88).

Another consideration is extra examples. Some countries, notably the Asian offices (China, Japan, Korea), will seek to restrict you to what you have exemplified. So, if you have claimed the universe but have only your own house as an example, the Asian Offices will give you a house arrest of a different kind.

Best mode of performing invention

It is a **requirement** of a number of patent offices (**in** particular, the **USPTO**) that the "best mode" of working the invention known to the applicant be disclosed. This may have to be updated when refiling in the USA (see p.88). The US best mode requirements have changed with the *AIA* – the failure to disclose best mode is longer a ground for claim cancellation or invalidation in validity or infringement proceedings. However, it is still wise to include it.

Claim numbers and extra claims fees

In most places, extra fees are charged on claims exceeding a defined number, for example, 15 in Europe, 20 in the USA. Claims in excess of 20 now cost $60 per claim in the USA and €210 ($279) per claim in excess of 15 in Europe (in excess of 50, it's €525!). It is best to keep to a number that avoids extra fees (not always possible). Particular cases are Japan and S. Korea, where extra claims (more than one!) also cost you at other stages of a patent's life. – both the examination fee and the annual renewal fees rise with the number of claims. It is therefore a good idea to reduce claim numbers in Japan when you request examination there.

Convention priority

Most countries are signatories of the **1883 Paris Convention** and a national priority date can be used to establish **international** (or Convention) **priority**. If you file a priority application in a Convention country and file a foreign filing application in a second Convention country within a year, the priority filing date, not the actual filing date, is considered to be the filing date in the second Convention country. Thus, if I file in the UK today and a competitor files the same thing in Germany tomorrow, my German foreign filing application in a year's time, claiming the UK priority, has priority over the competitor's original German application, even though s/he actually filed first in Germany. Convention priority must be formally claimed by filing a certified copy of the priority application, with a certified translation if necessary.

In most countries, it is possible to claim priority from an earlier application filed in the same country (so-called "internal priority"). This is **not** possible for a US regular application, only for a US provisional.

Right to priority

Do you have it? Make sure by getting an assignment from any non-employed inventor before the foreign filing is made. In some recent cases, it has been held that, where a non-employed inventor assigned later than the foreign filing date, the applicant was not entitled to priority for those parts invented by that inventor. This exploded very badly in the applicant's face, because it meant that certain documents became lethal prior art, which, with an assignment filed in time, they wouldn't have been.

UnConventional problems

Non-Paris Convention members

There are several flies in the Convention priority ointment. A minor one is that not all countries are signatories of the Convention - **Taiwan** is the major exception (although Taiwan has bilateral arrangements with some countries and gives priority rights to, e.g, US, British and Swiss applications, and *vice versa*).

The USA and "first to invent"

This is now almost history, as, under the *AIA*, the USA has moved to a first inventor-to-file system. R.I.P. No flowers, by request. The following paragraphs may still apply to older pending applications on the subject, and have been left as they were. In addition, there is the possibility that first-to-invent may make a comeback. Many in the USA are unhappy with its loss (probably those attorneys who put their kids through college on the fees for a complex interference (see p.90)). The recently-introduces US Inventor Act seeks to bring it back. It remains to be seen whether this happens.

The USA is a Paris Convention signatory that recognises priority dates, and normally there is no problem. However, should there be a dispute over inventorship before the USPTO, usually triggered by the discovery by the USPTO of two applications with overlapping subject matter, a totally different set of rules comes into play, which overrides the Paris Convention priority rules. **Under US law**, the **person entitled** to a patent **is** the **first to invent**, not the first to file as it is in the rest of the world. Moreover, by "first to invent", they do not necessarily mean "first to conceive of it" or "first to try it out". Other factors apply, such as, who was first to "reduce it to practice", that is, who was first to define the invention such that it could be reproducibly carried out, for example, by filing a patent application or making a working model. A further consideration is "due diligence" - how diligent was the applicant in placing his or her invention at the service of the public by reducing it to practice?

Here's a simple scenario (without a simple answer). I conceive of something on 1st. February. I work at it slowly, finally producing a working example on 1st. December. I file my patent application on 31st. December. You conceive of the same thing on 2nd. February, but work furiously and have a working example by 1st. March. You file on 15th. March. Who has the right to the invention? Probably you, because, although your date of conception is later, you showed due diligence in reducing the invention to practice and placing it at the service of the public. This is a simplification of a complicated business that is highly dependent on the facts of the particular case, but I think you get the point.
Should the USPTO notice two overlapping applications proceeding through the office at the same time, it may declare an "interference" (see p.89). This often became breathtakingly complex and was the real reason why many US attorneys would have liked to retain first-to-invent).

Until the GATT-TRIPS changes came into force, the first-to-invent provisions applied only to events occurring in the USA and therefore it was usually only US inventors who could avail themselves of them; the poor foreign inventor could only rely on his priority date. Now anyone anywhere in the world can rely on the US first-to-invent rules in the event of a dispute over inventorship. However, if you wish to do so, you have to keep meticulous records (lab. books, etc.) and have them witnessed on a regular basis (this is standard practice in many US companies).

This is actually not blatant rigging of the rules in favour of the locals - the US Patent Laws flow logically from the highly idealistic US Constitution, written long before the Paris Convention (the first US Commissioner of Patents was Thomas Jefferson), and the USA recognises Convention priority dates as required by the Paris Convention. However, the net effect is often a bias towards US applicants, but the US (characteristically) insisted on the superiority of its system. But is it superior? The short answer is, no. All the self-serving justifications have been stripped away and supporters are left basically with "if it ain't broke, don't fix it". Most of us would say that it manifestly is broke and in need of fixing. It has been said that the quality of US patents would suffer in any change. Judging by the quality of some US patents recently seen (see, for example, pp.16 & 100), the only possible direction they can go is up.

Priority and the WTO

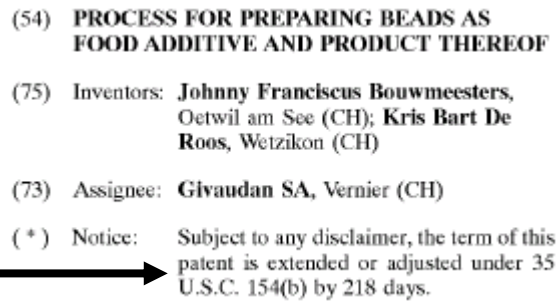
As of 1st January, 2000, the PCT recognises the filing date of a patent application made in a World Trade Organisation member state as giving rise to a right of priority, even if the member state is not a signatory to the Paris Convention. This has little practical consequence at the time of writing, as most WTO members are also Paris Convention members.

"Non-Con" filing

In a highly competitive technical field, possession of an early priority date can be vital, so it is always best to claim Convention priority, but there is no compulsion to do so. Thus, if you decided prior to foreign filing that you didn't want to file in Mexico, but decide otherwise **when** the **Convention date is past**, it is **still possible to file** there. The priority date of any Mexican patent will be the actual filing date in Mexico, not the priority date claimed under the Paris Convention for any other countries. This is known as a "non-Con" filing. It is essential to **file** any non-Con filings **prior to publication**, as the first publication of the invention anywhere will invalidate any subsequent attempt to file in most countries. This is especially true when any early publishing country or authority is involved – these days, most countries publish before examination – see p.85. It is obviously not so urgent where the filing elsewhere is only in countries which publish only on grant, but there are now very few of these (Switzerland is one, but that will also change).

Patent term

The filing date in the foreign country is, in most cases, the date from which the term of the patent will be calculated. One oddity is (yes, you've guessed it) the USA. Although the US now has **20 years** from application, like nearly everyone else, a 1999 amendment of the law guarantees a 17-year term from grant, provided certain conditions of diligent prosecution are met. Moreover, if the USPTO itself is perceived not to have been diligent, the patent term will be extended by the number of days that the USPTO is deemed to have held up grant. From this number of extra days, will be deducted the number of days when the applicant is deemed to have been insufficiently responsive. (This latter has my former colleagues in Novartis chewing their fingernails down to their elbows - in the big money pharma world, a day means millions in any currency you care to name). The result is that it is impossible to tell the expiry date of a recent US patent from its application date, only that it will be at least 20 years from the US application date - the individual patent will have to be consulted – like this one →



(54) **PROCESS FOR PREPARING BEADS AS FOOD ADDITIVE AND PRODUCT THEREOF**

(75) Inventors: **Johnny Franciscus Bouwmeesters**, Oetwil am See (CH); **Kris Bart De Roos**, Wetzikon (CH)

(73) Assignee: **Givaudan SA**, Vernier (CH)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 218 days.

To make things more complicated, in the 2010 case *Wyeth v. Kappos,* the US Federal Court held that the USPTO has undercalculated the dates. People who think they are affected may apply for recalculation.

In the case of an International Application under the PCT (see below), the term of any patent granted as a result of such an application runs from the International Filing Date, not from the date of actual application in the patent-granting country.

How to save money when foreign filing (or at least to spend as little as possible)

Procedure after foreign filing varies considerably from country to country. In some countries, there is no examination at all and a patent grant is automatic. In others, there is a stiff examination. Appendix E gives an outline of procedures in some countries.

Filing in foreign countries is expensive. The **official fees** are the **tip of the iceberg** - there are also any **translation fees** and the **agents' fees** (wife, 2 children and next year's Mercedes-Benz to support). A local agent (usually a firm of private patent attorneys) is essential in most places (in some it is mandatory). And even in those countries which require only an address for service, it is essential to have access to someone on the spot

who knows the local laws and procedures. The average cost of foreign filing in a country where a translation is required (and excluding prosecution and grant costs) is in the region of $US3,000 - 8,000. And of course all this has to be paid in advance, without knowing that a patent will be granted.

Can the risks be minimised, so that better value for money is obtained? Yes, they can, by making use of the supranational possibilities that exist – as we'll see in the next section…

Patenting in lots of places all at once (sort of…)

Supra-national arrangements

The features of the major ones are summed up in Appendix F. For those who want to digest these later, the main narrative resumes with “Early Publication” on p.85.

Patent Cooperation Treaty (PCT)

In brief:

- Mechanism for filing in 155 countries with a single application
- Advantages: greater flexibility in decision making, potential for reduced costs.
- Disadvantages: costs additional to normal filing costs, getting a patent delayed by about 30 months.

PCT arose out of a realization that patent offices all over the place received the same application and did the same search on it and that this was a wasteful duplication of effort. The PCT, run by the International Bureau of the World Intellectual Property Organization (WIPO) in Geneva, is a mechanism that allows you to file a single application, called an International Application. This will automatically cover all Contracting States (155 possible as of April 2022 – see Appendix G for current membership, along with some significant countries that are NOT members, and where national foreign filing is therefore needed). The only large gaps remaining in the PCT’s coverage are a substantial part of Latin America, most of S.E. Asia and many Islamic countries. The European Patent Office is a PCT member, so the EPO can be designated in a PCT application. In fact, some European countries (e.g., France, Italy, Belgium, Ireland) have specified that, if they are designated in a PCT application, coverage in those countries can only be obtained via a European patent. In other European countries (e.g., Germany and the UK), it is possible to obtain patent cover by either the national or regional (European) route (but not both).

International Applications under the PCT are always applications – there is no such thing as a PCT or “world” patent. PCT is merely a conduit to eventual national/regional patents.

PCT **procedure**

PCT filing is a complicated procedure (it was once even more so), but here’s a rough outline:

1. An **International Application** (“request”) is **filed** at a **Receiving Office** (a national patent office appointed by WIPO to perform this function for a particular geographical area). The date of filing the request becomes the International Filing Date, from which the term of any granted patent will run.

2. The application is passed to an **International Searching Authority** (ISA, again, an appointed patent office – for European Patent Convention contracting states (see p.79), the ISA has to be the European Patent Office (EPO)).

3. The ISA does a **search** and prepares two **reports**, an International Search Report (ISR) and an International Preliminary Report on Patentability (IPRP). Both are forwarded to the applicant (not necessarily at the same time). The applicant is entitled to modify the claims and lodge comments in response to the ISR/IPRP, but s/he cannot lodge arguments against the ISR/IPRP.

4. The **International Application** is **published at 18 months** from application date (or priority date, if priority is being claimed). This is when it gets the now-familiar WO code. The ISR is published at this time, the IPRP is not. The International Publication Date is considered to be the national publication date in all designated countries.

5. Within 22 months of application or priority date, or within 3 months of receipt of the IPRP, whichever shall be the later, the applicant may request International Preliminary Examination (called a "demand"). This is known as "Chapter II proceedings" (if IPE is not requested, the proceedings are "Chapter I proceedings"). They are named after the parts of the PCT that refer to them. The IPE is handled by an International Preliminary Examining Authority, again an appointed patent office. IPE is optional.

6. The applicant receives a Written Opinion from the IPEA. This is usually identical to the IPRP previously mentioned. The difference is that the applicant can argue with the Examiner during this procedure.

7. At the end of the procedure, an International Preliminary Examination Report (IPER) is established. In the case of Chapter I Proceedings, the IPER will be identical to the IPRP. In Chapter II proceedings, the IPER will mirror any arguments made by the applicant and may be quite different from the IPRP.

8. Up to this point, the application has been in the "International Phase". It now must enter the **"National Phase"** (or "Regional Phase" in the case of a regional application), that is, it must become a **series of national applications**. This must be done **by 30 months from application** or priority (some countries allow 31 months). At this point, you can choose in which countries you'd like to proceed (there is no obligation to proceed in them all). Once the National Phase has been entered (or the available time limit for doing so has been exceeded), the PCT application ceases to exist.

In a previous incarnation of the PCT rules, Chapter I National Phase entry was at 20/21 months and the only way to extend the National/Regional Phase entry to 30/31 months was by demanding IPE by 19 months from application or priority. Only a few countries still have this requirement (and none of any interest to us) and they will all eventually change.

PCT costs

So, how much does this all cost? Here are some official fees, converted to US dollars at the January 2018 rate:

	Application/search	IPE
EPO	3833	2295
Australian Patent Office	3222	637*
Japanese Patent Office	2824	512
USPTO	3686	820*

**Reductions possible if International search performed by the relevant patent office.*

Private patent attorney fees will be on top of this. The EPO is the most expensive, especially with IPE, but few people elect IPE any more (see below). In any case, European applicants (which have to use the EPO as International Searching/Examining Authority) get much of this back, as, on Regional Phase entry, the EPO gives a 50% reduction in its examination fee and waives its search fee. (It's also worth noting that, if it hasn't done the International search, the **EPO** may charge a **supplementary search fee**).

Disadvantages of PCT

In brief, **cost and delay**. The basic problem with PCT costs is not so much that they're high (they can be, and attorneys' fees will be on top), but that they're additional to the national costs. Eventually, you're going to have to enter the Regional/National Phase, and pay all the usual agent's, translation and official fees. It apparently makes the whole business that much more expensive, and it delays the obtaining of a patent, which you might want quickly sometime (for example, to take action against an infringer). So, you might ask, why bother? Why not go directly to national filings, undoubtedly the quickest way to patents?

Advantages of PCT

The big advantage of PCT is **flexibility**. In an ideal world, we would know all the prior art before we start and therefore the sort of patent cover we would be likely to get, we would be certain that commercialisation of our invention would proceed and we would know exactly where we were going to want patent coverage. In such a world, we would all forget the PCT, foreign-file national applications and live happily ever after.

However, the real world is rarely like that. Some technology fields are very hard to search and you file with your fingers crossed. And patent offices with their classification systems and their manual records can go back much further in time than you can with your computer searches. I once filed an application for a novel paint container, in respect of which we had found no prior art - and the USPTO hit me with a Danish patent from the 1950s, a US patent from the 1930s and a French patent from 1910! If you have filed nationally and incurred the big costs, and then some patent office comes up with killer prior art, you may lose the lot. Some patent offices demand that you supply them with art cited by other patent offices, which means that you cannot confine the disaster to one country - and the most important of all, the USPTO, is the most insistent on the declaration of foreign art (deliberate failure to do so may constitute fraud on the Patent Office, and they may reopen Alcatraz just for you).

Secondly, if you filed nationally right away and the business concerned changed its mind about patenting (as sometimes happens), the amount of money lost would be much greater than the PCT fees. There are businesses where many of the products (and therefore the necessity for patent cover) last only a couple of years. Foreign filing nationally in such a business borders on lunacy.

Finally, there are few in the profession who haven't had the experience of a business that spent the previous two months swearing that it absolutely, positively, definitely didn't want to file in China, and then discovered, naturally when the deadline was past and the filing was irrevocably on its way, that the world would end if it didn't have coverage in China. As you automatically cover all 155 PCT countries, you can give yourself options on most important industrial countries, and the decision as to whether to proceed in a given country is delayed by up to 30/31 months from application or priority, by which time you will probably have a much better idea of what you want.

PCT buys time - for a relatively small fee, it **puts off** the evil day when you must incur the **really big expenses** of national filing. If you abandon some or all of the countries of an International Application at National Phase entry time, thereby saving on national fees, you could come out ahead. Novartis once calculated that, if it abandoned 1 in 7 of its applications, it became cheaper to file everything by PCT Chapter II. An investigation revealed that it was abandoning about 1 in 4, so from then on, Novartis filed everything

PCT Chapter II and saved substantially on patent costs, even back then when filing a demand for the expensive IPE was the only way to get Chapter II.

The International search can help in this evaluation. A good search (the EPO gives the best in the business, not so sure about some of the others) can give you a very good idea of your chances of success and you may then choose to drop countries (such as tough examination countries) and reduce your expenses.

Who needs IPE?

In a word (two actually), **nearly nobody**. It costs more money and generally brings no worthwhile advantages. Once it did; it was the only way to get the longer 30/31 months in the International Phase. This is now true for only a very few countries (the odd bedfellows of Luxembourg, Tanzania and Uganda – and most Luxembourg patents are granted via the EPO, where the 30/31 months applies). I expect IPE eventually to shrivel up and die.

PCT has come a long way since its beginning in 1978 when many confusing national variations and "sudden death" deadlines made it a minefield which many chose to avoid; it remains complex, but it is a very useful addition to a patent attorney's bag of tricks. And WIPO continues to make it more user-friendly.

European Patent Convention (EPC)

In brief:

- Centralised procedure for granting (and opposing) patents in up to 40 European countries (not actually a single pan-European patent but a bundle of national patents).
- Advantages – single examining authority accessed via single attorney, as opposed to multiple national attorneys; tough but fair examination; same scope in all countries.
- Disadvantages – "all eggs in one basket" (lose the European application and you lose all the countries); slower to grant than many countries (many European countries don't examine patents); national fees still payable at the end; national interpretation of patent, can be frighteningly expensive for what you get.

A European patent? Really?

No, actually. The EPC is an international Convention that provides for the granting of European patents, but in reality this European patent is not a single supranational patent covering the whole of Europe. Like the PCT, the EPC is actually a **centralised procedure**, in this case **for granting** a patent in a number of European countries (plus Cambodia) via a single search/examination/grant procedure. The so-called "European patent" is really **a bundle of national patents** that pursue their own individual paths in their own national offices. If you want to drop your European patent in Germany, you can do so and your European/British patent is unaffected.

The business is handled by the European Patent Office (EPO) with headquarters in Munich (Administration, Examination, Opposition, Appeals), but the main Receiving, Formalities and Searching sections are at Rijswijk (a suburb of the Hague) with other offices in Berlin (the former Reichspatentamt) and Vienna (the former International Patent Documentation Centre (INPADOC)). Applications can be filed in one of three official languages, English, French and German, and this becomes the "language of the proceedings" for all correspondence from the EPO (correspondence in any official language is accepted by the EPO). It is actually possible to file initially in any Contracting State language, but an official language version will eventually be required.

Countries possible

As of June 2013, a European application designates **38 countries** (39 on 1 October 2022, when Montenegro joins). The Contracting States are Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Monaco, Montenegro (from 1 October 2022), Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland (includes Liechtenstein), Turkey and the UK. Moreover, agreements have been concluded with so-called **"Extension states"** (currently Bosnia & Herzegovina). Morocco, Tunisia, Cambodia and Moldova have validation agreements with the EPO, making extension of European patents to these countries possible. Some Contracting States started off as Extension States. All Contracting States are deemed designated on application, but States can later be dropped. It will shortly be possible to validate European patents in Tunisia, even though it is not a Contracting State.

The new Unitary patent (see p.81) is a single designation (like Switzerland/Liechtenstein) covering however many countries that are covered by it (25 at the moment).

Procedure

An application is **filed** at the EPO just like a normal national application. In the case of an application originating in a Contracting State, there is usually a requirement that the European application be filed via the national patent office on the grounds of national security – there are exceptions to this, e,g, Switzerland. The application is passed to Rijswijk, where it is checked for formal compliance, **searched** and the application and search report published (usually, but not always, together). The application is then transferred to Munich for **examination** by an Examining Division, a team of three examiners. When granted, opposition can be lodged and it will be heard by an Opposition Division, a body of 3 Examiners, one of whom will be the primary Examiner for the grant.

When the European patent is **granted**, it must then be **validated in** the individual **Contracting States** in which patent cover is **desired**. At this point, it **becomes expensive**; agents' fees, official fees and translation fees must be paid - most countries demand translations into their own languages. This is where unwanted countries are dropped. In an attempt to **reduce translation costs**, the **London Agreement** was introduced. Parties to the London Agreement having an EPO official language as an official national language agree to waive completely the requirement for the European patent to be translated into their official languages. Those who haven't require only a translation of the claims and accept a translation of the description into a selected EPO official language. For example, the Netherlands has selected English. Unfortunately, **not all countries have joined** – the Spanish have dug in their heels particularly hard, so validation in Spain will require translations for the foreseeable future.

The Boards of Appeal

If a European opposition is concluded, or if an application is rejected, the aggrieved party can appeal, and this will be heard by a Board of Appeal.

The BoA is one of the odder features of the EPO system. Traditionally, patent offices have been national offices, meaning that, ultimately, they are answerable to their national courts, to whom there lie appeals from decisions by the patent office. The court can then cuff the patent office around the ear and tell it to behave, if it issues too weird a decision. Being an international body, there is no corresponding court for the **EPO** – the **"courts"**

are internal, **the Boards of Appeal**. There is an Enlarged Board of Appeal, but this is not really a higher "court" – its major function is to adjudicate on legal points referred to it by the President of the EPO, or which arise if there are two differing lines of decisions from the Boards of Appeal, to ensure uniform application of the law. It can only review BoA decisions on a narrow range of procedural grounds.

The major problem with this set-up is that there is no possibility of appeal from a decision of a BoA to revoke a patent – on the other hand, if the patent is not revoked, the other party can still take the case to one or more national courts. And the Boards of Appeal, accountable to nobody, can and do make some crazy decisions. (One has to wonder sometimes whether they do it deliberately, to make sure that we're all paying attention).

The inability to seek judicial review of a BoA decision is seen as a denial of justice in some quarters – and there have actually been a couple of referrals of previously inviolate BoA decisions to the German Constitutional Court, with the claim that there has been a denial of justice. Given the unfortunate previous history of German courts (think "Raving Roland" Freisler), the Germans are especially pernickety about such things, and we await the results. The awkward position of the Boards of Appeal in the EPO scheme of things and the fact that their decisions cannot be independently reviewed by a court were two of the bases of the Spanish objection to the Unitary system (see p. 82)

Will the Boards of Appeal be subject to the proposed Unified Patent Court, or will they be free to continue in their usual bizarre fashion? It seems that, in the case of a Unitary Patent, appeals will be handled by the UPC, rather than by a BoA, which surely must be a good thing.

Infringement

In general, infringement of a European patent is handled by **national courts** that can pass judgement only on European patents that are valid in their territory. This means that **different national** ways of **interpreting** patents could lead to completely **different conclusions** on what is supposed to be the same European patent – this has already come to pass (see under "Infringement" on p.100). If you think you may be infringing a European patent (or that somebody is infringing yours), you should (a) check in which countries the patent was validated and (b) check to see whether the renewal fees have been paid in the country/ies of interest. If you don't validate or renew your European patent in, say, Spain, you can't stop a competitor from using your invention there.

It is worth mentioning that Dutch courts in particular have sought to use provisions of the *Brussels Convention on jurisdiction and enforcement of judgements in civil and commercial matters* 1968 to attack European patents in other states. This has not been widely followed, and early decisions of the European Court of Justice went against it, but the recent case of *Solvay/Honeywell* has breathed new life into the approach, and in *Actavis v. Eli Lilly,* the UK courts have recently said that they are entitled to adjudicate on non-UK designations in respect of declarations of non-infringement. In the absence of centralised patent litigation in Europe, in some circumstances (not all) it offers fast and effective litigation.

EPO filing v. National filing

The EPO has been successful far beyond the wildest dreams of its creators. Why this has happened has never been completely clear. It may be partially that, with (occasional) progress toward European union, this is simply an idea whose time has come. This does

not explain the enthusiasm for the EPO of the Americans and Japanese, who seem quite happy to take the **"all eggs in one basket"** European route (they typically contribute about 27% and 16% respectively of annual EPO filings). Perhaps it is because the European route **offers flexibility**, like the PCT, and it **can be cheaper**; only at grant do applicants need to decide in which of the originally-designated countries the new European patent will be validated.

However, in many European countries, patents are guaranteed because of low examination standards or no examination at all. Is the **risk worthwhile?** The answer would **generally** appear to be **yes**; EPO examination is thorough and competent without being unreasonable, and if you have a genuine invention, the odds are that you will get some sort of European Patent - it may be narrower in scope than that with which you started, but it will have a reasonably high presumption of validity. Whatever the reason, the EPO marches on from success to success. A further *raison d'être* that will come into existence is the EU patent (see below).

Costs

Official costs of a European patent from application to grant (assuming two renewal fees) are €4550 (about $US6051) (€75 less, if filed electronically). If you use a private attorney to do it, it'll cost much more, because there'll be charges for all reporting and actions taken. As mentioned above, there remains the validation of the granted European patent in the finally desired states, with the inevitable agents', official and translation fees. However, if the European patent is validated in at least 5 countries, it is still cheaper than filing nationally. Thought should naturally be given to other considerations, such as the inventiveness of the invention (you would not want to subject a relatively trivial or unimportant invention to a rigorous examination, especially if all countries in Europe could simultaneously be lost thereby).

Many applicants file European applications via the PCT (the so-called "Euro-PCT route") because it allows them to do everything directly and therefore eliminate all the agents (and their fees) that would be needed in national foreign filing. If, however, only a few European countries are required, it might be worthwhile filing nationally in only these countries.

However, the decision on whether to file European or nationally must be taken in the light of the fact that, if a PCT application is filed, some EPC Contracting States (for example, Belgium, Cyprus, France, Greece, Ireland, Italy, Monaco and the Netherlands) can be covered only via a European application.

Remember too that **national renewal fees** are **payable** on validated European patents. In some countries, these are very expensive. See more on p.98.

This brings up the **really big problem with the European patent** – the **cost**. Once you've got your "European patent", you have to maintain it in the countries in which you've validated. Some of these (such as Austria) are ridiculously expensive, so your total costs of maintaining even a small portfolio for 20 years may be of the order of $US50,000 in renewal fees alone (compare that with a US patent, whose official costs for 20 years are $8860). One proposed way around this is/was/will be/could be…

The Unitary Patent (*née* (well, nearly) the Community Patent) and the Unified Patent Court (UPC)

In brief:
- Unitary patent for EU states, to be centrally granted and enforced.
- Advantages – cost saving, central infringement/validity by specialised court system
- Disadvantages – loss of flexibility, cost savings possibly not as great as expected

The idea of a **single supra-national patent** to cover the whole of the European Union (single market-single patent) would be **appealing if** it could be **done cheaply enough** (say, about the same cost as a US patent). It would also overcome the inherent contradiction between the EU's Treaty of Rome, which seeks to promote the free flow of goods and services across national borders, and national patent rights, which seek to do precisely the opposite, not to mention resolving the conflicting national laws and interpretations to which "European patents" are subject under the EPO system. As originally proposed, the EPO would handle examination and grant, and a special division of the European Court of Justice would handle infringement and validity.

A cost-effective EU Patent is possible, but only if the EU members can agree on matters of **language**, which of course they can't. Translation into all official EU languages is clearly prohibitive, but even a proposal of complete translation into the three EPO official languages, with translation of the claims only into each official language (still expensive), was also initially rejected, largely by Spain and Italy.

However, there were determined efforts to resuscitate the corpse. In the most recent development, a **group of 25 countries**, including most of the major players, has asked whether it **can proceed** with a **unitary system** for the group alone, and the stick-in-the-muds (Spain and Italy) can join later should they so desire. This was **passed by the EU Parliament**, and two EU regulations appeared. The Unitary Patent is an extension of the current EPO system (see p.78), with the unitary system countries being selected as a unitary patent at validation. To date, 17 countries - Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovenia and Sweden - have ratified. Still to ratify, Cyprus, Czech Republic, Greece, Hungary, Ireland, Romania, Slovakia.

As initially envisaged, the proposed Unified Patents Court (UPC) would have a Central Division be in Paris, with subsidiary courts in London (chemistry and pharma) and Munich (mechanical and engineering). The languages are English, French and German (the major reason for the Italian and Spanish intransigence). There are also local divisions in many countries.

However, having ratified, the UK withdrew its ratification, even though it was one of the essential ratifiers and a site for one part of the Central Division – the thought of funny foreign courts having a say over matters in the UK was too much for Boris Johnson's handsome Conservative majority to bear. Milan has been chosen to replace London, but with a somewhat reduced mandate In Germany, there were a number of constitutional challenges, which at one point seemed likely to derail the entire project. However, these were successfully overcome and Germany duly ratified. The rules of procedure were established and judges selected. The UPC commenced activities on 1 June 2023. See Appendix N for more.

Other Regional Patent Offices

There are several others. ARIPO (African Regional Intellectual Property Organization) and OAPI (Organisation Africaine de la Propriété Intellectuelle), not English and French names for the same thing, but two different organizations encompassing many, but not all, of the countries of Anglophone and Francophone Africa respectively, have been with us for some time. (South Africa is **not** covered by ARIPO). There is also a Eurasian Patent Office, covering the states of the former Soviet Union and using Russian as the official language. More recently still, the Gulf States have initiated a Gulf Cooperation Council (GCC) patent, handled by the Saudi Patent Office. A patent community consisting of the offices of China, Japan and South Korea is now under serious consideration.

Patent Prosecution Highways (PPH)

Although not really a way of filing in many places all at once, this is a **new trend** that allows the **results of the examination results of one patent office** to be **taken into account by another**. If there can never be a "world patent", there can at least be recognition of other people's examinations, thus reducing to some degree the duplication of work (and hopefully of costs) and speeding up the whole business.

The forerunners have been around for a long time. Australia's "modified examination" system allowed an Australian patent to be based on a granted patent in a number of other countries (originally UK and USA, now UK, USA and Europe). It included provisions for deferment of examination until a patent was granted in the other country.

Various bilateral agreements were the forerunners of the current trend. There was (and is) a "Korea-Japan Patent Examination Highway", under which an application granted in one country will have preferential treatment in the other. China could conceivably join this arrangement. The USPTO has ongoing PPH agreements with a number of countries, including Australia, Canada, Denmark, EPO, Finland, Germany, Japan, Korea, Singapore, and the UK. With the UK's proposed new rapid granting scheme and the USPTO looking favourably on these UK grants, this could be a relatively painless route to a US patent. There is now a pilot PCT-PPH involving the European, Japanese, Korean and US Offices. A favourable PCT Written Opinion or IPER will allow accelerated examination. And a new 2014 Global PPH covering 13 countries has been launched.

A recent development is PROSUR, a proposed regional agreement among a number of Latin American countries that will regularise procedures and share examination results.

The **fly in the ointment** with most of these schemes is that the **applicant must conform his or her application to what is seen to be universally allowable**, which means that s/he may be constrained to a scope of patent that is narrower than desired (and that, without the PPH, could have been broader in some countries). However, given the rising costs and backlogs of the major offices, such schemes are probably going to play an increasing role in the world of international patenting.

Publishing, prior to being damned…*

Early Publication (pre-examination) - These days, early (pre-examination) publication at **18 months from priority** is the norm. A few countries, such as Switzerland, publish only on grant. The USA used to be a publish-on-grant country, but it now also publishes applications at 18 months. Applications filed only in the USA (no foreign equivalents) can remain unpublished until grant, but the applicant must specifically request this of the USPTO. The "patents" which appear in publications such as Derwent Abstracts are usually early publications of applications. The first publication is usually indicated by the suffix "A", regardless of whether it's an early publication or a publication on grant. At early publication, the patent application will usually not yet have been examined, but a search report will usually have been prepared and will be available.

We all sue with a US submarine…

Or rather, we used to. The change in the US law on publication, plus the change to a term of 20 years from application, have led to the virtual demise of one of US practice's more notorious features, the "submarine patent". **Old US law** allowed a patent applicant to abandon and refile an application as often as s/he wanted and **keep** it **pending** (**and unpublished**), with the 17 years from grant still to come. If a competitor came up with the same idea and either filed its own application or started commercialising it, the submariner would proceed to grant, the submarine would abruptly surface and suddenly the competitor would be confronted with a granted patent with a date which preceded its application date or use, and it would have to pay royalties or lose all the investment incurred in its commercialisation.

In the bad old days before the change in US law, the undisputed Admiral of the US submarine fleet was Jerome H. Lemelson, one of the most prolific inventors in US history (over 600 patents in a wide variety of fields). Many private inventors would have Lemelson canonized, many companies which have suffered from Lemelson's tactics would hang him from the nearest lamp-post, were it not for the minor technicality of his already having passed on

In one extreme case, he kept a "submarine" submerged for 40 years. This was in the field of what he called "machine vision", filed initially in the 1950s, describing the scanning of visual data with a camera and storing it on a computer. The submarine, gradually extended and modified as time went on, surfaced just as bar-code scanning was taking off. After multiple lawsuits, the companies involved took licences. However, in a major court case before the CAFC in 2004, Lemelson's estate lost all of the claims under the doctrine of laches (avoidable delay), the court citing "unreasonable delays…in prosecution"

"Submarining" is **still possible**, **but** the **scope** for its use has been much **reduced** – it is possible to request publication on grant for applications filed only in the USA. Moreover, the USPTO assumes that any application has also been filed outside the USA, so this must be specifically requested – failure to do so guarantees automatic early publication. Finally, repeated abandoning and refiling (still allowed under US law) now merely eats into the 20 years-from-application US term. However, submarining can have its uses – see p.106.

Legal consequences of publication

** Borrowed from the Duke of Wellington, a man never short of a pithy retort. When someone threatened to expose anecdotes between himself and his mistress, his reply was, "Publish, and be damned!"*

As previously mentioned, a patent is a piece of property. It only becomes property when a patent is actually granted. Thus, **at early publication** stage, **a patent applicant has no rights**. However, on publication, the infringer's excuse of ignorance disappears, and should the infringer persist until grant, the patent holder can sue for infringement committed back to the date of publication. To make sure, the **infringer's attention** should be **drawn to the application** in a polite "Dear Sir, we draw your attention to Patent Application No. ABCXYZ..."type of letter. There should be absolutely **no threats of action**. Let's face it, at this stage you have no idea what sort claims you'll finally get, and by the time the patent office has finished with you, the action that the "infringer" was doing and that lay within the claims prior to examination may no longer do so.

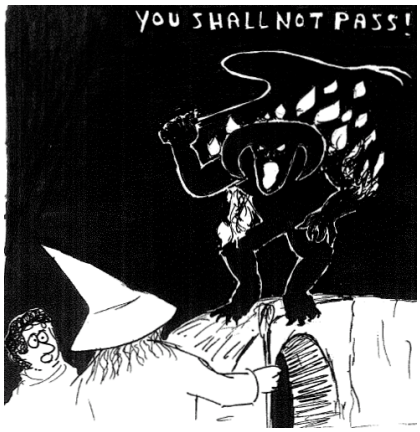
Some companies send out early warning letters to those they see as potential infringers, notifying them of publication. The idea here is to prevent a competitor trying to plead ignorance for part of the pre-grant period and thereby reducing the possible period for damages. This is fine if you're assured of broad patent claims, but if you're not, it merely invites unwelcome scrutiny and is not advisable.

The protection-to-be (perhaps) given by publication is known as "provisional protection". In the case of a European application, some countries will accord provisional protection only if a translation of the claims in the official language of that country has been filed.

Withdrawal of application to avoid publication

This is **possible**, **but** it must be done **in good time before publication**, and patent offices have different ideas as to what constitutes "good time". Naturally none of them gets ready to publish the night before, so you really have to ask before the so-called technical preparations for publication are complete. The PCT can stop a publication if you notify the International Bureau at the latest 15 days before, but the EPO needs 5 weeks' notice.

Damnation; Examination/Prosecution…

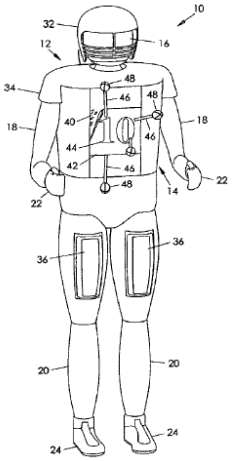


Gandalf, where was this in the script?

In many countries, the evil day of examination finally arrives. Procedures vary enormously. In many countries, examination must be requested, in others it automatically follows on application. All US regular patent applications are examined – the act of applying starts the ball rolling. In other countries, examination must be specifically requested (and a fee paid of course) or the application lapses - in the EPO, examination must be requested by 6 months from publication of the search report, in Germany it is 7 years from application - and many applicants generally wait the whole 7 years (by then they will know whether or not they want it).

<u>Examination standards…</u>

…**vary enormously**. At one end, you have countries that do not examine at all (Italy, Belgium), progressing to mild examination (New Zealand) to moderate (Australia, UK, Japan), to stiff but fair (Germany, EPO) to very stiff, frequently unfair and often totally unreasonable (USPTO). You really wonder sometimes whether the USPTO is a disciple of General Pétain at Verdun ("Ils ne passeront pas"). All patent attorneys have had the experience of submitting pages of closely-reasoned argument to the US office, only to be met with a response to the effect, "Applicant's arguments have been considered but are not deemed persuasive".



An aggression-relieving stuffed doll includes a doll body having a torso, arms, and legs, the doll body being formed of a soft material and filled with soft, stuffing material. A rigid plate is situated in the torso of the doll body and is substantially impenetrable. The invention includes a plurality of pins, each pin having a blunt end simulative of a sports ball and a sharp end capable of penetrating the doll body but not the inner torso plate. Therefore, a user may stick pins into the doll to relieve aggression caused by the simulated sports player although the pin is prevented by the inner plate from penetrating through the back of the doll and into the user's hand.

Useful to have when dealing with the USPTO – US Patent 6,663,462

<u>Declaration of search results from other patent offices</u>

In addition to their own prior art searches, an increasing number of **patent offices** are **demanding** that you supply them with the **search results of other patent offices**. It has long been common practice in the USA, where the USPTO demands "complete candour" from those who deal with it. This includes the voluntary declaration to the USPTO of any prior art known to you - and if you come across any new art, you have a duty to declare it within three months. Late filing attracts a fee. Worst of all, if you have allowance in the USA and you declare some art which you should have declared some time before, the Examiner may refuse to consider it, in which case your only option is to refile the case (filing + attorneys' fees) and go through the whole business again. You can, of course, neglect to do this, but in this case, you should forget ever contemplating litigating on such a patent, because if the USPTO ever found out, you'd be in BIG trouble.

The potential bigness of this trouble has recently been emphasized by a number of US cases on inequitable conduct. In one case, the research director of a US company made a declaration to the USPTO that said exactly the opposite to arguments lodged by the company's European attorneys in the European prosecution. The US Federal Court revoked the US patent. While this doesn't necessarily say that you have to supply to the USPTO what you argued elsewhere (I hope!), it certainly means that vigilance and consistency is required.

This **also applies to relevant art that you found, but that the patent office didn't.** It might seem smart to shut up and say nothing and feel suitably smug when a patent is granted. However, what it means is that you have spent a lot of money on something that may be completely worthless. You can never enforce the patent, because the attorneys for the other party will most certainly find it. Better to declare it to the patent office and go down fighting now, rather than later.

Patent Office Objections

Patent office objections fall into **four basic categories**:

(i) **formal** *("Your page margins are wrong, your typeface is too small, we don't like your title, you are not allowed that sort of claim under our laws, etc., etc., etc.")*;

(ii) **lack of novelty** *("Your invention has been completely anticipated by this prior reference, so you need waste no more of our time")*;

(iii) **obviousness**, or, lack of inventive step *("We cannot find anything which is the same as yours, but if we combine this reference and this reference, it would be obvious to a person skilled in the art to do what you have done, so you need waste no more of our time")*; and

(iv) **insufficiency or lack of clarity** objections *("You have no justification for a claim **that** broad," or, "It's not clear what you're claiming and you're imposing an undue burden on the poor skilled person trying to find out what exactly you want to cover")*.

Your attorney's response will be to argue and/or amend the application to remove problems or avoid prior art. In many countries, demonstrations of inventiveness by means of extra experimentation are accepted. These occur most frequently in the USA, where there exists a highly formalised system of doing what's called a "showing" - the evidence is filed in the form of a signed formal declaration by an appropriate person.

Third party intervention

Patent examination is strictly between applicant and examiner. **At best**, third parties can **supply** the office with **prior art** that they believe relevant and/or that the office might have missed. The turn of third parties comes at opposition (see p.92).

US continuing procedure – refiling, RCEs and C-I-Ps

US applications can have more lives than an entire cats' home. If your application runs into terminal problems with the USPTO, there are ways of continuing with it. These are:

Continuation – you **refile** exactly **the same thing** (while the original application is still pending) – it receives a new number and off you go again. Priority is maintained.

RCE (Request for Continued Examination) – this is used when an application receives a **final rejection**. The application remains with the same examiner and retains the same application number, but the final rejection is removed. It is **essentially** the payment of an **extra fee to have another full examination**.
CIP (Continuation-in-part) – this is the same as a continuation, except you **add new matter** (for example, to overcome some deficiency or prior art). The new matter takes as its priority date the date of filing of the CIP.

Under the **old US law**, in the case of a **CIP**, if **best mode** has changed since the original application, it had to be **updated**. **Under the *AIA***, this is **no longer so**, but it is probably wise to do it.

There are provisions for appeals to Patent Office Boards, and ultimately to Courts. However, with the US now having a 20-year term from **first** application like most other places, indulging in long feuds with the US authorities only wastes your own patent term.

US "interference" proceedings

This has now passed into history along with first-to-invent (stop cheering). The *AIA* has replaced it with a new "derivation proceedings", which allows the USPTO to ensure that the inventor of a first-filed application did not derive the invention from the inventor of a later-filed application. However, as it may still apply to some older applications, it is being left here for the time being. And it may yet return in the proposed US Inventor Act.

It is at the examination stage that the US first-to-invent philosophy (see p.70) can have its greatest impact. Should the US Patent Office find that **two or more applications** with **overlapping subject matter** are proceeding through this stage, it declares what is called an **"interference".** This sets in train a process of bewildering complexity, the **object** of which is **to decide which inventor has the right to which invention** or part of invention; the normal examination procedure stops until this is decided. It is here that those signed laboratory notebooks and other evidence to show conception and due diligence in reducing to practice come into play.

Things are bad enough when there are two parties to the interference; when there are three or more (as can happen), the **complexities (and expense)** become **staggering** - I know of several US attorneys who put their children through college on the proceeds of particularly complex interferences. It can take a very long time - most of the 30 years it took to get US 4,376,851 (p.20) through involved a complex multi-party interference. The end of interference would also mean the end of a very lucrative business for the US law firms that specialize in it – the typical cost of resolving an interference is reported to be more than $US650,000, the preliminary motions phase alone costing over $US400,000. This is the unspoken reason why some in US private practice wish to retain first-to-invent. However, more than half of all interferences are resolved in favour of the party that was first to file, so one has to wonder why bother.

Thankfully, this arcane procedure has shrunk considerably in importance. In 2009, 55 interferences were declared, i.e., 0.01% of all applications

Acceptance/allowance

The struggle with Examiners can go on for years. However, truth and justice finally prevail and you receive the official correspondence to the effect that the Patent Office intends to grant a patent on your application (or what's left of it) – and usually a demand for yet another fee.

Divisional Applications

If there is **more than one invention** in a patent application, the applicant **can "divide" out** the **other invention** and the result is a divisional application, which proceeds to an independent patent. Division may be voluntary, or it may come at the request of a patent office, which considers that there is more than one invention in the application. It is a frequent occurrence in the **USA**, where the US classification system considers, for example, products and the processes for making them to be two different inventions. (There is also the small matter of more applications = more revenue, and more points for the Examiner for his or her annual review…). The result is a so-called **"restriction requirement"** that requires an applicant to select one invention for prosecution. The other inventions can only be pursued as divisional applications. Filing time for divisionals varies from country to country, but is always before grant of a patent.

In addition, the **US** (who else?) has a further oddity, called **"election of species"**. Having settled on a particular invention, the USPTO then considers whether you have different versions of the invention. This frequently occurs in chemical cases, where you will be required to elect a particular compound. This will go forward to examination, and if allowed, the Examiner will revisit the other species and generally allow them as well.

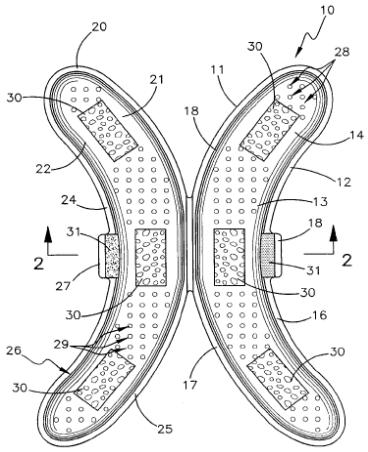
Divisionals have another use; if you have come to the end of examination with a particular patent office and have not convinced the office to allow the application, you **can file** exactly **the same thing again and call it a divisional**. With luck, you'll be allocated a more agreeable Examiner. A common variant of this tactic is to narrow your claims to make them allowable and get a granted patent, but to file the original claims as a divisional before that grant. You can do this indefinitely (well, for 20 years). The existence of a pending patent can act as a deterrent to some competitors. It's often a big bluff, but it can work sometimes. This is a favourite tactic of the pharmaceutical industry – it looks good for potential licensees and deters competitors, who will never be sure what (if anything) will be granted. Recent rule changes in the EPO have sought to limit the possibility of the eternal divisional, but they're much too recent to know whether they will have an effect.

These EPO changes have led some authors to postulate the possibility in some circumstances that a divisional could lack the right to priority and be anticipated by its published parent. The general consensus is that this falls under the Scots law verdict of "not proven". However, it does mean that care should be taken in the filing of EP divisionals.

Grant and afterwards…

Grant and effect of grant

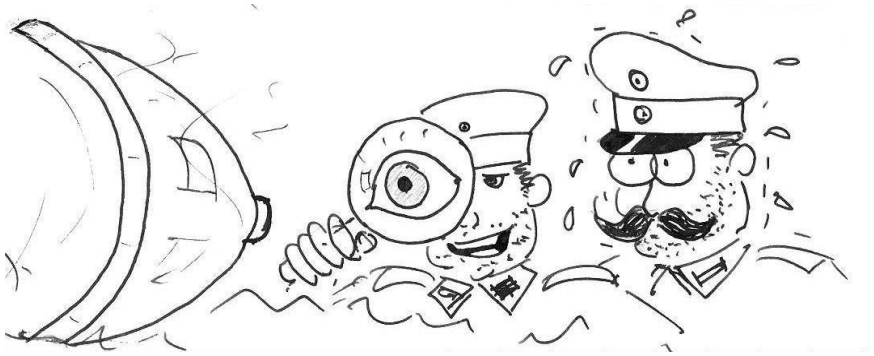
At last you have your patent! It may not look much - some examples are appended in Appendix I - but it is a piece of property on which others intrude at their peril. You **can** now **take action against infringers** for infringement of your property back to publication date or the date on which you notified them of its existence.



A banana protective device for storing and transporting a banana carefully. The banana protective device includes a container having a first cover member and a second cover member being hingedly attached to the first cover member and being adapted to store a banana therein; and also includes pad members being securely disposed upon the first and second cover members for protecting and cushioning the banana; and further includes fastening members being attached to the first and second cover members for fastenably closing the first and second cover members together.

Demonstrating that not all US patents are totally bananas, this one actually covers a product that is made and sold – the Bananaguard of US Patent 6,612,440 (see http://www.bananaguard.com) (mine is fluorescent lime green)

Like other pieces of property, it **can be bought and sold**, and it can be **licensed** to others. For my favourite licensing story, I am indebted to "The Arms of Krupp" by the late William Manchester. In 1896, Friedrich Krupp GmbH, by appointment to SM Kaiser Wilhelm II, purveyors of unpleasant extinction, licensed a shell fuse to Vickers Ltd., by appointment to HM Queen Victoria, purveyors of ditto. The licence was renewed in 1904. Ten years later, SM and HM commenced a vigorous four-year exchange of technology of a type that GATT would never have envisaged. German soldiers noted that unexploded British shells bore the legend "KPz 96/04" (Krupp Patentzünder (patented fuse)). At the end of the war, Krupp representatives informed Vickers representatives that, as the British had, by their calculations, fired 4,160,000 shells @ 1s.3d royalty per fuse = £260,000, please. Vickers said that reports of its death-dealing had been greatly exaggerated - only 640,000 shells, so only £40,000, and as losers can't be choosers, that is what Krupp got. At least it shows that there is some sort of honour among butchers.



Heute macht das zweitausendfünfhundertsiebenundfünfzig, Herr Oberleutnant! Aber natürlich zählt man diesen Blindgänger nicht mit!
(That makes 2,557 today, Sir, but naturally this dud doesn't count!)

Marking

Should you mark articles as "patented", plus a number? In general, **not if you can avoid it.** It can be useful, even desirable, but it can also be problematic. Are you going to use the packaging in a country where the thing is NOT patented? What if, following court action, the patent is restricted such that what's in the package is no longer covered, or even revoked completely? You suddenly have a warehouse full of false statements. This was especially problematic in the USA, where one CAFC decision held that the penalty for deliberate false marking was $US500 per article. In one case the theoretical penalty was $US 108 **trillion**, the Federal Government's share of which would have been sufficient to pay off 42% of the US national debt. Fortunately for the marker, no bad intent was shown.

The ***AIA*** has provided a way out of this – **virtual patent marking**. A patentee can put his or her patent numbers on a publicly-available website, and mark the articles with "patented" and a reference to the website. The patentee can then update the patent information on this website, and there is no longer for expensive changing of moulds or printing plates.

Unpleasant things that can happen after grant

Even with a grant in your pocket, you cannot rest on your laurels, no matter how well deserved. You may have fooled the Examiner with all your fancy arguments, but can you fool your competitors?

Opposition

Many countries provide an opposition procedure that allows objections to the grant of a patent by other parties to be **heard by a Patent Office tribunal**. Opposition may be pre-grant (e.g. Australia) or post-grant (e.g. EPO) and must be lodged within particular time limits. Some countries, e.g., UK, have replaced opposition proceedings by revocation/invalidation proceedings before the Patent Office, the only difference between these and opposition proceedings being that there is no time limit for filing.

Previously in the USA, a granted patent could only be invalidated by court action, but **the *AIA* includes a sort-of opposition procedure** – two actually, "*inter partes* review" (IPR) and "post-grant review" (PGR) in USPTO-speak. The main differences are the grounds (PGR grounds are broader) and that IPR is only available to third parties not accused of infringement. The official fee is at least $27,200 (as opposed to the EPO's €705), with attorneys' fees on top of that. This is because this is more a judicial proceeding, with a judge and discovery and estoppels as a result of any decision. It all sounds a bit like overkill, but I'm sure the reality will be much, much worse… It applies only to US applications filed after 16 March 2013.

It has been claimed that IPR is costing the US a fortune

http://patentlyo.com/patent/2015/06/america-invents-trillion.html

and that Congress should curtail its use. A recent Supreme Court challenge to the whole procedure on the grounds of constitutionality was rejected, but the grounds of the decision were narrow, and the possibility of its abolition remains.

Grounds of opposition are usually **relatively few**, but they always include the grounds of most interest to competitors (lack of novelty, lack of inventive step). An opposition is

considerably cheaper than a court case, and much use is made of opposition proceedings. It is especially important in the European Patent Office, because, if the opposition period passes, you are confronted with a bundle of national patents, and action can then be taken only in the individual national courts. Should you not like the Tribunal's decision, there is always an appeal to the courts - except in the case of the EPO where an appeal from the decision of an Opposition Division is to the EPO's Board of Appeals. Its decision is final with respect to opposition and an opponent who wishes to take the matter further must initiate a revocation action in the national courts of EPO designated countries that are of interest.

Revocation

A patent can be revoked after grant. Some Patent Offices (e.g., the UK) describe what essentially are their opposition proceedings (held before a Patent Office Tribunal) as a "revocation", but the word is more generally used to describe court action taken to revoke a patent. The **range of grounds** on which such a revocation can be sought is **generally wider than** is possible at an **opposition**. However, the process is **much more expensive**, especially in British-type systems, where you may need to hire a QC (Queen's Counsel, the top rank of barristers, the specialised lawyers who present cases in court). QCs never come alone – they generally have junior Counsel to assist, butter their breakfast toast, that sort of thing – and of course there'll need to be a solicitor to instruct both.

If you're interested in knocking out a European patent, do it at opposition. Once past the opposition stage, you will have to revoke it in up to 40 national courts!

The *AIA*'s new "post-grant review" (see previous page) will be able to revoke patents, but will be subject to appeal – with the problem of estoppel.

Re-examination and Reissue

Many countries allow amendment after grant, for the correction of errors or obvious mistakes. The most notable case is the **USA**, which has two formal Patent Office procedures, re-examination and reissue. To deal with **reissue** first, this is used to **correct errors** made without deceptive intent. It is possible to narrow the claims of a patent at any time, but broadening can only be undertaken within two years of grant. A reissue patent is printed, essentially the original US printing, showing in heavy type where changes have been made, and carrying a new number of the form "Re 12345". However, the term of the reissue patent remains unchanged from the original.

The USPTO's requirement of complete candour extends to relevant **prior art discovered after grant**. Should you find such art, and should the patent be in any way valuable and/or a potential source of litigation, you should ask for a **re-examination**. Previously in the USA, only a patentee could request re-examination. However, 1999 changes in the law now permit *inter partes* re-examination, that is, third parties can supply (anonymously) relevant prior art to the USPTO and request re-examination. This amounts to a sort of opposition procedure, but it is only a written procedure, and the third party has no right to appear at any USPTO hearing.

Other countries, e.g., Australia, have the possibility of re-examination, but it appears to be rarely (if ever) used.

In US practice, re-examination or reissue can involve what is known in US practice as **"intervening rights"**, that is, rights in an invention obtained by a third-party in spite of

there being a patent. Under US law, the language of the claims is paramount; in the words of the House of Lords in *EMI v. Lissen* (old UK law was the same), “the forbidden field is to be found in the claims and nowhere else – what is not claimed is disclaimed”. What if a third party does something not covered by a claim, and a reissue changes that claim such that it now is covered and the third party is now technically an infringer? The third party can continue to do that, but cannot extend his/her activities to other aspects of the new claim.

File inspection; “file wrapper estoppel”

When I started in the profession back in the Stone Age, you could never get your hands on the patent office reports on other people’s patents; they were considered privileged information. The main exception was the USA where the “file wrapper”, the entire prosecution history of an application, Examiner’s reports, applicant’s responses, the works, could be purchased as soon as a patent was granted – if no patent was granted, no file wrapper was available.

In these more open days, **many patent offices** now **make public** absolutely **everything** immediately. The EPO has led the way – it is possible to inspect the file of someone else’s European application from the moment it’s published and check on progress. The EPO has now made on-line file inspection possible with its *Epoline* service. If you become aware of patent applications that could be of concern, you can monitor, or have your patent attorney monitor, them and obtain copies of relevant documents. The USPTO has started the similar PAIR system. However, China will release the whole file only on grant, so it is not possible to see the current state of a Chinese application.

File histories are also useful, because **admissions by applicants can** often **be used against them**. This is often known by its US name of **“file wrapper estoppel”** (more correctly “prosecution history estoppel”). What it means is that, if the applicant in prosecution has said that black is white, the applicant cannot then argue in a later infringement case involving the granted patent that white is white. In legal language, the applicant is “estopped” from arguing in this manner.

While essentially a US practice (it was proposed to incorporate the concept in the revised Protocol to the EPC’s Article 69, but it was eventually omitted), it can still be a useful argument. I used this against a competitor, which accused my then employer of infringement of its patent. I had watched the European prosecution history of the patent, and I was able to use the patentee’s own admissions against it. That was the last I heard from it on the matter.

If you’re planning anything contentious with respect to the patent of a third party, a file inspection is essential.

Some odd (and not so odd) kinds of patents…

Petty Patents/Utility Models

With rising patent office and agents' fees making it ever harder for the individual or small company to patent, the availability of **cheap, quick** protection is of great interest. Such systems are not new; many countries have had "petty patent" or "utility model" systems for a long time. The best known are the German *Gebrauchsmuster* and Japanese utility model systems. Ireland, South Africa and Australia have introduced such systems (in Australia, the oddly-named and now disappeared "innovation patent"). In most countries, examination is of a lower standard and grant or rejection is quick. Term is typically 5-10 years from grant. The USA does not have such a system.

As well as being useful for minor inventions, such patent applications may **also** be **useful in infringement cases**, in which you detect an infringer and your patent application is not yet granted. Filing a divisional application for a petty patent can quickly give you property on which you can initiate action.

Patents of importation/revalidation/confirmation

A **feature of a few patent laws** is the ability to obtain a patent based on a patent obtained elsewhere. This was formerly much more common than at present, when novelty was mainly local novelty. For example, a feature of old British law was the award of a patent to an applicant who had braved the rigours, dangers and dubious plumbing of foreign parts and brought home something to enrich the realm, even if the splendid chap in question had actually stolen it from someone else. Some countries, e.g., Iran, still have such patents. They are still in the New Zealand Patents Act, but they are **living on borrowed time**.

The **revalidation or confirmation** of one's own patent elsewhere was long a feature mainly of Latin American countries, but with the arrival of updated patent laws and absolute novelty (which made the patent on which you were seeking revalidation prior art against your application), they are **largely extinct**, but they still live on in a few places. The Gulf Cooperation Council allows the repatenting of an invention already patented elsewhere, but the GCC patent expires with the original patent. Georgia has such provisions in its patents legislation.

Patent of Addition

In a small number of countries (generally **British Commonwealth**, e.g., Australia, New Zealand, India, Pakistan), **an improvement in or modification of an invention** can be covered by a patent of addition. An application for a patent of addition can be filed at any time during the life of the main application and patent, but it will **expire on the same day as the main patent,** regardless of when it was filed. Even if the main patent is abandoned and the patent of addition pursues an independent existence, it will still expire on the date on which the main patent would have expired, had it continued. On the plus side, **renewal fees** are **not payable** on patents of addition.

Registration

Patent protection is possible in some British dependent territories only by the registration of a granted British or European/British patent there. The only one of any major significance is **Hong Kong**. The arrangement has survived the return of Hong Kong to Chinese rule, except that a Hong Kong patent application can now also be based on a

granted Chinese patent. Hong Kong is currently considering its own patent system, but it appears that, even if one were to be introduced, the registration system would continue.

Selection Patents

This is a topic that should always be borne in mind when you read other people's patents or when you're contemplating your own.

Supposing there is a patent that claims A-Z. Along comes a patent with a later priority date that claims D-H. The second patent is totally dominated and invalidated by the first, did you say? In most cases you would be quite right. But not if a selection is involved.

A patent may be obtained even if the claims of that patent fall within those of an earlier valid patent, if the later patent fulfils **two conditions**:

(a) the subject-matter is not specifically described in the earlier patent; and

(b) there arises from this subject-matter some unexpected or surprising advantage.

The earlier patent dominates the general area and the later patent cannot be worked without a licence from the proprietor of the earlier patent. **But** the earlier proprietor cannot use the invention of the later patent, because s/he didn't invent it. If s/he wanted to work that later invention, s/he'd need a licence from the later proprietor.

And sometimes this comes to pass. A previous employer of mine made a large profit out of a herbicide that fell within the claims of a prior patent. The prior patent had disclosed a general class of herbicides, had claimed them generically (using a broad Markush general formula) and had exemplified and claimed a number of specific compounds. However, our researchers found that a group of herbicides, which fell within the broad claims of the prior patent but which were not specifically disclosed in it, were wheat-selective, that is, they killed everything except wheat. This was a discovery of major commercial significance, and a patent application claiming the wheat-selective compounds was filed.

It's almost as if this happened to poor Zeke:

*Now listen, buster, your claim says **gold**, nothing else!"*

The result was that the two companies negotiated a cross-licensing arrangement in which they gave each other the rights to work under each other's patents. So, if you see other people's patents that are apparently barring an avenue of research, they might not be. If you can find a valid selection, there may still be valuable patent cover (and market access) to be had.

In the reverse situation, **how do you stop people getting selection patents based on your invention?** Such patents can be a nuisance. For example, you come up with a new fragrance and your patent covers generally all uses, including body care products. A customer then gets a patent on that fragrance used in moisturising creams, claiming particular advantages for the combination. Suddenly, all your other moisturising cream-manufacturing customers are blocked from using that fragrance in their products and you now have one customer for it. What can you do? The simple answer is, **get there first** – if you cover every useful practical embodiment, the patentee can then patent until it's blue in the face, and it will get nowhere. However, this demands a degree of inventiveness (not to mention clairvoyance and a bottomless pit of money), and the chances are that someone will always think of an angle that didn't occur to you. Your best strategy is then to **seek to cover as much scope as possible**, both generically and specifically, at application stage. This will force potential selectioneers into selections that are more narrowly defined and therefore of less interest to others.

Selections and **the myth of the "application patent"**

The abovementioned practice has given rise to a mythological beast, the "application patent". This is supposedly a patent obtained by a customer on the use of a patented ingredient in a particular composition, which blocks the ingredient manufacturer from selling it to any other manufacturer of similar compositions. To use the previous example, the customer gets a patent on a novel fragrance in moisturising cream. Some materials providers even warn about this practice in their technical literature. Here's an actual example:

> Because it has become common for purchasers of our products to file patents for specific end uses of our products, XXXX advises its customers to research their particular end use for possible intellectual property issues with respect to third party patents.

How real is this danger? With regard to the application patent as generally conceived:

THERE IS NO SUCH THING

simply adding an ingredient to a composition to which it is suited is **NOT** patentable. The fact that it is known to use fragrances in moisturising creams kills stone-dead any patent application – unless it can be claimed as a selection, adhering to the rules mentioned above.

This is not to say that someone can't invent completely spurious selection rules (some companies are rather good at this), and the patent office might be completely fooled into granting it, in which case you might have problems.

How to defend against this? There is no complete defence, as anyone suitably determined can concoct a story for a patent, and the patent office is obliged to accept it at face value. Same rules as above, either or both of get there first and cover all possible practical uses.

Working, renewal, extension, restoration

Working

A **patent should be worked in order to remain in force**. **So the theory goes** anyway. The Paris Convention has provisions covering this (Article 5) and these have been implemented into many of the domestic legislations of Convention member states. **If a patent isn't worked** to a sufficient extent, a third party can demand a **compulsory licence**. If, after a further time, **working** is **still insufficient**, the third party can apply for **revocation** (cancellation) of the patent. In practice, this rarely happens. However, many Third World countries have much stiffer working requirements. For example, India requires that an annual working statement be lodged, either informing of the extent of working, or if there has been no working, why not. For a long time, the ease with which some Latin American countries granted compulsory licences and revocations was a major deterrent to filing there. Things are changing; most of them are now Paris Convention and WTO members and the former harsh requirements are moderating.

Renewal

In most countries in the world, a patent may be kept in force only by paying **renewal fees**. These are **generally payable annually** (hence the name "annuities" frequently given), but this is not universal - in New Zealand, they are payable at years 4, 7, 10, and 13 from the filing date (shortly to change to annual fees), and in the USA, they are due 3.5, 7.5 and 11.5 years after grant.

These payments increase as the patent gets older, the idea being to discourage the continuation of valueless patents (i.e. most of them). The current (June 2013) German official fees are a typical example:

year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
fee (€)	0	0	70	70	90	130	180	240	290	350	470	620	760	910

15	16	17	18	19	20
1060	1230	1420	1590	1760	1940

Note that the cost of years 1-10 is €1420 ($US1564) and that of 11-20 is €11,760 ($US12960)!.By way of comparison, the three **US fees** are respectively $1600, $3600 and $7400, a **total of $12600,** making the US patent (for a market of 300 million remember) somewhat of a **bargain**. In some countries, e.g., Japan, the greater the number of claims, the higher the renewal fees. And, as mentioned, if you validate a European patent, the renewal fees payable are national ones Now those German ones are among the highest in Europe (nearly three times the UK equivalent sum), but it still adds up. A **small European portfolio** of say, France, Germany, Netherlands, Spain, Switzerland and the UK is going to cost you over **$US50,000** for 20 years.

If you **miss** your renewal **payment**, most countries allow a **grace period of six months**, within which the renewal fee can still be paid, **with a surcharge**. If you miss by **more than 6 months**, you will need **restoration** proceedings, which are **a lot more difficult** – unlike the grace period, the patent office will want proof to its satisfaction that there was an intention to pay and that the missing of the payment was an inadvertent lapse in an otherwise well-functioning system. A change of heart about allowing to lapse is not acceptable.

Extension of term

Most patents don't make it to **20 years**. But is it **possible to extend** this term for very valuable patents? **Generally, no**. Once, old British-type law countries (such as Australia and New Zealand) used to offer extension on the grounds of war loss or inadequate remuneration, but no longer. Obtaining such extensions required a High Court hearing with mountains of evidence and entire mountain ranges of money.

However, there was a general realisation that, in the case of **certain products**, a **normal** patent **term** is **not sufficient**. The most important case is that of **pharmaceuticals**, which in most countries have to go through regulatory processes so long that most of a patent's term has gone when the product finally reaches the market (roughly, a patented pharmaceutical will finally arrive on the market 12 years after foreign filing). This does not allow the patent owner any sort of reasonable return on his investment (and therefore acts as a disincentive to further investment).

As a result, all of the major countries (Europe, Japan, USA) are now allowing **extensions** specifically **for pharmaceuticals** (typically **5 years**). In some countries, the extensions are in the form of **Supplementary Protection Certificates** (**SPCs**), giving the extended protection. Some countries have SPCs which protect the entire scope of the granted claim, but others give protection only to the commercial compound. In the USA, the duration of the extension is the time between grant date and FDA marketing approval, provided that the sum of this period and the patent term remaining at approval date is at least 14 years.

The US Hatch-Waxman provisions (see p.103) allow extensions also for animal drugs, medical devices and certain food and colour additives.

Restoration of Patents/Applications

If a patent or patent application is allowed to lapse because of an **inadvertent failure** on the part of the applicant/patentee or his/her agent to take some step by a required time limit, there are **procedures for restoration** of the rights. However, the **requirements are strict**. In all cases, the applicant/patentee will have to show that the failure was inadvertent (no change of heart after the thing was deliberately allowed to lapse). In addition, it will have to be shown that there was in place an efficient mechanism for monitoring the deadline that was missed, and that failure took place in spite of "all due care" having been taken. In one case, a European patent was denied restitution when the attorney became seriously ill and missed the deadline. It was held that, as a one-person private practice, the agent should have made allowances for the fact that illness and holidays sometimes occurred and that he therefore had not taken the necessary "all due care".

But what if someone uses the invention between lapse and restoration?

This is another case of what US practice calls "intervening rights" (see p.93 above). If a **third party** has used the invention or has made serious preparations to use it (such as considerable outlay in equipment and materials), s/he will be **permitted to continue**, **but only** insofar as **what s/he has already done** or is preparing to do. It is not carte blanche to use the entire subject matter of the restored patent.

Here come de Judge…infringement

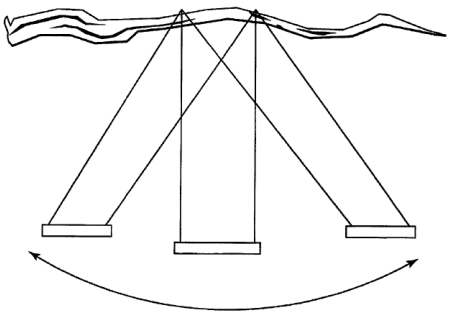
As we have seen, a patent defines an area of technology within which the patent proprietor has the right to prevent others from working. **If you do something that falls within a valid claim of a granted patent, you infringe** and can be stopped (naturally **only** if you do it **in a country in which the patent is valid** – if the patent is granted only in the USA, you can do it anywhere else). The fact that you didn't know the patent even existed is irrelevant.

Note the **various aspects** involved here:

"third party does something" - Infringement **only** occurs **when a competitor works within the granted claims** of your patent, or is making serious preparations for doing so. Note that the fact that a competitor has a **later patent** that falls within the scope of yours is **not infringement.** You can be quite happy for the competition to file as many such patents as their hearts desire, just so long as they don't try to work them commercially. Moreover, in general, someone who only buys an infringing product or the result of an infringing process in the course of trade is not an infringer. In any case, sueing potential customers is rarely a good idea.

"granted patent" – Doing **something** that lies **within** the claim of a **published application** is **not infringement**. It may become infringement, should the claim be granted in that form, or in a form that is broad enough to encompass what you're doing. Should you come across such an application, watch it, or have your patent attorney watch it for you, and consider whether you still want to proceed.

"valid claim" – The **granted claim** within which you may want to work **may not be valid.** Patent Offices are not omniscient, and they can miss important prior art that has a direct bearing on the subject matter of the claim. If the claim isn't valid, you do not infringe, because there's nothing there to infringe. Naturally, you should not expect the patent proprietor to see it this way.



A method of swing on a swing is disclosed, in which a user positioned on a standard swing suspended by two chains from a substantially horizontal tree branch induces side to side motion by pulling alternately on one chain and then the other.

So, watch it, all you young, swinging infringers – US Patent 6,368,227

(a) Does the other person have to copy exactly to infringe?

The short answer is, **no**. However, **how close** to granted patent claims you can work **depends** very much **on** the relevant **national law**. Infringement is considered under national law even for European patents (the EPC has no provisions relating to infringement).

One of the most basic principles of patent law is that **infringement** is committed **if** the **essentials** of an invention are **copied**. In other words, a person cannot take a patented invention, make some minor changes that have no effect on the working of the invention and get away with it. Thus, in a simple example, if a patented flavour

composition consists of A+B, and a competitor produces a flavour composition A+B+C+D, where C is a known stabiliser and D is a known flow improver, both C and D merely performing their known functions and not affecting the working of A+B, the competitor probably still infringes.

However, the **interpretation of patents varies widely**. In the most notorious European case, *Improver v. Remington* (the *Epilady* case), the British Court of Appeal and the German *Bundespatentgericht* (Federal Patent Court) came to opposite conclusions on the same facts. The invention concerned a depilator, which consisted of two parallel shafts joined by a looped helical spring. As the shafts rotated, the spring windings on the outside of the loop opened and closed, thus providing the depilating action. The alleged infringement had the same shafts, but joined by a solid rubber tube whose surface contained numerous longitudinal slits. Like the spring windings, these opened and closed as the shafts turned. The British Court held that the rubber tube was a different invention and not an infringement. On the other hand, the *Bundespatentgericht*, taking the typically Germanic much more comprehensive assessment of what the skilled person would know, held the patent infringed. It all made somewhat of a mockery of the idea of uniform European patent protection.

Doctrine of Equivalents

This important principle, best known from the US original, states that the **replacement of a component** in a patented invention **by** another component that is only a **functional equivalent is** an **infringement**. The basic question is, does the alleged infringement use substantially the same means, in substantially the same way, to obtain substantially the same result as the patented invention? What exactly constitutes an “equivalent” has to be determined on the facts of each case, but up to recently a fairly broad definition of “equivalent” was allowed. The issue has been made even more unclear in the USA by *Festo v. Shoketsu*, where file wrapper estoppel (see p.94) was involved. If a patentee makes certain limiting amendments during prosecution, does this restrict the scope of possible equivalents against which s/he can take action for infringement? The answer (from the Supreme Court, no less) is yes, but it depends on the facts – no blanket rule is possible or desirable.

Other countries also have Doctrines of Equivalents, and one was introduced into EPC2000 (in the Protocol to Article 69); we wait with interest to see what is done with it.

The moral of the story is that great care and expert advice are needed when desiring to work close to a competitor’s patent.

(b) So, what happens when someone infringes your patent?

Or, worse, when you infringe someone else's? You are on your way to **court!** It is more than likely that you will not get there - after an initial period of the parties' posturing and snarling at each other, and having satisfied themselves that the other party really means it, they often sit down and hammer out a compromise, for example, one party gives the other a licence on better terms than would normally have been the case. If possible, court cases are **to be avoided because** they are **expensive**, horrendously so in the case of the USA where the cost in millions of dollars rises at a rate roughly comparable to that of the number of lawyers' children attending Harvard and Yale. And you must be prepared for such sums, especially in US litigation. You should not embark on infringement proceedings unless you're prepared to go all the way, so budget for a large sum - there's no way of predicting how much, but if it's a major US suit, the number may need eight

figures. (Really big ones look like the Gross National Product of Belgium). With any luck, you won't need it.

Relief obtainable

Should court action proceed, the patentee is looking for two things, an **injunction** (a court order which stops the infringer infringing) and some sort of **compensation** for the damage done to his business and for all the lawyers' and court fees which he otherwise wouldn't have had to pay. Small fry often cave in at the very mention of court. Bigger fish, who have usually studied carefully the possibilities of the case before committing themselves to manufacture, are harder to scare. Rarely does such an alleged infringer simply surrender. When you're dealing with a big competitor, you can expect a very determined onslaught on the validity of your patent or patents - action for revocation is almost standard practice. In some countries (e.g., the UK), the claim for infringement and counterclaim for revocation may be heard as part of the same court proceedings, in other countries (e.g., Germany) they are quite separate.

Will you get all your money back?

In most cases, **no**. If all goes well, you will get your injunction, but you will almost never get back all the money which you lost in sales or spent on the case - an exception to this is (yes, you've guessed it) the USA, where improper conduct by an infringer can lead to an award of treble damages. However, this may not matter; a competitor which has not only to pay substantial sums but which also has outlaid major expenditure for production facilities which it then cannot use has a major catastrophe on its hands. There are other possible benefits of court action. A willingness to resort to court action to defend patent rights can make competitors very cautious about infringing (or even getting too close to) your patents - some US companies in particular have cultivated a reputation for ferocity.

Speaking of the US, it is worth mentioning some of the mammoth settlements that have occurred there. In the Kodak v. Polaroid battle over instant photography, Kodak had to pay Polaroid $US900M, withdraw its cameras and film from sale and close its factory - not perhaps as much as the $US5.7 billion demanded by Polaroid, but enough to send many companies smaller than Kodak to the wall. Bear in mind always that

PATENT INFRINGEMENT CAN BE HAZARDOUS TO YOUR WEALTH!!

So, if you have any doubts about your new products or processes, see your patent attorney.

(c) Contributory infringement

It is **possible to be an infringer**, even though you do not actually commit an infringing act. This occurs **when you "contribute" to an infringement**. For example, you sell a product that has only one possible use, and that is an infring*i*ng use. You are not directly committing an infringing act - that is done by the user - but you are actively facilitating it, and you are therefore also an infringer. This can even apply when you are making a staple material. Let's take common salt. You're a supplier. A company has a patented formulation for rocket fuel in which common salt is an essential ingredient. You start supplying people with common salt with instructions on how to use it to make rocket fuel. Now the actual infringer is the person who actually produces the rocket fuel, but you have supplied the essential ingredient along with instructions on how to infringe, so you also are an infringer.

This sort of thing can crop up in many business areas very easily, and the actual infringers can be the customers. The odds are that your competitor won't take the customers to court (after all, they could become its customers and it's not a good idea to bite the hand that feeds you), but your customers won't love you for them in this position, and it could be very embarrassing for you.

(d) Does experimental use constitute infringement?

To what extent can you utilise someone else's patented invention? Given that one object of patents legislation is the encouragement of innovation means that people should have the right to experiment with patented materials and processes. And in general this is true (in some countries, e.g., Australia, there was considerable doubt as to how far this extended, but recent amendments to the legislation have provided more certainty). However, there is a **grey area** between this and the infringement of actual commercialisation.

"Springboarding"

Say a patent is about to expire and you wish to make the product. **Can you** set up your factory, order your raw materials, make your product, build up your stocks in the warehouse, ready to hit the streets the day after expiry? The answer is generally **no**. "Experimental use" is generally considered to stop short of the stage where the use becomes a direct "springboard" to commercialisation. In other words, you are entitled to ascertain that the thing works, but not to take direct measures towards commercialisation while the patent is still in force.

Pharmaceuticals and clinical trials

The only major **exception to** this **springboarding rule** occurs in the field of **pharmaceuticals**, where some countries permit **clinical trials** to be conducted **by** a **generic manufacturer** during the life of a pharmaceutical patent, in preparation for generic launch when the patent has expired. The position in the USA is more lenient; the US *Drug Price Competition and Patent Restoration Act 1984* (usually known as the Hatch-Waxman Act) allows a generic drug manufacturer to use a patented drug solely for the purposes of clinical testing of a generic imitation. This is held not to constitute infringement, even if done during the normal patent term. Hatch-Waxman, an enormously complex bit of legislation, now extends to secondary products (e.g. drugs in a different dosage form. It also includes provisions on data exclusivity – for example, if a New Molecular Entity is approved, a generic version cannot be approved for at least 5 years Other countries have similar provisions, if not so involved.

(e) Does repair constitute infringement?

Generally not. A right of reasonable repair is assumed. However, if the repair crosses the vague borderline into "reconstruction", it might constitute infringement. It depends on the circumstances of the individual case.

(f) What if someone comes along and patents something I did years ago? Can I stop him/her? Can s/he stop me?

This is **a simple question without a simple answer**. Basically, nobody can stop you from doing what you've been doing prior to the priority date of the patent. However, it will depend on exactly what you were doing. Say you invented something and decided against commercialising it. Then along comes someone else and patents exactly what

you'd done. What can you do? Usually nothing. If you have not published the invention in any way, and the invention has not subsequently become public knowledge before the priority date of the patent, you don't have a leg to stand on. You might have a chance if you had been taking active steps to commercialise the invention at the priority date, but you'd have to prove that.

If you have decided to work secretly, there could be problems in the USA, unless you use it as a trade secret (see under "Secret use" on p.59 above).

If you had been commercially working an invention and someone else patented it, you are fine with regard to what you're doing at the moment, but you may be prevented from extending it into neighbouring areas. Say someone patents A-Z, and you've been making and selling D-E for years. There is nothing to stop you from continuing to make and sell D-E (indeed, you might be able to invalidate that part of the patent), but if you tried to extend to F, you would infringe, unless you could show that F lacked inventiveness, and you'd need a good story (as you had never used F, the patentee can come straight back at you and say (with some justification), "Well, if it was so obvious and so useful, why didn't you do it?").

A related problem is...

(g) Infringement of patents with excessively broad scope

Every now and then, there is granted a patent with an outrageously broad scope, which dominates a complete area and **sometimes** even **covers part of the prior art**. This generally happens when a **patent office** (whose **Examiners**, it must be remembered, are most definitely **not persons skilled in the art** and who can only rely on the written record) **doesn't realise the import of what it has granted**. One way of getting such a grant is to define an invention in terms of a parameter that nobody else has ever used and claim advantageous results by adhering to this parameter. One example I can think of is a patent that sought to claim advantageous results from a polymer used as a superplasticiser (a material that makes concrete flow), the polymer being defined as one where the difference between the peak top molecular weight and the average molecular weight lay within a particular range. This definition was completely unknown in the art.

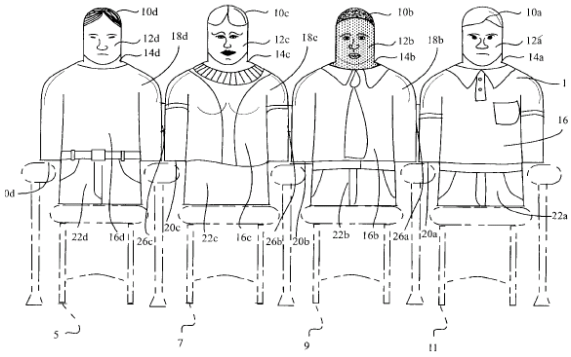
(h) When such a patent covers what you're already doing

Once a patent is granted, anything falling within the claims is an infringement. **What can be done** in such a case? It depends very much on the circumstances. In most places, **no granted patent prevents you from doing what you've already been doing publicly** before the priority date of the patent (but watch the situation in the USA if a secret use is involved – see p.59). However as mentioned above in (f), it **may prevent you from extending from that**. If it's important enough, it might be necessary to oppose the patent or even take court action. In such a case, you will have to be able to prove that the alleged invention lacked novelty or inventiveness at the priority date of the patent. This is an expensive and tricky business.

On the other hand, if you're confident that the evidence is on your side, you can simply ignore the patent – or, as Oliver Cromwell famously put it, "Put your trust in God – and keep your powder dry". But be sure that your powder really is dry, i.e., that the evidence really is on your side, and that you have a case that will stand up, before you do this. Then, if the patentee threatens an infringement suit, you can simply send him or her the evidence and tell him or her to go away. Of course, if you were very public-spirited

and/or made of money, you would take the case to court and have it invalidated, but not many of us are so well endowed with public spirit or money.

Unfortunately, such patents, like the poor, we shall have with us always and the approach to be taken depends entirely on the circumstances of each case. Should such a patent bother you, please let us know as soon as possible, so that we can advise on appropriate (in)action.



This invention provides inflatable three-dimensional humanoid figures for use in background scenes associated with still photography, motion pictures and video productions which are low in cost, lightweight, easy to use, easy to store, easy to transport and provides a greater range of viewing angles. It is also envisioned that this invention can be used for corporate conventions requiring the illusion of a large number of participants, in advertising and other functions where the illusion of large numbers of people enhance the overall objective of the functions.

Another kind of inflated claim – US 6,688,940

(i) <u>What about wide claims of published (but not yet granted) applications?</u>

As previously stated, **until** the competitor has a **patent,** s/he **can take no action**. Moreover, at this stage, **both competitor and you have no idea** as to **what** the patent office **will grant**. This means that the eventual **patentee cannot sue you for large amounts of money** – the best s/he can get is a **reasonable royalty on** any **sales** you made in the time **between your becoming aware** of the patent application **and** its **grant**. Therefore, continuing to work might be an option, but would have to be weighed against the fact that you might have to stop. It all depends on the individual circumstances of each case.

(j) <u>Offensive (in more ways than one) patenting</u>

This is a related problem. If some individuals and organisations see your **patent in a potentially useful area**, they may file their own patent applications on minor variants, for example, specific applications of the patented technology, even if these are obvious. In some cases, they will **file a very large number of patent applications** of their own, the idea being **to dominate the patent** and restrict your ability to act. It's not a cheap strategy, but there are those who are prepared to spend that kind of money. It works especially well in the USA, because (a) the standard of USPTO examination is now so pathetic (meaning that such patents have a reasonable chance of grant), and (b) a granted US patent can only be revoked by means of an expensive court case (meaning that a patentee has to be very sure of his/her grounds before undertaking such a course).

How to counter this? The best way is, of course, to produce all of these inventions first. However, assuming that you aren't made of money and have no desire to set up another organisation whose sole purpose in life is essentially crystal-ball gazing, the next best thing is to make sure that you **cover everything of interest** (insofar as this is possible) **in the original patent**, so that there's nothing worthwhile left for the offensive patentee. This is often easier said than done.

If there is technology that may be only marginally patentable and/or currently only of marginal interest to you and you want to deny it to others, it may be best to publish it.

There are several ways to do this. One is to file a patent application and allow it to publish, then abandon. No matter how silly it is, it will be published art. An alternative is to use something like the commercial *Research Disclosure* defensive publication service, which will publish your technology very quickly in its paper or on-line bulletins and make it state of the art. If you have a US-only technology and you want to keep it secret, the "submarine" approach (see p.85) can work – you file and you keep on refilling, and if someone else tries to patent the same thing, you can then proceed to grant and publication, with a priority that extends back to the original application. In this case, you need a patentable invention, or the ability to convince the USPTO that you have one.

(k) So, you really want to use someone else's patented technology…

…can you? It **may be possible**. Always consider the following points:

1. **Is the scope of the claims as granted sufficiently narrow to allow you to do what you want to do?**

Remember always that it is the scope of the claims as granted that defines the monopoly of a patent, and that most of the "patents" you'll see will be unexamined applications. In the particular case of the USPTO, also note that, in prosecution, only the claims are amended, never the specification – there is no US requirement to bring the specification into conformity with the claims. As a result, a granted US patent has its original broad specification, but it may have extremely narrow claims. Don't forget that claim interpretation is your attorney's job, not yours!

2. **Has the patent not been filed in the countries that interest you?**

It might well be that the patent isn't filed everywhere that interests you, and you may be able to use it in some countries.

3. **Is the patent still in force?**

Patents are expensive and patentees everywhere will not maintain patents that are not doing anything useful. And what seems useful to you may not seem useful to them. It is always worth checking whether a patent has been renewed, remembering that most places allow a six-month grace period for renewal (with an extra fee).

So, don't abandon hope, ask your attorney.

(l) What about working an invention or part of an invention in a country in which there is no patent…

…such as, performing a patented process in another country and then importing the non-patented product into countries where the process is patented? There's **no easy answer** to this one. In European patent law, the direct product of a patented process is also covered by the patent. But what if the process is for the manufacture of an intermediate, from which the final product is then made? There is very little case law extant, but I strongly suspect that such an action would be seen to be depriving a patentee of his rightful reward in the country and would constitute an infringement. This seems to be confirmed by the *Blackberry* case in the USA. One of the essential elements of the Blackberry transmission process, the e-mail relay, took place outside the USA (in Canada), meaning that the entire process of the allegedly infringed patent

did not take place in the USA. Nevertheless, the court held that this was an infringement. So, definitely a **risky business**.

(m) Exhaustion of rights and parallel importation

A **patent right** is deemed to be **"exhausted"** in a country **when the goods are marketed** in that country, that is, the patentee has a very limited ability to determine what the purchaser does with them. But s/he does have some say. For example, extensive modification (beyond normal repair) might be an infringement, depending on the circumstances. Moreover, with some exceptions, **exhaustion** of rights is **not international**. It is not permissible to buy legitimately cheap patented goods in one country and export them to another where they're more expensive, and where the patentee has an agent. This practice is known as parallel importation. It is more a concern with trade marks, but it does crop up from time to time with patents.

Exceptions? In the *BBS* (Aluminium Wheels) case, the **Japanese** Supreme Court held that there was an international exhaustion of rights, that the putting of the patented article on the market anywhere in the world exhausted the right in Japan. Up to recently, no other country followed this decision, but in a recent decision *Impression v. Lexmark*, the US Supreme Court agreed with the international exhaustion principle. This potentially opens the gates to parallel imports, so the US pharmaceutical industry, with its high drug prices, can be expected to react.

The only other case of international exhaustion occurs within the **EU**, in which patented goods placed on the market of any EU member state exhausts the right in all other member states. This has encouraged the parallel importing of high-value, easy-to-transport goods, such as pharmaceuticals, from cheaper countries to more expensive countries.

Patent information and how to get it (should you be so misguided as to desire it)

So, you'd like to look at some patents for their information value (to see what other folk (especially the competition) are doing). How do you go about it? This short review seeks to provide some ways to get patent information. It is based on my own experiences and makes no pretence at being comprehensive, but it is hoped that it is interesting and/or useful.

Public (and industry) awareness of the value of intellectual property has risen dramatically since I started in the profession in 1970. In those days, patents were an obscure topic, now they often make the newspapers (often for all the wrong reasons). As a result, there is greater interest in patent information than ever before.

(a) In the beginning…

…the only way to search patents was to go down to your local friendly patent office and search manually through their collections. Access was via the patent office's classification system (see Appendix B) – and in the days before the arrival of the International Patent Classification, each patent office had its own. This was a game for professional searchers, strange creatures who seemed to live on the premises, regard it as their personal fiefdom and get upset if their unwritten rules weren't obeyed (golden memories of Miss Thompson in the Melbourne Sub-Office in the 1970s, asking in her quiet, delicate Australian fashion, "WHAT B*****D DIDN'T REPLACE THIS VOLUME?")

(b) Chemical Abstracts

In the chemical field, the ACS's flagship publication included patents in its various sections, but only as second-class citizens to real chemical literature. There was no way to check patent families.

(c) …and then along came Derwent…

…and the world of patent information changed forever for the better.

Montague Hyams perceived a market for patent information. Belgium was the first country in Europe to introduce early publication (the Belgian Office doesn't examine), and Monty obtained every week newly-published Belgian patents, which he had abstracted and published in a booklet. The first Derwent service (FARMDOC - pharmaceuticals, not agrochemicals!) started in 1963. It was followed by AGDOC (no prizes for guessing what that was), and by 1970, Derwent's core CPI (Chemical Patents Index) had started.

Since then, Derwent's coverage, both in terms of country and range of technologies, has steadily expanded. Derwent has shown great talent in keeping up with and utilising the latest developments in information technology and in keeping the customers satisfied.

Since Derwent's arrival, Chemical Abstracts has raised its patent game considerably, to the benefit of everyone.

(d) The commercial networks era

Commercial searchable databases arrived in the 1970s, and were accessible via modems and telephone lines in the pre-Internet era. The eventual winner of the struggle to become the “supermarket” database was the US DIALOG network, which has many hundreds of databases of all kinds. Others, such as ORBIT (now Questel-Orbit), decided to specialise in technical subject matter and others disappeared completely (including a short-lived attempt by publisher Pergamon Press to get into the market).

The databases require specialised knowledge to work efficiently and they were (and are) expensive, both in terms of on-line time and records printed on-line. This places them off-limits to all but experienced searchers who are comfortable with the search language and the tricks of the trade needed to get the best out of them. This applies especially in the more exotic fields, such as molecular substructure searching in the pharmaceutical and agrochemical fields.

(e) The coming of the Internet..

…opened up a whole new ball game, allowing many more people unlimited access to patent information. Patent documents are now freely available, often in full-text form, from a number of websites. This is in its infancy but already the records extend back quite an impressive time, and that will improve.

The full text aspect of the Internet allows the specialist to see early (and free) what claims are in an application or patent, and therefore better to consider whether fight or flight is necessary. However, full text services in no way replace the abstracts services. A Derwent abstract will give a full list of the patent family, not just one patent. In addition, key word searching in a full text document is a notoriously hit-and-miss affair, whereas the more concentrated, carefully-selected and -targeted wording of the purpose-built abstract, concentrating on the core subject matter of the document, can often lead to a better result. Moreover, abstracts can be coded to provide services that cannot be provided (yet) by full text searches, such as searches for specific chemical compounds, by such means as fragmentation codes, specialised notation and desired molecular fragments drawn on the screen.

Both abstracts and full text have their place, and proper "horses for courses" use of both gives the best result. The abstracts services are better for current awareness and quick identification of relevant subjects, the full text services are the natural complement when something apparently relevant is seen and merits more thorough investigation.

(f) But why would anyone want patent information?

There are two reasons, **information and legal.** The information aspect, be it for technology or for to see what the competition is up to, is what interests most researchers. This aspect is the rationale for the abstracts services, such as Derwent and Chemical Abstracts. The legal aspects concern the patent specialist - are we going to infringe this patent? Will it infringe ours? From the legal point of view, the abstracts services are of limited use. Anyone who has survived this booklet this far will realise that the granted claims define the extent of the monopoly of a patent, and that only an assessment of the full, granted document will suffice. Thus, for patent attorneys, abstracts only constitute an early warning of something perhaps worth looking at (and perhaps opposing) when it is nearer to grant.

Although the abstracting services refer constantly to "patent abstracts", this is rarely the case. What are usually abstracted are not patents but pre-examination published applications at 18 months from priority. This is another reason for the patent specialist to regard them as early warning material only.

(g) Is patent information actually useful?

The answer is, **yes and no** (yes for the patent specialist, not always for the researcher). It depends entirely on what the researcher wants. Does s/he want an indication of the direction of the R&D (and therefore the future products) of the competition? In this case, it is fair to say that patents are always useful. However, if s/he is looking for precise information as to what is in the products of the competition and how they are made, s/he could be disappointed.

As stated back at the beginning of this booklet, a **patent's primary purpose is** not to edify and enlighten mankind in general but **to define a piece of exclusive technology**. The duty of the patentee is to describe the invention to such an extent that the skilled person will be able to work it without either having to reinvent it or to perform an unreasonably large number of experiments to find out where the invention lies (what the EPO calls "undue burden"). For example, if I claim a polymer suspension, which is stabilised by a salt, the implication is that any salt will work. If this is not true, I have both claimed matter that doesn't work (fatal to the application) and presented the reader with a burden which could fairly be described as "undue".

But remember *No-Fume v. Pitchford* back on p.37; you **need not teach absolutely everything.** Indeed, this is impossible, given that the same raw materials from different sources can often perform differently in the same experiment, and that adjustments and optimisation will usually be needed. Those who work with cements from different parts of the world will be well aware of this. There was also the superplasticiser patent, whose Example 1 described a free-flowing solution. The lab. preparation of the Example 1 material was a free-flowing solution the way that granite is a free-flowing solution. So, was the patent bad? Not necessarily. A local variation in raw materials could have made the difference.

Remember too, that the average patentee will discharge his duty to the public, but no more than that. Thus, **patent examples are often laboratory-scale examples** which produce what's wanted, but **give** you **no idea as to** how (or if) this can be repeated on an **industrial scale.** All the **valuable know-how**, the stuff that can make the difference between a laboratory curiosity and a viable product, **is generally missing**, being kept for the use of the patentee or prospective licensees.

It must be said that some patents are "fishing expeditions", covering something in the hope that it may turn out to be useful. My introduction to this was a herbicide patent 300 pages long, about 280 pages of which was a list of specific compounds corresponding to the main Markush formula (see p.56). Roughly once per page there was a melting point, meaning that they had actually made that one. The rest were pure pie in the sky, seeking to protect the patentee against someone else getting a selection patent (see p.96) within the broad scope. More recently, this patent has been dwarfed by the biotech. applications with their thousands of pages of gene sequences, isolated from nature for the first time. Nobody has the faintest idea whether these are actually useful for anything, but applicants are determined to cover them "just in case".

Derwent has much to say about how valuable patent information is for the technologist (well, it has to, hasn't it?), how patents are carefully examined and have therefore proven utility. Well, to paraphrase Gershwin, it ain't necessarily so. With the best will in the world, patent examiners are rarely persons skilled in the art. In fact they are often recent university graduates who have little idea about the industrial world, and who can therefore be "conned" as easily (perhaps more so) as anyone else. Moreover, they are only judging new applications against prior-published paper disclosures, usually other patents/patent applications, and who's to say that these represent reality? This is why most patent offices have opposition procedures - so that competitors, people who are genuinely skilled in the art, have the opportunity to oppose newly-accepted or -granted applications.

(e) So, how do I go about this searching business?

This depends entirely on what you want to find. Normally, searching for specific patentees/applicants is just a matter of plugging in the appropriate name.

Searching for patent/application numbers can be a trial, because there are many **different number formats**. Take a hypothetical PCT publication number WO 2005/004321. No data base will accept that. *Esp@cenet* at one point would have accepted “WO054321”, but now it wants “WO20054321”. And what about the two zeros before the 4? Some databases want both, some want one, some want none at all. And some want a space between the WO and the figure! In other words, be prepared to try all the combinations.

Searching for subject-matter is another matter entirely. It comes down to two approaches, **key words and coding**.

Key words can be tricky. It works well for some subjects, but not for others, simply because there are so many possible key words to cover a particular subject. For example, you’re looking for microcapsules containing perfume. So, is “microcapsules” sufficient? What if the word used in the target document is “capsule”, or “microparticle”? Or what if the verb “encapsulate” is used? And what about the “perfume” bit? If the target document refers to “fragrance” or “odour substance” only, you’ll miss it. For a thorough search, you need to consider all the possibilities.

This is where the specialist patent databases such as Derwent score – they have search languages that allow you to put in a variety of alternative key words. So, a search in DIALOG will look like this:

(capsul? or microcapsul? or encapsul? or microencapsul? or microparticl? or particl? or particulate? or microparticulate?) and (perfume? or fragran? or odour? or odor?)

The question marks are truncations, ensuring that anything with the word fragment is picked up. The operation is determined by the **Boolean operators** OR and AND. The command A OR B will find everything with at least one of A and B, the command A AND B will only find items with both A and B. AND is carried out first, unless there are brackets, in which case the contents of the brackets will be performed first. Thus, in the above case, all the “capsule” terms and the “perfume” terms will be searched first, and then the two results combined to give you all combinations having both terms.

Boolean operators may be used on some free databases as well (such as Espacenet), but the possibilities are limited in comparison with the specialist databases. For a

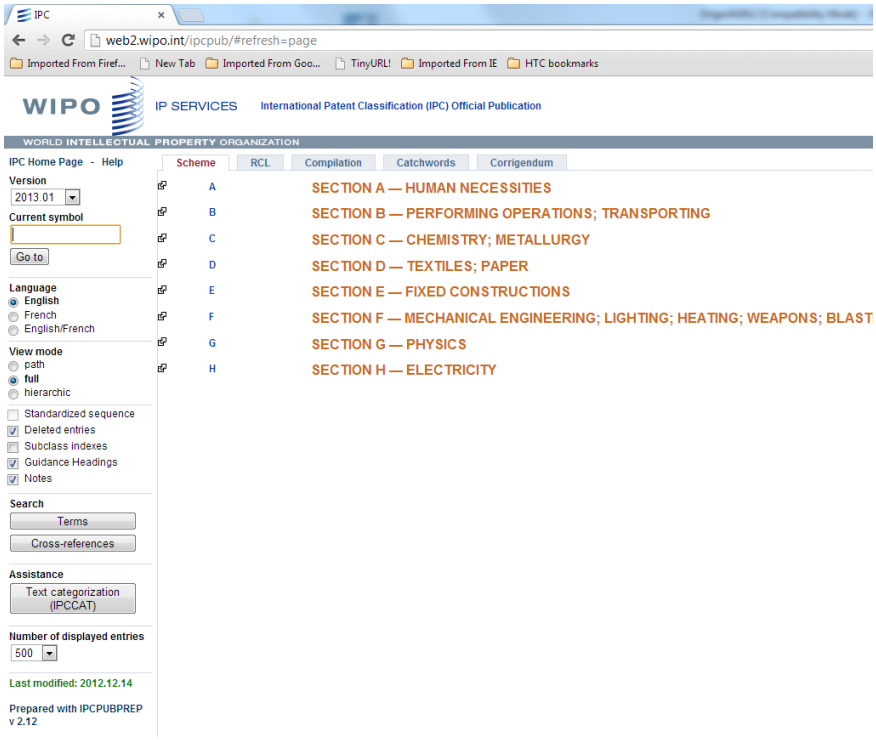
thorough search in a free full-text database such as Espacenet, be prepared for a lot of work.

By **codes**, I mean something that represents particular subject matter consistently regardless of what it's called. We'll ignore the specialist coding systems evolved by the likes of Derwent and look at the most important, namely the patent classifications used by the patent offices themselves. As explained on p.18, the first thing that patent offices do with a new application is to classify it, so that it finds its way to the relevant Examining Group, so using the official classification is a good way to go.

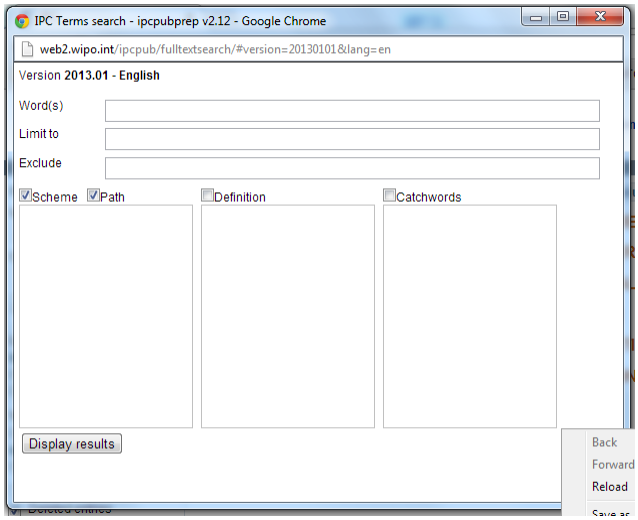
The most important of these is the **International Patent Classification (IPC)** (see Appendix B):

http://tinyurl.com/a96yzsb

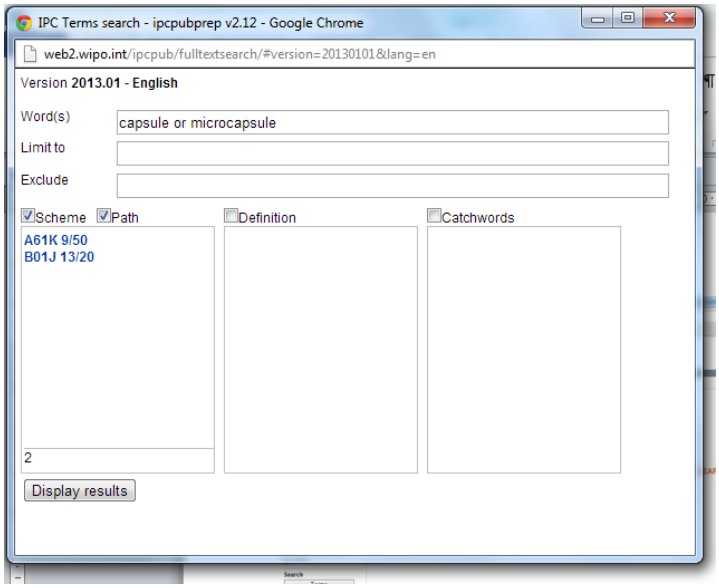
Here's the screen:



Click on that "terms" box down on the left:



and add your term:



A61K 9/50 is this – medicinal, so perhaps not of great relevance:

A61K 9/00
Medicinal preparations characterised by special physical form

A61K 9/48

A61K 9/50

A61K 9/51

Preparations in capsules, e.g. of gelatin, of chocolate **[2]**

· · Microcapsules (**A61K 9/52** takes precedence) **[2]**

· · · Nanocapsules **[5]**

and B01J 13/20 is like this – more relevant:

B01J 13/00
Colloid chemistry, e.g. the production of colloidal materials or their solutions, not otherwise provided for; Making microcapsules or microballoons (use of substances as emulsifying, wetting, dispersing or foam producing agents **B01F 17/00**)

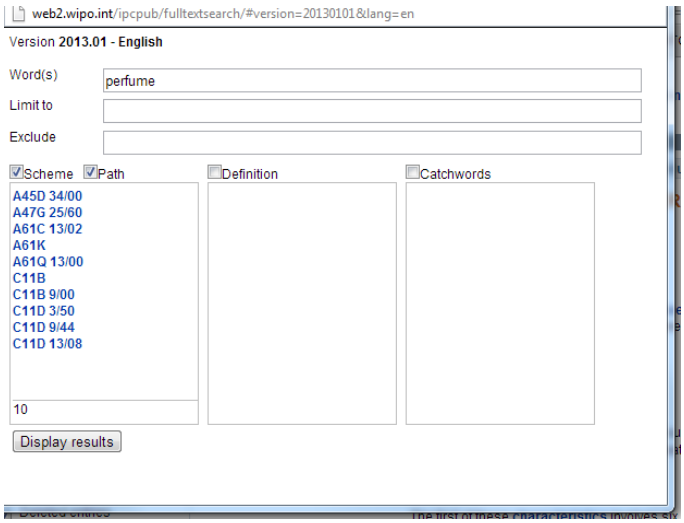
B01J 13/02

B01J 13/20

· Making microcapsules or microballoons

· · After-**treatment** of capsule walls, e.g. hardening **[5]**

So, what about perfume?



The first one isn't much use in this case:

A45D 34/00
Containers or accessories specially adapted for handling liquid toilet or cosmetic substances, e.g. perfumes

A45D 34/02
· Scent flasks, e.g. with evaporator

but this one looks promising:

A61
MEDICAL OR VETERINARY SCIENCE; HYGIENE
A61Q
SPECIFIC USE OF COSMETICS OR SIMILAR TOILET PREPARATIONS [8]

A61Q 13/00
Formulations or additives for perfume preparations (essential oils or perfumes per seC11B 9/00) [8]

So, we end up with IPCs for "capsule" and "perfume", which we can then use as search terms. It's wise not to get too specific, but to stick to the more general classifications, such as that A61Q above, rather than get into the 13/00, etc. Remember that classifiers are human, and that two classifiers can come up with two different results (and the USPTO was notoriously bad at IPCs). A good check is to take a relevant patent and see how it was classified, and then try that.

The other important classification is the **USPTO system** (see Appendix B):

http://tinyurl.com/bcl6acb

This is the oldest classification system in existence, but is used exclusively by the USPTO (nearly everyone else uses the IPC). However, a new development has appeared – the **Cooperative Patent Classification (CPC)**, the results of a cooperation between the USPTO and the EPO, seeking to provide a uniform classification for use by both offices (and possibly others), by combining the best features of the US and classification and the IPC. You'll notice that the CPC is already on the USPTO site above, ditto Espacenet:

http://tinyurl.com/EspacenetCPC

where it has replaced the ECLA (European Patent Classification):

http://tinyurl.com/ECLACPC

(f) Some sources of patent information

Abstracts services

Derwent, **http://tinyurl.com/DerwentPubs** now owned by the Thomson Reuters Group, is undoubtedly the best here; the abstracts are excellent, with equivalents and in-depth coding systems. The abstracts now endeavour also to cater for the legal aspects by identifying the subject matter specifically claimed. The full Derwent WPI database is accessible on-line via a number of commercial host systems and directly through the Internet. Anyone can use it, but it's quite expensive for subscribers

(horrendously so for non-subscribers). In addition, like all abstracts services, it requires specialised knowledge and considerable experience to get the best out of it. Letting an amateur who doesn't really know what s/he is doing loose in Derwent is a great way to spend a lot of money very quickly.

The **CAS Online** service of Chemical Abstracts **http://tinyurl.com/ChemAbs** , available through the STN Online Network, is the only on-line service to offer the abstracts of Chemical Abstracts themselves (other hosts offer only bibliographic information and subject identifiers). The CA abstracts are not as good as Derwent's, but CA does have the advantage of including non-patent literature. In addition, the abstracts are available on-line faster than are Derwents (a couple of weeks, *versus* at least 6 weeks, and usually longer).

The **Questel Orbit** http://www.questel.com/ commercial database network of France Telecom is trying to mount a serious challenge to Derwent's hegemony. Its PatentPlus service claims unrivalled country coverage (68 countries). In addition, in some cases, the records go back to the 1920s, as opposed to Derwent's mid-1960s, and it has INPADOC-derived legal status information, something absent from Derwent. Derwent has the advantages of better abstracts and the most recent mechanical records have drawings. There is also the fact that old patent records are usually of historical interest only, except perhaps in the mechanical field. Questel Orbit also hosts Derwent, so its customers have it both ways.

There are other commercial databases, which provide abstracts. **JAPIO** **http://tinyurl.com/JapioEng** contains English language abstracts of all Japanese Kôkais published since 1976 (and that's a lot). There is also a commercial database giving English language abstracts of all Chinese patents since the PR China Patent Office opened its doors for business in 1985. The CLAIMS files for US patents once offered the best US coverage, but they have been largely upstaged by the USPTO's own database.

At this point, it is perhaps worth mentioning the website of the **Japanese Patent Office,** which has the so-called J-Plat Pat (replacing the former IPDL):

https://www.j-platpat.inpit.go.jp/web/all/top/BTmTopEnglishPage

The JPO updates the records only about every 6-8 weeks, so if you search for a particular International Patent Classification, there is a long period with no change, and then you are swamped. But at least it's free. And they now have computer translations of many of the texts (but not the older ones) – not brilliant, but they give you some idea of what it's about.

On this site, you're going to need to know about **Japanese patent numbering**. As of 2000, the Japanese have application numbers of the format Gregorian calendar year-number, something like 2005-123456. However, the older stuff used the Imperial reign year, and that started anew with every new Emperor. Emperor Hirohito started his reign in 1926. This was the *Showa* ("enlightened peace") reign. So, an application made in 1926 would have borne a number of the form S01-123456. He was succeeded by his son Akihito in 1989, and Akihito's reign is the *Heisei* ("achieving peace") reign. So, an application filed in 1989 will have a number of the form H01-123456. Here are some Japanese years with their Gregorian equivalents:

S-55	– 1980	S-64*/H-01	– 1989
S-60	– 1985	H-05	– 1993

S-63 – 1988 H-10** – 1998

*1989 was S-64 only from 1-9 January, 1989
** the last *Heisei* number was H12 (2000)

It should also be remembered that the Japanese application numbers and the *Kôkai* (early publication) numbers have the same format. In other words, application 2005-123456 and *Kôkai* 2005-123456, do not refer to the same thing, so make sure and look for the right one. Most of the Japanese numbers you see are *Kôkais*. Japanese granted numbers are seven-figure serial numbers currently in the high 3 millions.

Bibliographic/legal status databases

Many of these are really of relevance only to patent specialists, but some offer materials of more general interest.

The database of **INPADOC** in Vienna is available on some commercial host systems, and can be searched not only for patent family members but also for legal status (but not for all entries). **http://tinyurl.com/INPADOC**

The EPO's ***Epoline*** system on the Net allows you not only to trace the progress of a competitor's application (and therefore know when to start worrying) but also to print out the actual documents filed by the competitor (and therefore know why to start worrying). **http://tinyurl.com/Epoline**

The USPTO's **PAIR** (Patent Application Information Retrieval) system, available on the USPTO website, has the same facility. There is a Public PAIR (available to the general public) and a Private PAIR (available only to applicants prior to publication). PAIR is also useful for finding our whether a US patent has been renewed.
http://tinyurl.com/USPTO-PAIR

Many national patent offices (e.g., the UK, Australian and Canadian offices) offer bibliographic information on their websites, plus sometimes legal status information on the patents/patent applications concerned - for example, on the British Patent Office's website, you can find out whether a British patent is still in force.

Full text on-line

Full text has been available on-line for some time from both commercial and official host systems. The commercial hosts still have the benefit of more sophisticated search languages, but the times when these can offer positive advantages over the abstracts services are relatively few, and of course they want to be paid.

Some services offer the possibility not only to access the whole text but also to search it. As previously mentioned, given the tendency of patent attorneys to stick in everything that could possibly be useful (along with healthy doses of speculation), this can be a mixed blessing, as it can lead to your having to sort through mountains of irrelevant rubbish to get at the few nuggets of gold. Thus, a valuable addition to the searcher's arsenal, but one to be used judiciously.

A few sites worth looking at are listed below.

Esp@cenet **http://tinyurl.com/Espacenet-search**

This is the patent service run by the EPO. It can be found at *ep.espacenet.com* (no "www"). This will take you directly to the entry for the European and PCT application files, plus the facility to look up directly any patent number. If you try *www.european-patent-office.org/espacenet/info/access.htm*, this will lead you to the national patent registers of the EPO's contracting states, and there you can find national patents and patent applications. All are in pdf format, so they can be downloaded exactly as published, official front pages and drawings too. And all for free!

If the pdf document is too large, only the front page will be available on *Esp@cenet.* In this case, it is worth checking out Epoline, which will often have it.

The searching facilities of Esp@cenet are limited in comparison with those of Derwent and STN, and the system's real forte is making available the documents after they've been located in a Derwent-type search. However, it is steadily improving. Espacenet's limitations are set out here:

http://tinyurl.com/auv593r

Patentscope is run by WIPO and offers full-text searching on 1.7 million International applications. **http://tinyurl.com/WIPO-Patentscope**

USPTO **http://tinyurl.com/USPTO-patent**

The USPTO's website (*www.uspto.gov*) provides access to a wide range of materials. It is possible to see the full text of granted patents issued since 1976 and all published applications since the US started early publication. In addition, as previously mentioned, there is PAIR.

Thomson Reuters **http://tinyurl.com/ThomReut**

Not a database, but an entire arsenal of them. TR has departed from its former news services and has become involved in textbook publishing and information services.TR owns Derwent, and has moved to acquire and offer (for a fee, of course) many other full-text services. Many of them have overlapping capabilities. These include:

Delphion Formerly the IBM Intellectual Property Network. A patent search and analysis system

Micropatent Offers full-text patents for a limited number of patent-issuing authorities. It also offers trade mark information.

Patent Web Claims to be the world's largest collection of patent data (50 million full-text and front page records).

Thomson Innovation A combination of much of the above with business information and non-patent scientific literature, plus an assortment of analytical tools.

Google Patents **http://tinyurl.com/GooglePats**

Not surprisingly, Google has joined in with Google Patents, which allows searching in the same manner as the usual Google search engine, and full text access to any records found. It does not search the full text.

Free patents online **http://tinyurl.com/FreePatOn**

…offers, er, free patents online, plus quite a few other useful goodies and facilities.

SureChem https://surechem.com/

A chemical searching service

Intellogist **http://tinyurl.com/Intellogist**

Produced by patent support firm Landon IP. A useful site, with lots of information, including details of searching possibilities.

Some national patent office resources

Australia **http://tinyurl.com/OzPat**
China **http://tinyurl.com/ChinaPat**
France http://www.inpi.fr/
Germany **http://tinyurl.com/GerPat**
India **http://tinyurl.com/IndiaPat**
Korea **http://tinyurl.com/KoreaPat**
Spain **http://tinyurl.com/SpainPat**

- includes Latipat-Espacenet, covering the countries of Latin America: **http://tinyurl.com/LatiPat**

UK **http://tinyurl.com/GBPat**

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APPENDIX A

The front page of the apparently everlasting US 4,376,851…

United States Patent [19]

Hogan et al.

[11] **4,376,851**

[45] **Mar. 15, 1983**

[54] SOLID POLYMERS OF OLEFINS AND PRODUCTION OF SUCH POLYMERS

[75] Inventors: **John P. Hogan; Robert L. Banks,** both of Bartlesville, Okla.

[73] Assignee: **Phillips Petroleum Company,** Bartlesville, Okla.

[21] Appl. No.: **558,530**

[22] Filed: **Jan. 11, 1956**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 333,576, Jan. 27, 1953, abandoned, and Ser. No. 476,306, Dec. 20, 1954, abandoned.

[51] **Int. Cl.**[3] **C08F 110/06**

[52] **U.S. Cl.** **526/351**

[58] **Field of Search** 260/93.7; 526/351

[56] **References Cited**

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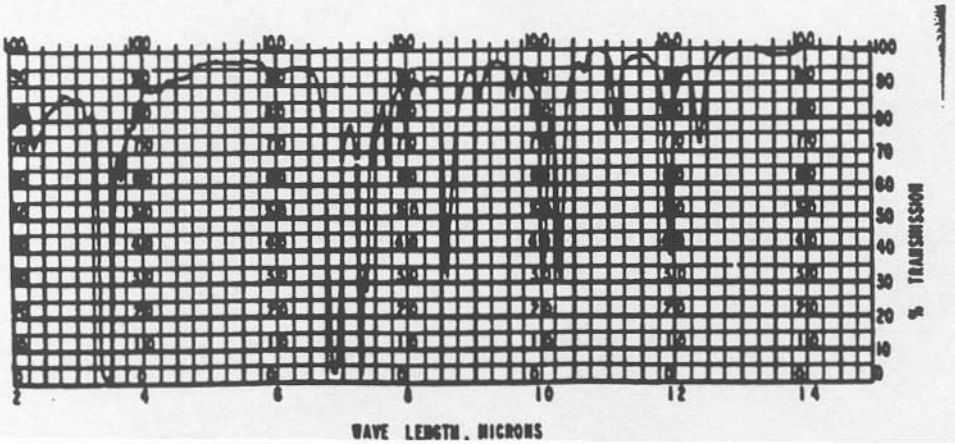
Primary Examiner—Joseph L. Schofer

Attorney, Agent, or Firm—French, Hughes & Doescher

EXEMPLARY CLAIM

1. Normally solid polypropylene, consisting essentially of recurring propylene units, having a substantial crystalline polypropylene content.

1 Claim, 4 Drawing Figures



…and the even more everlasting US 6,365,687:


US006365687B1

(12) **United States Patent**
Natta et al.

(10) **Patent No.: US 6,365,687 B1**
(45) **Date of Patent: Apr. 2, 2002**

(54) **PROCESS FOR THE POLYMERIZATION AND COPOLYMERIZATION OF CERTAIN UNSATURATED HYDROCARBONS**

(75) Inventors: **Giulio Natta**; **Piero Pino**; **Giorgio Mazzanti**, all of Milan (IT)

(73) Assignee: **Basell Poliolefine S.p.A.**, Milan (IT)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **07/883,912**

(22) Filed: **May 12, 1992**

Related U.S. Application Data

(60) Continuation of application No. 07/719,666, filed on Jun. 24, 1991, now abandoned, which is a continuation of application No. 07/607,215, filed on Oct. 29, 1990, now abandoned, which is a continuation of application No. 06/906,600, filed on Sep. 10, 1986, now abandoned, which is a continuation of application No. 06/498,699, filed on May 27, 1983, now abandoned, which is a continuation of application No. 04/710,840, filed on Jan. 24, 1958, now abandoned, which is a division of application No. 04/514,097, filed on Jun. 5, 1955, now abandoned.

(30) **Foreign Application Priority Data**

Jun. 8, 1954 (IT) 24227
Jul. 27, 1954 (IT) 25109

(51) **Int. Cl.**[7] **C08F 4/642**; C08F 210/02

(52) **U.S. Cl.** **526/159**; 526/308; 526/348; 526/348.5; 526/348.6

(58) **Field of Search** 526/159, 308, 526/348, 348.5, 348.6

(56) **References Cited**

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Primary Examiner—Fred Teskin

(57) **ABSTRACT**

This invention relates to a process for copolymerizing unsaturated hydrocarbons of the formula CH_2=CHR in which R is a saturated aliphatic radical with two or more carbon atoms or a cycloaliphatic radical, in the presence of a catalyst comprising a catalytic aluminum alkyl compound and a catalytic titanium halide compound.

34 Claims, No Drawings

…and the yet even more everlasting US 6,097,812:

US006097812A

United States Patent [19]

Friedman

[11] **Patent Number: 6,097,812**

[45] **Date of Patent: Aug. 1, 2000**

[54] **CRYPTOGRAPHIC SYSTEM**

[75] Inventor: **William F. Friedman**, Washington, D.C.

[73] Assignee: **The United States of America as represented by the National Security Agency**, Washington, D.C.

[21] Appl. No.: **02/682,096**

[22] Filed: **Jul. 25, 1933**

[51] **Int. Cl.**[7] **H04L 9/38**; H04L 9/10; H04L 17/02; H04L 17/16

[52] **U.S. Cl.** **380/26**; 380/287; 380/52; 380/56; 380/57; 380/59; 341/50; 341/90; 341/91

[58] **Field of Search** ..... 380/255, 259, 380/270, 287, 26, 51, 52, 55, 56, 57, 58, 59, 27, 47; 341/50, 90, 91; 178/17 A

[56] **References Cited**

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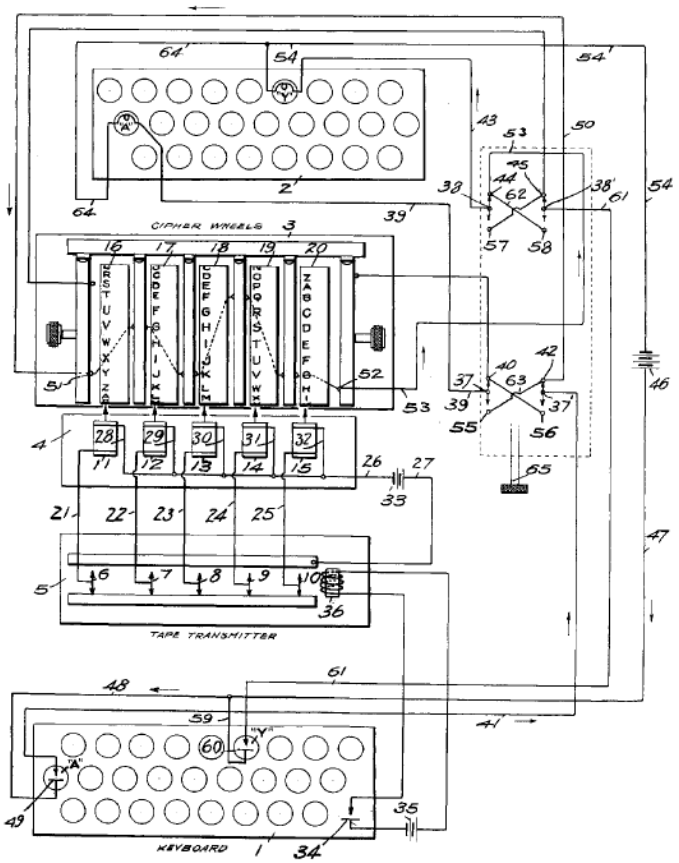
Primary Examiner—Bernarr E. Gregory

[57] **ABSTRACT**

The crytographic system automatically and continuously changes the cipher equivalents representing plaintext characters so as to prevent any periodicity in the relationship. The system has a series of juxtaposed, rotatable, connection changing mechanisms to provide a large number of alternative paths for the passage of an electric current corresponding to a message character. Further, the system has parts for the irregular and permutative displacements of the members of a set of circuit changing mechanisms to thwart cryptanalysis.

28 Claims, 2 Drawing Sheets



APPENDIX B

Excerpt from the International Patent Classification (7th. Ed.)
(US classification excerpt on the next page)

8 / 34 • Introducing sulfur atoms or sulfur-containing groups **[2]**
8 / 36 • • Sulfonation; Sulfation **[2]**
8 / 38 • • Sulfohalogenation **[2]**
8 / 40 • Introducing phosphorus atoms or phosphorus-containing groups **[2]**
8 / 42 • Introducing metal atoms or metal-containing groups **[2]**
8 / 44 • Preparation of metal salts or ammonium salts **[2]**
8 / 46 • Reaction with unsaturated dicarboxylic acids or anhydrides thereof, e.g. maleinisation **[2]**
8 / 48 • Isomerisation; Cyclisation **[2]**
8 / 50 • Partial depolymerisation **[2]**

Homopolymers or copolymers [2]

10 / 00 Homopolymers or copolymers of unsaturated aliphatic hydrocarbons having only one carbon-to-carbon double bond [2]
10 / 02 • Ethene **[2]**
10 / 04 • Monomers containing three or four carbon atoms **[2]**
10 / 06 • • Propene **[2]**
10 / 08 • • Butenes **[2]**
10 / 10 • • • Isobutene **[2]**
10 / 14 • Monomers containing five or more carbon atoms **[2]**

12 / 00 Homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an aromatic carbocyclic ring [2]
12 / 02 • Monomers containing only one unsaturated aliphatic radical **[2]**
12 / 04 • • containing one ring **[2]**
12 / 06 • • • Hydrocarbons **[2]**
12 / 08 • • • • Styrene **[2]**
12 / 12 • • • • containing a branched unsaturated aliphatic radical or an alkyl radical attached to the ring **[2]**
12 / 14 • • • substituted by hetero atoms or groups containing hetero atoms **[2]**
12 / 16 • • • • Halogens **[2]**
12 / 18 • • • • • Chlorine **[2]**
12 / 20 • • • • • Fluorine **[2]**
12 / 22 • • • • Oxygen **[2]**
12 / 24 • • • • • Phenols or alcohols **[2]**
12 / 26 • • • • Nitrogen **[2]**
12 / 28 • • • • • Amines **[2]**
12 / 30 • • • • Sulfur **[2]**
12 / 32 • • containing two or more rings **[2]**
12 / 34 • Monomers containing two or more unsaturated aliphatic radicals **[2]**
12 / 36 • • Divinylbenzene **[2]**

14 / 00 Homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a halogen [2]
14 / 02 • Monomers containing chlorine **[2]**
14 / 04 • • Monomers containing two carbon atoms **[2]**
14 / 06 • • • Vinyl chloride **[2]**
14 / 08 • • • Vinylidene chloride **[2]**

Class 526 SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES

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This Class 526 is considered to be an integral part of Class 520 (see the Class 520 schedule for the position of this Class in schedule hierarchy). This Class retains all pertinent definitions and class lines of Class 520

SYNTHETIC RESINS (CLASS 520, SUBCLASS 1)

59 · EFFECTING A CHANGE IN A POLYMERIZATION PROCESS IN RESPONSE TO A MEASUREMENT OR TEST

60 ·· Change responsive to composition property other than density

61 ·· Change responsive to pressure or temperature

62 · POLYMERIZING IN REACTOR OF SPECIFIED MATERIAL, OR IN REACTOR IN WHICH SURFACE CONTACTING POLYMERIZING MATERIAL HAS BEEN TREATED

63 · POLYMERIZING IN PRESENCE OF INERT SOLID MASSES SO AS TO HEAT, COOL, OR GRIND POLYMERIZING MASS

64 · POLYMERIZING IN TUBULAR OR LOOP REACTOR

65 · POLYMERIZING IN TWO OR MORE PHYSICALLY DISTINCT ZONES

66 ·· Adding material to polymerization zone in an incremental or sequential manner

67 · REMOVING AND RECYCLING REMOVED MATERIAL FROM AN ONGOING POLYMERIZATION ZONE TO A POLYMERIZATION ZONE

68 ·· Recycling monomer

69 ·· Recycling catalyst

70 ·· Recycling diluent

71 · REMOVING ONLY NONPOLYMERIZED OR NONPOLYMERIZABLE MATERIAL DURING POLYMERIZATION PROCESS

72 · POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING

73 ·· Polymerization involving two or more specified temperature or pressure conditions

74 ·· Utilizing material during polymerization to prevent or remove reactor buildup, e.g., fouling, clogging, etc.

75 ·· Including step of synthesis of monomer or pre-polymer

76 ··· Polymerizable material derived from petroleum fraction

77 ·· Including step of purifying monomer

78 ·· Adding material to an on-going polymerization reaction, said addition being other than the continuous addition of the initial charge

79 ··· Adding in an incremental or sequential manner

80 ···· Polymerizing in the presence of water

81 ·····▪ Added material is other than monomer per se, or composition containing monomer

82 ··· Adding polymerization inhibitor or terminator, e.g., short-stopper, etc.

83 ···· Added material contains nitrogen compound

84 ···· Added material contains oxygen compound

85 ···· Added material contains sulfur atom

86 ··· Adding catalyst or catalyst component

87 ··· Adding monomer

88 ·· Polymerization involving specified mixing, stirring, agitating, or movement of material

89 ·· Polymerizing in the presence of a specified material other than monomer

90 ··· Material contains transition metal or compound thereof

91 ···· In presence of water

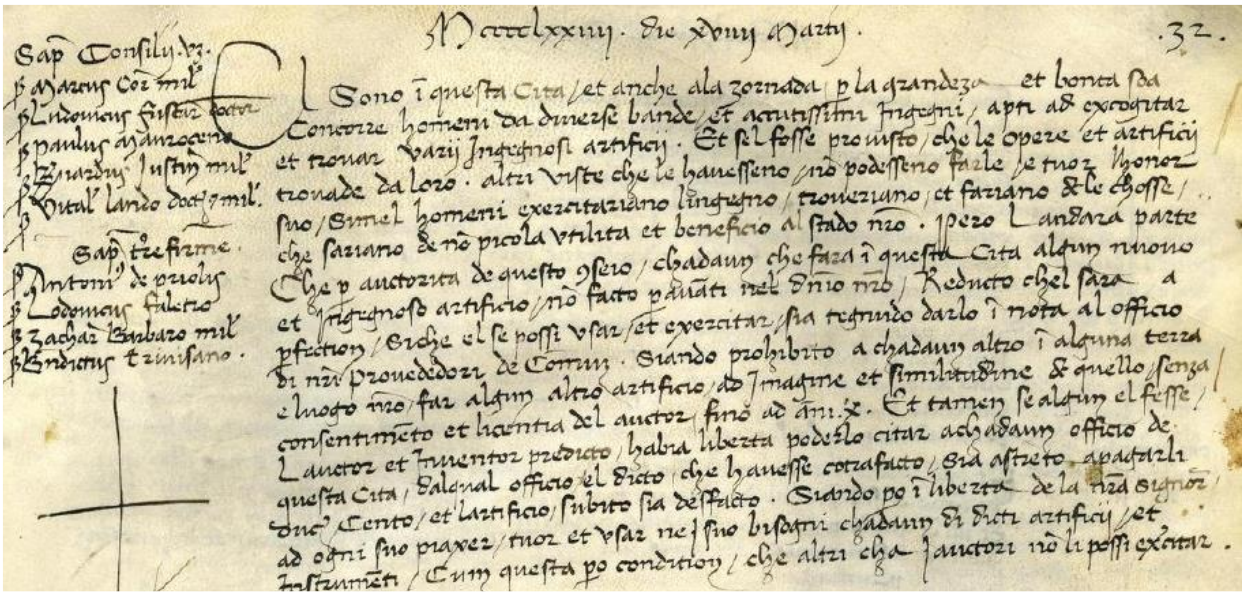
92 ·····▪ Carbon-metal bond

93 ·····▪ Group VIII transition metal (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)

APPENDIX C

The Venetian Patent Statute of 1474

(English translation on the next page)



"**C***i sono in questa città, e vi soggiornano temporaneamente a causa della sua grandezza e bontà, unonimi di diversi Paesi, che hanno uno spirito acuto, capaci di pensare e di trovare ogni specie di ingegnose invenzioni. E se si facesse si che il loro lavoro e le loro invenzioni, chiunque le vedesse, non le potesse fare e prendersene merito, questi unomini eserciterebbero il loro talento, e inventerbbero e farebbero cose che sarebbero di non piccola utilità e beneficio per il nostro Stato.*

P*er questo si decide, per autorità di questo Consiglio, che chiunque farà in questa città alcuna nuova e ingegnosa invenzione, mai eseguita prima del nostro territorio, appena essa sarà perfezionata in modo da poterla usare ed esrcitare, sarà tenuto a darla in nota all Ufficio dei nostri Provveditori al Comune. E sia proibito ad ognuno, in qualsiasi nostro territorio, di fare alcuna invenione a immagine e somiglianza di quello, senza il consenso e la licenza dell autore, e questo per 10 anni.*

E *tuttavia se qualcuno lo facesse, linventore o autore suddetto avrà la libertà di poterlo citare a qualsiasi Ufficio di questa Città, dal quale Ufficio it contraffattore sarebbe obbligato a pagargli cento duacati e linvenzione distrutta immediatamente.*

P*ur rimanendo libera la nostra Signoria, a suo piacimento, di prendere ed usare per le sue necessità qualunque di dette invenzioni o strumenti, a condizioni però che nessuno oltre gli autori possa esercitarli"*

There are in this city, and there remain temporarily because of its greatness and plenty, keen-spirited men of different nations with the ability to think up and create every kind of ingenious inventions. And if it were arranged so that their work and their inventions could not be made and claimed by others, these men would exercise their talents and invent things of great use and benefit to our country.

Therefore, it is decided, by authority of this Council, that whomever shall, in this city, invent something new and ingenious, never before seen in our territory, once perfect in such a way as to rent it usable, shall be asked to notify our Office of Public Works. It shall then be prohibited, in any and all parts of our territory, to invent or create anything similar to said invention, without the consent of the author, for 10 years.

Nevertheless, should someone do so anyway, then the inventor or author shall be free to sue before any public office of this city, and such office shall oblige the counterfeiter to pay the inventor 100 ducats and shall have the invention immediately destroyed.

The Council remains free to take and to use for its own needs and its pleasure any of the above-mentioned inventions or instruments, providing that no one other than the author shall operate them.

APPENDIX D

HOW DO YOU TELL AN INVENTION FROM A NON-INVENTION?

Not easily! In fact, often with great difficulty. Here are some imperfect guidelines:

You have just done something that is useful. This useful thing should be something that does something in a different way and that leads to a beneficial result.

For example:

(i) You have produced a new product – it can be a new compound, a new formulation, a new device, a new delivery system, something that previously didn't exist (even if it's no better (or even worse) than existing equivalent products);
(ii) You have devised a new process that allows things better to be made or utilised, e.g., more cheaply/more quickly/less wastefully/better quality;
(iii)You have discovered a new use for a known material, e.g., that a material known to be useful in rocket fuel is an effective cancer treatment.

As mentioned in the main text, some countries have specific prohibitions (e.g., the EPO doesn't allow the patenting of computer programs *per se*).

Big Question No.1; NOVELTY, or, HAS ANYONE EVER DONE EXACTLY THAT BEFORE?

Novelty can only be destroyed if all the features of your invention can be found explicitly within one single document (if that document refers to another document, this second document is also included). This document is then an "anticipation".

The disclosure must be explicit. I once opposed a patent in which a combination of ingredients was in amorphous form. As an anticipation, I produced a document in which that combination of ingredients was melted and then poured into cold water. Now it is clear in what form the result would be, but the Office wouldn't allow it as an anticipation.

Novelty can mean different things in different places. For example, under European patent law, the use of a chemical in auto coolant as a corrosion inhibitor is considered novel, even if the use of the same chemical in the same proportion in auto coolant was already known as a lubricant (for the water pump). NOT IN THE USA. Under US law, this is considered to be a "mere discovery" of an effect that was already there.
.
So, how do you find out whether it's novel? You may already know much about the "prior art", that is, everything in the relevant technical field that was made public prior to your invention, but there will always be things that you don't know. So, you need a search of the prior art. See your patent attorney for this.

No search can ever be perfect and you will not get everything relevant that's out there, if only because there are records that you can't search. For example, patent applications are published 18 months after filing, so, if someone else files a patent application on "your" invention the day before you do, you won't find out about it for 18 months. Unfortunately, there's nothing you can do about this – thankfully, it doesn't happen very often, but it does happen – but it's a risk you can live with.

So, if you think you have novelty, that's the time to talk to your patent attorney.

There's a subset worth considering:

Selections

Sometimes you may find that what you want to do falls within the claims of an earlier patent. End of story? Not necessarily. You may still be able to get a patent if the following things apply:

(1) What you want to do is not specifically described; and
(2) What you want to do has unexpectedly better properties than those described.

This then is a basis for what's known as a "selection patent". Your selection patent will be dominated by the earlier patent, i.e., you can't work your patent without the permission of the owners of the earlier patent **BUT** they can't work your process without your permission, because they didn't discover it. And if you've made a valuable discovery, you can make a deal.

A real-life example. A Japanese company had made herbicides A-Z and specifically described A, B-G, K and T. The herbicides were described as being generally useful against weeds in crops. Along came an Australian company, which claimed herbicides M-R and stated that they were wheat-selective, i.e., they killed everything but wheat. You can imagine the potential for this in wheat-growing countries. And the Japanese couldn't touch it. So the Japanese company and the Australian company licensed each other under their respective patents and both worked the market and kept everyone else out.

Big Question No.2; INVENTIVENESS, or WHAT IF THE PRIOR ART DISCLOSES SOMETHING THAT ISN'T IDENTICAL, BUT THAT IS VERY CLOSE TO WHAT YOU'VE DONE?

Rejoice! It is not your job to decide this, but your attorney's. Because this is where things become really murky, especially under US law. You have now moved from the realm of "novelty" into that of "non-obviousness" or "inventiveness". Basically, if the skilled person of your competitor would have found it obvious to do what you've done, using the normal skills of the art, you don't have an invention. My previous example of the melted composition would be a case of obviousness.

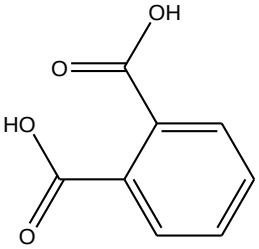
However, the boundaries are very vague indeed – where does obviousness end and inventiveness begin? It all depends on the circumstances of the individual case, but, as I say, this is the attorney's job to decide this.

An example of an obvious improvement from real life (the subject of an old British court case): a drive train in which a mechanical coupling is replaced by a hydraulic coupling, when the general knowledge of the art recognised that such a substitution would be straightforward and would work, even though nobody had ever done it before.

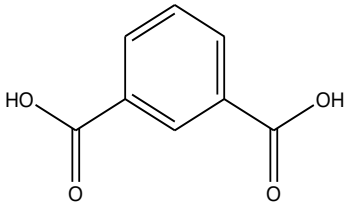
In the chemical world, things have become more murky. Once upon a time, if a methyl group in a pharmaceutical substance were replaced by an ethyl group, and the new compound also had pharmaceutical effects, it could be argued that this was inventive – after all, such materials interact with complex natural systems, and a minor change may produce a major effect. Moreover, the fact that such an apparently obvious substitution had never been made and utilised may indicate a bias in the art against any such modification. However, more and more patent offices have discovered the "obvious to

try" argument – this says that the skilled person would naturally try simple substitutions in the expectation that they could work. This can usually only be overcome by showing (with evidence) that the new material has surprisingly different or better properties.

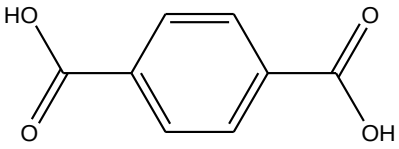
Things were simpler in the past. At Du Pont in the 1920s, Wallace Carothers wrote the book on polyamides and their use in artificial fibres ("Nylon") (see p.23). If fibres could be formed from polyamides (reaction products of diamines and dibasic acids), it followed that polyesters (reaction products of diols and dibasic acids) should also be possible. The appropriate acid was thought to be phthalic acid, which comes in three varieties:



ortho-phthalic acid



m-phthalic acid



p-phthalic acid

The Carothers team tried *o*-phthalic acid, the most common, and when that failed, *m*-phthalic acid. At this point, the nylon work was proving very interesting and Carothers decided that polyesters weren't worth it. It would have seemed an obvious thing to try *p*-phthalic acid (terephthalic acid), but such was the authority of Carothers in the field that nobody tried until much later. Du Pont was beaten to the punch by Manchester's Calico Printers Association, which used the terephthalic acid to produce polyethylene terephthalate (PET), sold as a fibre by ICI under the trade mark "Terylene". And DuPont had to license the technology.

What if Calico Printers Association had tried the same thing today? Would it have been denied a patent because it was "obvious to try" the terephthalic acid and DuPont have been able to use the "Terylene" technology free from hindrance and dominate the artificial fibres industry completely? Probably not; the authority of Carothers and the fact that the terephthalic acid actually worked would probably have done the trick. But Calico Printers would have had to fight a lot harder for it.

MORAL OF THE STORY

If you have novelty, and there are no other conflicting considerations (e.g., you give away more than you protect), it is always worth filing. You just never know what a patent office will let through. You might suspect that it's not inventive, but a patent office might see things otherwise – so why do the patent office's job for it? And if you get grant, even if your patent isn't worth the paper it's printed on, it is still a granted patent and your competitors will have to think carefully before ignoring it. In such cases, I like to think

WHEN IN DOUBT, McDONALDS!

No, nothing to do with hamburgers, a reference to an old Australian decision *McDonald v. The Commissioner of Patents*, in which, in a slightly different context, the court held

"A scintilla of invention can save a patent"

So, if you have a scintilla, go for it.

However, patenting can be expensive, and only you can decide on the cost/benefit aspects.

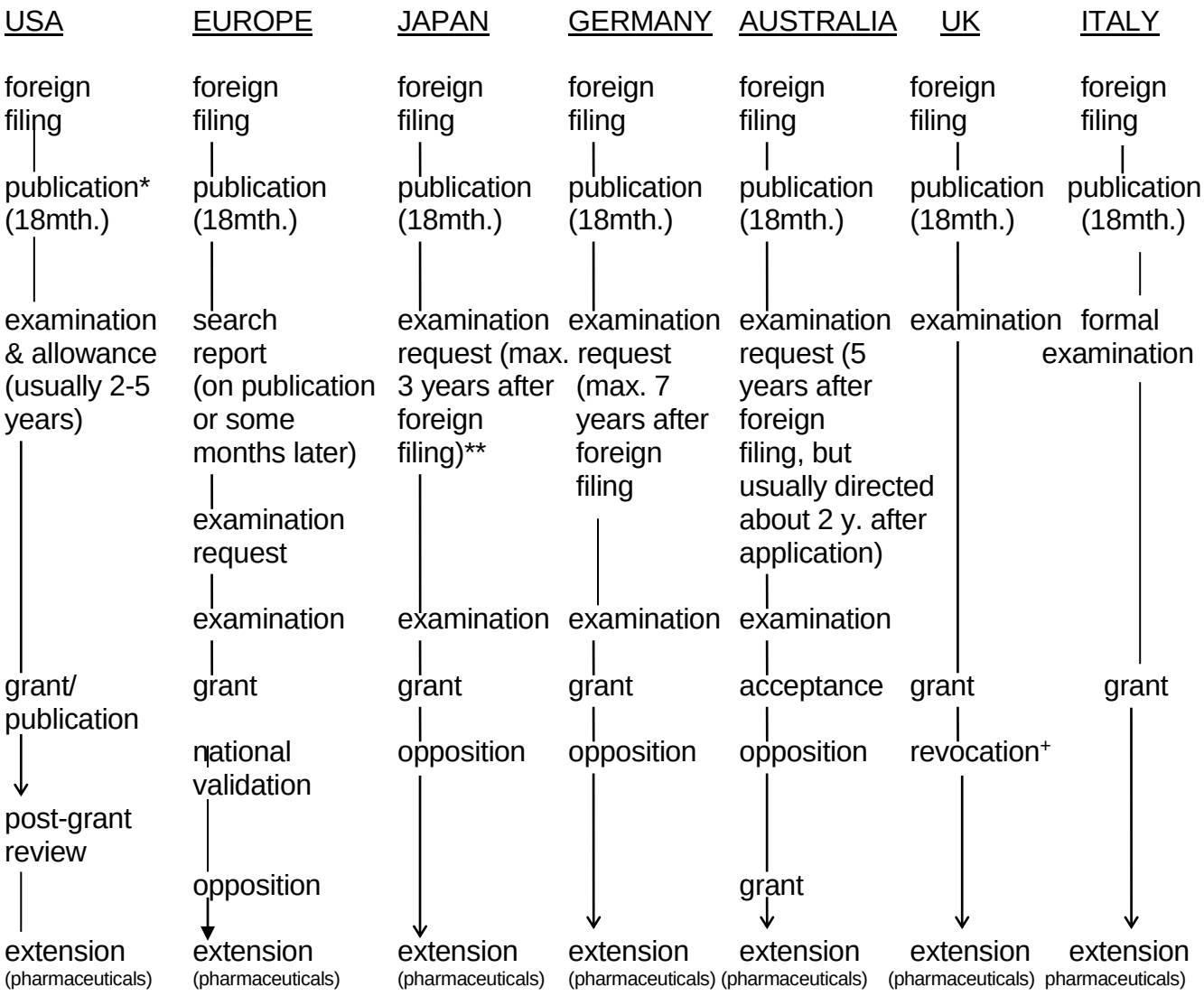
APPENDIX E

Typical Stages in Patenting

(not all patent offices have them all)

Priority filing
Foreign filing
Early publication
Examination
Acceptance
Opposition
Grant
Renewal
Extension (pharmaceuticals only)

What actually happens in various countries...



* US applications filed in the USA only can avoid this publication and be published for the first time at grant

** The previous Japanese 7 year maximum examination period still applies in some older cases.

\+ May be held before the Patent Office or a court.

APPENDIX F

SUPRA-NATIONAL ARRANGEMENTS

PATENT COOPERATION TREATY
(155 COUNTRIES (Apr.2022))

~ 12 MTH. FROM PRIORITY
INTERNATIONAL APPLICATION
NOMINATING DESIRED COUNTRIES

↓

INTERNATIONAL SEARCH + PRELIM. PATENTABILITY REPORT.

~18 MTH. FROM PRIORITY
INTERNATIONAL PUBLICATION

↓

INTERNATIONAL* PRELIMINARY EXAMINATION

↓

30 MTH**. FROM PRIORITY, FILE IN PATENT OFFICES OF NOMINATED COUNTRIES

↓

NATIONAL/REGIONAL*** EXAMINATIONS/GRANTS/ PATENTS

***** optional
** in some (very few) countries only possible with IPE and old 20/21 month deadline still applies
*** can include EP and Eurasian applications

EUROPEAN PATENT CONVENTION
(43 COUNTRIES[+] (1.Mar 2018))

~ 12 MTH. FROM PRIORITY
EUROPEAN APPLICATION DESIGNATING DESIRED COUNTRIES[+]

↓

SEARCH

↓

~ 18 MTH. FROM PRIORITY
PUBLICATION OF APPLICATION

↓

PUBLICATION OF SEARCH REPORT (USUALLY, BUT NOT ALWAYS, WITH APPLICATION)

↓

6 MTH. FROM PUBLICATION OF SEARCH, REQUEST EXAMINATION

↓

EXAMINATION

↓

GRANT

↓

[OPPOSITION]

↓

VALIDATION OF EUROPEAN PATENTS IN DESIGNATED COUNTRIES[++]

[+] 39 Contracting States,
1 Extension state,
Morocco, Moldova and Cambodia
[++] if 7 country designation fees paid, all countries deemed covered
[+++] not all originally designated countries need be selected

EU UNITARY PATENT
(CURRENTLY 17 EU COUNTRIES)

↓

AS PER EPC

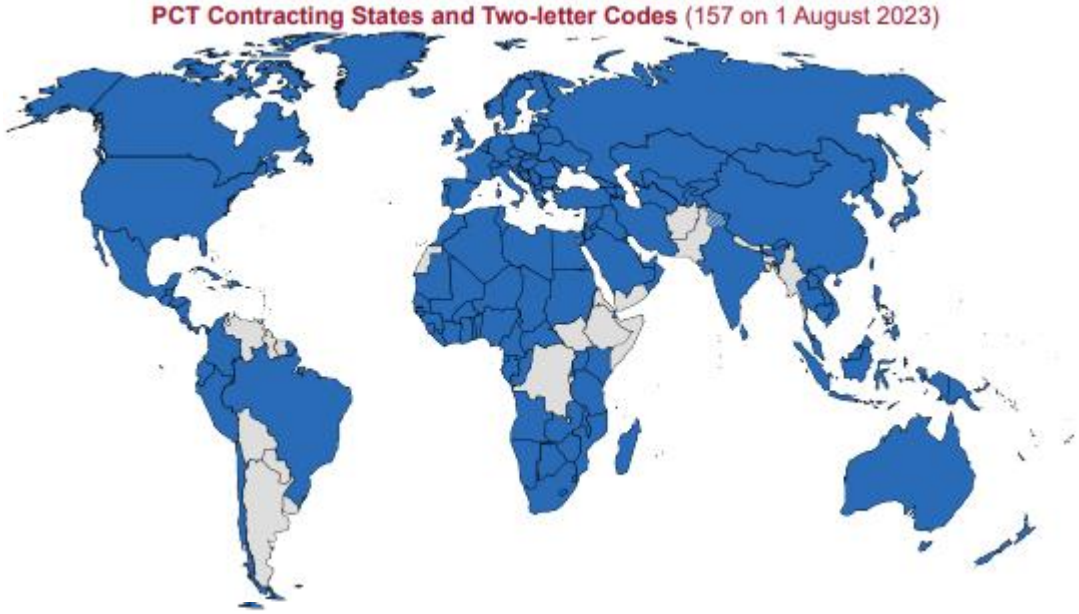
↓

ON VALIDATION, UNITARY PATENT POSSIBLE AS SINGLE VALIDATION FOR STATES THAT HAVE SIGNED UP FOR IT (OPTIONAL – CAN STILL OPT FOR INDIVIDUAL COUNTRY VALIDATION)[+]

[+] non-EU contracting states (e.g., Switzerland, Turkey, UK) will need to be validated nationally in the usual EP manner

17.Dec.23

APPENDIX G



AE United Arab Emirates
AG Antigua and Barbuda
AL Albania (EP)
AM Armenia (EA)
AO Angola
AT Austria (EP)
AU Australia
AZ Azerbaijan (EA)
BA Bosnia and Herzegovina[1]
BB Barbados
BE Belgium (EP)[2]
BF Burkina Faso (OA)[2]
BG Bulgaria (EP)
BH Bahrain
BJ Benin (OA)[2]
BN Brunei Darussalam
BR Brazil
BW Botswana (AP)
BY Belarus (EA)
BZ Belize
CA Canada
CF Central African Republic (OA)[2]
CG Congo (OA)[2]
CH Switzerland (EP)
CI Côte d'Ivoire (OA)[2]
CL Chile
CM Cameroon (OA)[2]
CN China
CO Colombia
CR Costa Rica
CU Cuba
CV Cabo Verde (AP)
CY Cyprus (EP)[2]
CZ Czechia (EP)
DE Germany (EP)
DJ Djibouti
DK Denmark (EP)
DM Dominica
DO Dominican Republic
DZ Algeria
EC Ecuador
EE Estonia (EP)
EG Egypt
ES Spain (EP)
FI Finland (EP)
FR France (EP)[2]
GA Gabon (OA)[2]
GB United Kingdom (EP)
GD Grenada
GE Georgia
GH Ghana (AP)
GM Gambia (AP)
GN Guinea (OA)[2]
GQ Equatorial Guinea (OA)[2]
GR Greece (EP)[2]
GT Guatemala
GW Guinea-Bissau (OA)[2]
HN Honduras
HR Croatia (EP)
HU Hungary (EP)
ID Indonesia
IE Ireland (EP)[2]
IL Israel
IN India
IQ Iraq
IR Iran (Islamic Republic of)
IS Iceland (EP)
IT Italy (EP)[3]
JM Jamaica
JO Jordan
JP Japan
KE Kenya (AP)
KG Kyrgyzstan (EA)
KH Cambodia[4]
KM Comoros (OA)[2]
KN Saint Kitts and Nevis
KP Democratic People's Republic of Korea
KR Republic of Korea
KW Kuwait
KZ Kazakhstan (EA)
LA Lao People's Democratic Republic
LC Saint Lucia
LI Liechtenstein (EP)
LK Sri Lanka
LR Liberia (AP)
LS Lesotho (AP)
LT Lithuania (EP)[2]
LU Luxembourg (EP)
LV Latvia (EP)[2]
LY Libya
MA Morocco[4]
MC Monaco (EP)[2]
MD Republic of Moldova[4]
ME Montenegro (EP)[2,5]
MG Madagascar
MK North Macedonia (EP)
ML Mali (OA)[2]
MN Mongolia
MR Mauritania (OA)[2]
MT Malta (EP)[2]
MU Mauritius
MW Malawi (AP)
MX Mexico
MY Malaysia
MZ Mozambique (AP)
NA Namibia (AP)
NE Niger (OA)[2]
NG Nigeria
NI Nicaragua
NL Netherlands (EP)[2]
NO Norway (EP)
NZ New Zealand
OM Oman
PA Panama
PE Peru
PG Papua New Guinea
PH Philippines
PL Poland (EP)
PT Portugal (EP)
QA Qatar
RO Romania (EP)
RS Serbia (EP)
RU Russian Federation (EA)
RW Rwanda (AP)
SA Saudi Arabia
SC Seychelles
SD Sudan (AP)
SE Sweden (EP)
SG Singapore
SI Slovenia (EP)[2]
SK Slovakia (EP)
SL Sierra Leone (AP)
SM San Marino (EP)[2]
SN Senegal (OA)[2]
ST Sao Tome and Principe (AP)
SV El Salvador
SY Syrian Arab Republic
SZ Eswatini (AP)[2]
TD Chad (OA)[2]
TG Togo (OA)[2]
TH Thailand
TJ Tajikistan (EA)
TM Turkmenistan (EA)
TN Tunisia[4]
TR Türkiye (EP)
TT Trinidad and Tobago
TZ United Republic of Tanzania (AP)
UA Ukraine
UG Uganda (AP)
US United States of America
UZ Uzbekistan
VC Saint Vincent and the Grenadines
VN Viet Nam
WS Samoa
ZA South Africa
ZM Zambia (AP)
ZW Zimbabwe (AP)

1 Extension of European patent possible.
2 May only be designated for a regional patent (the "national route" via the PCT has been closed).
3 Italy may be designated for a national patent only in international applications filed on or after 1 July 2020.
4 Validation of European patent possible.
5 For international applications filed before 1 October 2022, only an extension of a European patent is possible (there is no national phase before the Intellectual Property Office of Montenegro). International applications filed on or after 1 October 2022 will include the designation of Montenegro for a European Patent.

Countries that are not PCT Contracting States, and which therefore need national applications at foreign filing time:

- Afghanistan

17.Dec.23

- Andorra
- Argentina
- Bahamas
- Bangladesh
- Bhutan
- Bolivia (Plurinational State of)
- Burundi
- Cape Verde
- Democratic Republic of the Congo
- Djibouti
- Eritrea
- Ethiopia
- Fiji
- Guyana
- Haiti
- Holy See*
- Kiribati
- Lebanon
- Maldives
- Marshall Islands
- Micronesia (Federated States of)
- Myanmar
- Nauru
- Nepal
- Pakistan
- Palau
- Paraguay
- Solomon Islands
- Somalia
- South Sudan
- Suriname
- Timor-Leste
- Tonga
- Tuvalu
- Uruguay
- Vanuatu
- Venezuela (Bolivarian Republic of)
- Yemen

*The Holy See has no patent law, but is covered by Italian patent law.

APPENDIX H

SOME EXAMPLES OF LETTERS PATENT

Europäisches Patentamt | European Patent Office | Office européen des brevets

Urkunde Certificate Certificat

Es wird hiermit bescheinigt, daß für die in der Patentschrift beschriebene Erfindung ein europäisches Patent für die in der Patentschrift bezeichneten Vertragsstaaten erteilt worden ist.

It is hereby certified that a European patent has been granted in respect of the invention described in the patent specification for the Contracting States designated in the specification.

Il est certifié qu'un brevet européen a été délivré pour l'invention décrite dans le fascicule de brevet, pour les Etats contractants désignés dans le fascicule de brevet.

Europäisches Patent Nr. **European Patent No.** **Brevet européen n°**

Patentinhaber 1399034 **Proprietor of the Patent** **Titulaire du brevet**

Givaudan SA
Chemin de la Parfumerie 5
1214 Vernier-Genève/CH

Alain Pompidou

Präsident des Europäischen Patentamts
President of the European Patent Office
Président de l'Office européen des brevets

München, den
Munich,
Fait à Munich, le 28.09.05

EPA/EPO/OEB Form 2031 06.05

PA-2344

特　許　証
CERTIFICATE OF PATENT

特許第３２９７４０８号
(PATENT NUMBER)

発明の名称(TITLE OF THE INVENTION)

メチルシクロテトラデカ－５－エン－１－オン類

特許権者(PATENTEE)

スイス国　ベルニエ　－　ジュネーブ、シユマン　ド　ラ　パルフュムリ　５
国籍　スイス連邦
ジボーダン　ルール　（アンテルナシヨナル）ソシエテ　アノニム

発明者(INVENTOR)

ダニエル　ヘルムリンガー

ゲオルク　フラター

ウルス　ミュラー

出願番号(APPLICATION NUMBER)　平成１１年特許願第２４８８８４号

出願年月日(FILING DATE)　平成１１年　９月　２日(September 2, 1999)

この発明は、特許するものと確定し、特許原簿に登録されたことを証する。
(THIS IS TO CERTIFY THAT THE PATENT IS REGISTERED ON THE REGISTER OF THE JAPAN PATENT OFFICE.)

平成１４年　４月１２日(April 12, 2002)

特許庁長官(COMMISSIONER, JAPAN PATENT OFFICE)

及川耕造

The United States of America

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

Director of the United States Patent and Trademark Office

证书号第249727号

发明专利证书

发明名称：含后的混合物的芳香组合物

发明人：马库斯·高奇；琼-皮埃尔·巴克丝

专利号：ZL 01 1 23364.8

专利申请日：2001年7月20日

专利权人：吉沃丹股份有限公司

授权公告日：2006年2月8日

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局长 田力普

中华人民共和国国家知识产权局

2006年2月8日

第1页(共1页)

Instituto Mexicano de la Propiedad Industrial

TÍTULO DE PATENTE NO. 216998

Titular(es): GIVAUDAN SA

Domicilio(s): Chemin de la Parfumerie 5, CH-1214, Vernier, SUIZA

Denominación: 2,3-DIHIDRO-1H-5, 9-DIOXACICLOHEPTA [f] INDEN-7-ONAS 1, 2-SUSTITUIDAS Y BENZO [b] [1, 4] DIOXEPIN-3-ONAS 7-SUSTITUIDAS

Clasificación: Int.Cl.7: A61K7/32; C07D321/10; C11B9/00

Inventor(es): PHILIP KRAFT

SOLICITUD

Número:	Fecha de presentación:	Hora:
PA/a/2001/002811	16 de marzo de 2001	16.18

PRIORIDAD

País:	Fecha:	Número:
CH	23 de marzo de 2000	2000 0557/00

ESTA PATENTE CONCEDE A SU TITULAR EL DERECHO EXCLUSIVO DE EXPLOTACIÓN DEL INVENTO RECLAMADO EN EL CAPÍTULO REIVINDICATORIO Y TIENE UNA VIGENCIA IMPRORROGABLE DE VEINTE AÑOS CONTADOS A PARTIR DE LA FECHA DE PRESENTACIÓN DE LA SOLICITUD.

Fecha de expedición: 17 de octubre de 2003

EL DIRECTOR DIVISIONAL DE PATENTES

QUIM. FABIAN R. SALAZAR GARCÍA

APPENDIX I

Philip Grubb's classic rhyming application (in ICI filing format)

COMPLETE SPECIFICATION

TITLE: A useful title is not lacking;

Try: "PLASTIC FILM WITH FABRIC BACKING"

INVENTOR: The inventor, as you may well guess,

Is MARGARET LILIAN STEEL, no less.

SUMMARY: Films with woven fabric back

Tear-resistance often lack.

But if the plastic film should bear

Non-woven backing, it won't tear.

MERIT NOTE:

The concept's elegant and new,

And might make lots of money, too.

To state its faults, though, I'll not shirk

It has just one - it doesn't work.

This invention relates to a structure
Of the flexible laminate kind
Where a sheet or a film made of plastic
With a fabric or web is combined.

It is known to provide such a structure
Where the fabric is woven, and stuck
To the film with a glue or a binder
Which will hold them together, with luck.

A weakness of this type of system
Is that it is easy to tear
Especially so if the plastic
Itself must be handled with care,

We have found, if a non-woven fabric
Replaces the woven cloth plies,
To tear it is very much harder -
A finding which causes surprise.

In accord with the present invention
A flexible sheet we provide
Comprising a film made of plastic
With a non-woven web on one side.

The film may comprise thermoplastic
Like polythene or PVC
But preferably cellulose acetate
Or "Melinex" (stretched PET).

These have numerous packaging uses
(The reason that they're the ones picked)
But they both may be torn rather easily
Especially if cut, notched or nicked.

The fabric may use any fibres
As a well-bonded mat or a felt
And the film may be stuck by adhesive
Applied in solution or melt.

When Melinex film must be bonded,
The glue with the optimum score
Is described in our own British Patent
Number 1 186 514.

An alternative method of bonding
Is to melt the film, press it and cool
Or else make it tacky with solvent,
A simple affair, as a rule.

Non-wovens are usually shoddy -
Their strength is quite run-of-the-mill;
But recently-made ones are better
Like "melded" and "heterofil".

The former have neighbouring fibrils
Which are melted together by heat
The latter use composite fibres -
A marvellous technical feat.

Both types may be fixed to the plastic
By melting the fibres beneath.
On heterofil fibres, such melting
May be wholly confined to the sheath

And to be diabolically clever,
We make fibres with nylon as core
And a sheath of a good melt adhesive
Like the one we have mentioned before.

The number of layers in such structures
Of course, may be greater than two.
You may add extra sheets, foam or metal -
Whatever seems useful to you.

The structures may find applications
As containing or packaging means
For instance, as liners for tankers
Or flexible barrier screens.

Having stated what our game is,
We now declare that what we claim is:

1. A flexible laminate structure
Comprising a plastic film that
Is bonded, at least on one surface,
To a non-woven fabric or mat.

2. A structure as claimed in claim 1
Consisting of more than two plies
Provided at least one non-woven
Right next to a plastic film lies.

3. A structure claimed in 1 or 2
In which the layers are stuck by glue.

4. A structure claimed in 2 or 1
Where melt heat-sealing has been done.

5. The flexible laminate structure
Of any of claims 1 - 4
Where the non-woven fabric has fibres
Which were spun with a sheath and a core.

6. The structure of 5, where the fibres
Are melted together and fused
And the sheath is a good melt-adhesive
For the plastic which is to be used.

APPENDIX J

Aug. 27, 1968 N. J. WATERBURY 3,398,406

BUOYANT BULLETPROOF COMBAT UNIFORM

Filed Dec. 30, 1965 6 Sheets-Sheet 6

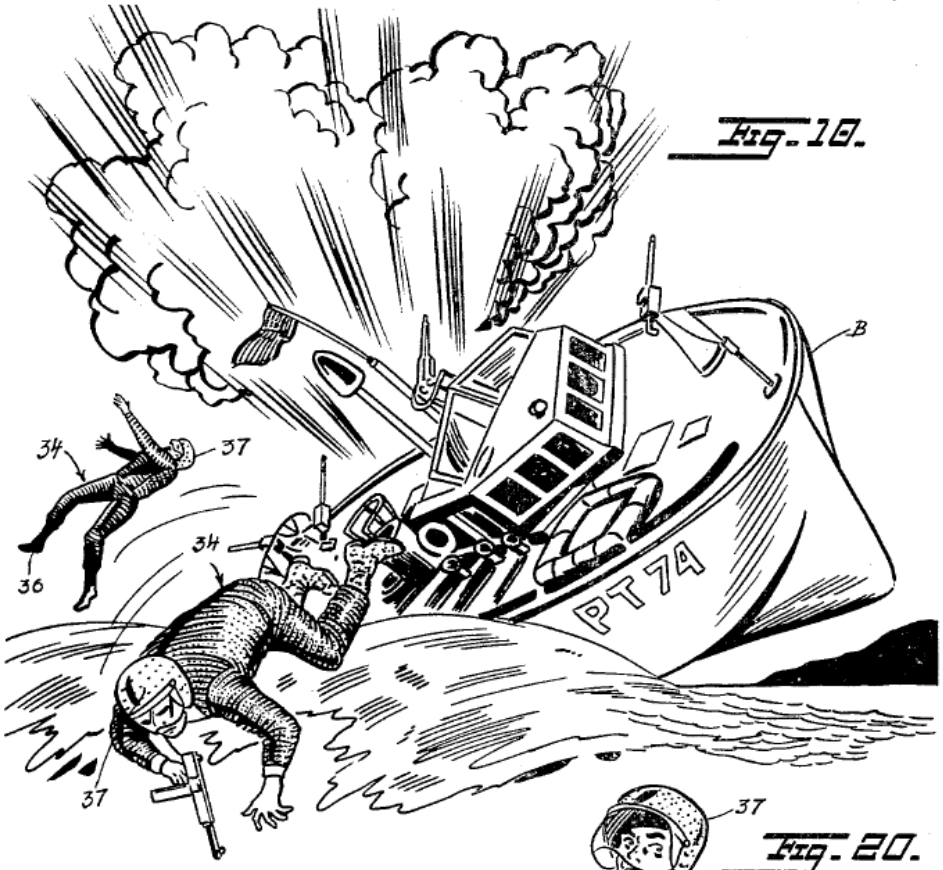


Fig. 18.

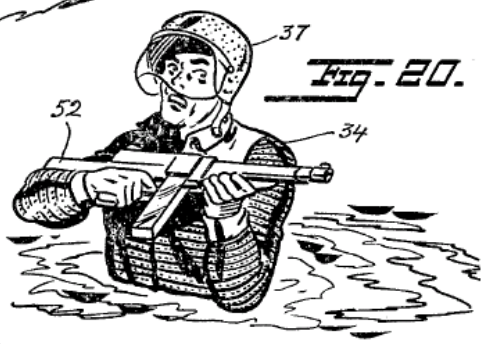


Fig. 20.

Fig. 19.

INVENTOR

NELSON J. WATERBURY

BY Polachek & Saulsbury

ATTORNEYS

PATENT SPECIFICATION (11) 1 426 698

1 426 698

(21) Application No. 17808/74 (22) Filed 23 April 1974

(44) Complete Specification published 3 March 1976

(51) INT CL² G01J 5/46

(52) Index at acceptance

GIX 14

(19)

(54) PHOTON PUSH-PULL RADIATION DETECTOR FOR USE IN CHROMATICALLY SELECTIVE CAT FLAP CONTROL AND 1,000 MEGATON, EARTH-ORBITAL, PEACE-KEEPING BOMB

(71) I, ARTHUR PAUL PEDRICK, British subject, 77 Hillfield Road, Selsey, Sussex, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention is concerned with a device, which will respond with considerable sensitivity to specific intensities of radiant energy to which it may be exposed, and thus may be used for a number of applications in which it is required to carry out an operation in response to specific emissions of the strength of the so called "electromagnetic wave", to which it is directed but, in particular it can be used

(1) To detect the difference in the colour of the fur on the back of a cat wishing to gain entrance to a house by means of a "chromatically selective cat flap", to thus admit to a house a cat which has GINGER fur, but exclude a cat with BLACK fur.

and

(2) To provide, in an Earth Orbital 1,000 Megaton Complete Nuclear Disintegration or "CND" Bomb Automatic Reprisal Satellite Bomb, forming part of an Automatic Response Nuclear Deterrent System, or ARNDS System for short as described in UK Patent No. 1,361,962, means for detecting with certainty, whether a nuclear attack has been made on the surface of the Earth below it, and to determine from which part of the Earth's surface, the attack has originated, to activate a reentry through the air layer to detonate the 1000 Megaton Bomb on that country or state, whose government has originated the Nuclear attack, the purpose of the system being to obtain the release of deuterium and tritium from stocks of thermo-nuclear weapons for peaceful use of the energy therein represented by Einstein's equation $E = mc^2$.

As will be made clear, the radiation sensitive device, according to the invention, depends upon the simple process, which occurs with respect to when light falls on moveable plates in a vacuum as occurs with respect to the plates of the rotor in what is known as a Crooke's radiometer.

In the accompanying drawings:—

Figures 1A and 1B show a well known, and less well known effect of radiation on a Crooke's radiometer.

Figures 2 and 3 give explanation of the above effects.

Figures 4 and 5 show two forms of the "sensitive radiation detector", according to the invention, which, in Figure 4, depends on "photon-push" and in Figure 5 on "photon-pull".

Figures 6 and 7, show application of the radiation detector as in Figures 4 and 5, in a chromatically selective "cat flap" operative to admit a cat of one fur colouration, for example with ginger fur, to a house but effective to exclude a black cat from the premises.

Figures 8, 9 and 10, show applications of the radiation detectors, as in Figures 4 and 5, to the control of a 1000 Megaton Earth Orbital Nuclear Retaliation Satellite, forming part of an Automatic Response Nuclear Deterrent System, intended to obtain the release of the tritium and deuterium in *H* bombs for peaceful use.

Figures 1(A) and (B) are supposed to represent the well known form of a Crooke's radiometer, in the form of a small four bladed motor in an evacuated bulb, the blades having black faces on one side, and silvered, or mirror faces, on the other, as usually illustrated and described in any standard physics book.

It is usually described in the physics book,

APPENDIX K

Deadlines

An incomplete list of what they are, what happens if you miss them and if you can recover from missing them.

Deadline	page	Time	and if I miss it?
Priority year	69	1 year from priority filing	Goodbye priority - only recoverable exceptionally (natural disaster, postal strike)
PCT National Phase entry	76	30/31 mth from priority filing	Sudden death in many cases, with no possible way to continue (e.g. Japan). Some countries allow a grace period (e.g. China 2 mth, Singapore 3 mth). Canada exceptionally will allow an extra 12 months (to 42 months). Some countries, e.g.Brazil. will allow a petition of extenuating circumstances.
Many EPO deadlines	78	Various (e.g., requesting examination, responding to official actions, approving application text for grant and paying fees)	Further processing – the failure to comply is ignored, if applicant responds within 2 months of letter of non-compliance, pays further processing fee (pittance) and completes action. No reasons for missing need be supplied. Applicable to most EPO deadlines (some stated exceptions)
	96	...and if you miss that (also applies to many other EPC deadlines)	*restitutio in integrum* (restoration of rights) – needs a **really** good excuse (must show that it was inadvertent error, which happened in spite of all due care being taken – deciding to abandon and then changing your mind is NOT included)
EPO opposition deadline	90	9 mth from mention of grant in EPO Journal	no extension possible. Moreover, everything (facts, evidence, arguments) must be received by the EPO by that deadline. Later-filed facts, evidence & arguments only exceptionally allowed
Payment of renewal fees	96	Variable, but usually cannot pay too early. Sometimes due on anniversary, sometimes (e.g.EPO) at the end of the month in which it falls due – if that's on a weekend, the next working day, regardless as to whether that's in the next month	Paris Convention allows a 6-month grace period within which to pay renewal fees (with surcharge). *Restitutio*-type provisions (see above) may apply in certain circumstances

Examination request deadlines	85	Varies depending on the office – filing a US application is an automatic request for examination, for Germany must request by 7 years from application (Japan 3 years)	Many countries allow extensions of time (with surcharge)
Response to office actions	86	Very variable, depending on office. The EPO typically sets 4 months, the USPTO 2-3 months. Some countries, e.g. Australia, set an overall time (typically one year from first examination report) by which the application must be in order for acceptance	Again variable e.g., the USPTO will allow you to respond up to three months late, at an increasingly high monthly fee (the last one is murderously high). Extensions are available in many offices. The EPO will give you an extra 2 months on request, no questions asked, but can be sticky if more is requested.
EPO appeal	79	Within 2 mth of decision being appealed, facts, evidence and arguments to be lodged within a further 2 mth	No extension possible
Nearly all USPTO deadlines		variable	generously elastic, but very high extra fees for longer extensions of time.

APPENDIX L

Valuing IP

or, How much is that patent in the window? (Ching! Ching!)

…The one before which rivals quail
How much is that patent in the window?
*I do hope that patent's for sale**

This is one of those infuriating questions that is easy to ask, but difficult to answer, especially by someone like me who knows very little about it. Worse, it is a question to which the answer is being demanded more and more often these days.

The following is an amalgam of bits culled from various sources and is intended only to give an overview as to the methods used for the valuation of IP, and to make clear that this is a complex subject in respect of which expert advice is needed. A list of sources is appended to the end, but these are only part of what appears to be a vast literature on a very topical subject. *Caveat emptor*.

The short version

Valuing IP can be done, but it is a complex, imprecise business, best left to experts, who may also get it completely wrong. The following notes intend only to give a run-down of the sorts of methods used to reach a realistic figure. No one method is completely reliable, and it is advisable to use several different ones. Nevertheless, when an appropriate and rigorous methodology is applied to the valuation of IP, a business has both a better (where "better" = "better than no") idea of its own worth, and a reportable and more transparent indication to the general market and government of its worth.

The long version

When I started in the patent business back when dinosaurs walked the earth, people acquired patents because, well, patents were nice things to have, weren't they? They had pretty seals and they showed just how clever you were. And most senior managers confronted with the letters "IP" assumed that the "O" had been inadvertently omitted (stock market Initial Public Offering). Since then, cold winds have blown through the business world, and the vague, fuzzy, warm feeling towards patents has given way to cold, hard calculation. A big portfolio can swallow enormous amounts of money, and if it isn't doing something in return, it's seriously doubtful whether it's worth retaining.

In addition, new regulation has played its part. In the wake of a number of US financial scandals, the most notorious being the Enron affair, the US Government introduced the *Sarbanes-Oxley* Act. There are also new international accounting standards from the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB).

At the same time, there has been an appreciation of the value of intellectual property as a valuable asset, and there has arisen the need to disclose all asset values in business dealings such as during fundraising, securitisation, mergers and acquisitions, financial reporting and taxation calculations and bank financing. This in turn has led to a need somehow to put a price on IP.

This sounds a bit like Mission Impossible. A patent is a bit of paper giving legal title to an idea. How much is that idea worth? Most companies tend to put the question in the "too hard" basket and to lump the valuation of intangible assets in with the general nebulosity of the business's goodwill. However, the world is moving in a direction in which a proper valuation (or at least a more accurate one) will be expected, even demanded.

* *The fact that the author not only knows of the original song but even remembers Patti Page's original recording is an embarrassing testimony to his extreme antiquity.*

Some companies have started down this road. In the trade marks world, there is published an annual league table of valuable brands. **Coca-Cola** is habitually near the top. Coke's 2012 value, according to industry publication Brand Finance, is of the order of $US 31,082 million. When quizzed on the value of Coke's intangible assets, the Company President stated that, if each building, factory, office, car, truck owned would burn down in a moment, the Company could get back to operational re-building and buying everything lost in 1 year due to the value and profit generated by its intellectual property, namely the income generated by its trademarks, franchise contracts, patents, licences, etc. Coca-Cola is somewhat unique in that nearly the entire value of the Company resides in the name – even if a competitor produced a drink identical to Coca-Cola®, it could not call it Coca-Cola®, and could therefore never benefit from the enormous goodwill in the name. The same could be said of the other Big Brand Boys (Apple, Microsoft, IBM, GE).

So, how does one estimate the value of intellectual property assets? There are two basic approaches, qualitative and quantitative. The former seeks only to assess the relative importance of IP, the latter seeks to put an actual figure on its value.

Qualitative evaluation methods

Qualitative methods provide a value guide for the subject IP through the rating and scoring of different factors related to the IP. These factors or "value indicators" can influence the value of the IP both positively and negatively. In the same way as factors such as location, numbers of rooms, nearby schools etc. affect the value of a house, a combination of these IP related factors acts as a proxy for the value of the IP. Or so the theory goes.

Patent information-related value indicators

In the case of patents, it has been suggested that there is a correlation between patent value and standardised indicators observable in patent information documents. For example, the number of references to prior patents generated during the search and examination process, and the number of citations a patent has received may indicate its importance scientifically and therefore its relative value. The observable result is a network of links called a patent citations network which, some say, is a useful qualitative evaluation tool. Similarly, the number and quality of claims, the patent family size and the outcome of oppositions to the patent application can also be an indication of value. (I personally don't believe a word of it).

Evaluation of value indicators: IPScore

An example of a qualitative valuation method is the IPScore software developed by the Danish Patent and Trademark Office, and now run by the European Patent Office. The IPScore method is used to value technology, patents and patent portfolios internally, within companies. The tool provides a framework for evaluating and strategically managing patents.

http://www.ip-score.com/

http://tinyurl.com/IPScore-EPO

The IPScore assessment of a patent consists of five categories: legal, technology, market, finance and strategy, each of which has 5-10 associated index questions. Each question relates to a different value indicator. Each question is rated 1-5 according to the patents strengths and weaknesses. Together, the value indicators form a whole picture of the patent and its relative risks and opportunities. These are then displayed in various tables and graphical forms to be used by management for making strategic decisions.

Advantages and disadvantages of qualitative evaluation methods

The main advantage of patent information related and non-patent value indicators is their relative simplicity. Once the relevant information has been researched and is available in a useable form, its relatively easily to classify and evaluate the IP without the need for complex methods.

Another advantage is that the data for the evaluation is often publicly available. With sufficient expertise it is possible to value IP belonging to other parties. As a result, these qualitative methods facilitate the comparison and ranking of IP within a company's own portfolio or against competitors' IP.

Valuing IP using patent information related value indicators have many drawbacks. For example, simply counting citations avoids taking a stand on questions such as how and why citations arise and what type of information they convey. Focusing on simple counts deliberately ignores any added information within the network of citations. Using value indicators as a proxy for value is only as useful as the level of expertise of those who are conducting the valuation. One must also decide which indicators are relevant to the value of a particular IP, and which are not. The quality and realism of the qualitative evaluation in IPScore, for example, is greatly dependent on the quality of information used.

When are they used?
Qualitative evaluation methods are most often used for the purpose of internal IP management. They are most useful for comparing, categorising and ranking IP within a portfolio or vis-à-vis competitors' IP. They also provide some guidance for assessing the risks and opportunities of IP.

Quantitative evaluation methods

The fundamental principle of valuation of quantitative methods is the theory that the value of any asset is the present value of the future economic benefits that can be anticipated to accrue to the owner of that asset. Although this statement is widely accepted, there is no universally accepted method of valuation. There are several ways of approaching the problem. None is perfect, and one that works well in one company situation will fall down disastrously in another. The three most commonly encountered are cost-based, market-based and income-based.

Cost-based methods These methods seek to estimate value by estimating the costs of replacing the IP. Such costs typically include development costs, for example, R&D costs and costs of IP protection (such as prosecution costs, renewal fees, etc.). Past costs are adjusted to present value. Approaches include:

- Historic Cost
The historic cost approach measures the costs incurred through the development of the IP, at the time it was developed.

- Replication Cost
The replication cost approach measures the amount of investment needed to develop similar IP, at the present time, in exactly the same way and achieving the same IP as currently exists. The whole cost of research and development must be included in this calculation, including the costs of unsuccessful prototypes etc.

- Replacement Cost
The replacement cost approach measures the amount of money that would be needed to develop the IP as it currently exists, but as the term "replacement" signifies, the costs of failed and unsuccessful research is not included. It is easiest to think of this as measuring the cost of buying the already-developed IP from an external source.

When are they used?
An approach based upon the measurement of cost is generally used in accounting, bookkeeping and in accordance with accounting rules. It is commonly agreed that cost- based methods are only useful for bookkeeping purposes or as a supplement to an income approach (see later). They are only relevant in historical cost-based accounting systems or where taxation methods dictate their use.

Disadvantages of cost-based methods
Where the cost method falls down is (a) calculating the value of income-generating assets, such as a patent bringing in royalties, (b) it considers only cost – no allowance is made for future benefits of the IP, and (c)

there is no direct correlation between cost of development and the future revenue potential of assets. IP that costs the most to produce may not necessarily be the most valuable. The same applies to IP which is many years old and has been written down in value.

Market-based methods These methods attempt to value an intangible asset by comparing it with sales of similar assets (for example, patented technologies of a similar nature and function). They are currently favoured by the international accounting standards boards, and they can be quite effective models in that they represent the 'real' market value of an asset. The idea behind these approaches is that the market decides the accurate price and therefore the value of the IP. Market-based methods include IP auctions, comparable market and comparable royalty rate methods.

- Auction
In a perfect auction, there are many potential buyers with perfect information about all aspects of the IP. The value of the IP is determined by the price reached through bidding.

- Comparable market value
The value of the IP is given by comparison with similar comparable independent IP or similar transactions.

- Comparable royalty rate
Market-based valuation methods may also be based on the comparison of royalty rates used when licensing similar IP. Many sectors often use industry averages as a basis for setting royalty rates in license agreements or in establishing damages in litigation. The value of the IP is given through the comparison of the subject IP with the royalty rates in similar license agreements.

When are they used?
Market-based methods are useful when a market value is required for any given subject IP. These methods require an active market, a comparable exchange of IP between two independent parties and sufficient access to transaction price information. However, there are limited formal markets for IP and the relevant pricing information is not usually public. As a result, the use of the comparable market value approach to valuing IP is rare. The use of comparable royalty rates is more widespread, especially as databases of industry royalty rates and comparable transaction information have been collated by larger IP right-holders and independent companies offering valuation services. Should IP markets become active and public, the use of market-based approaches may become more widespread.

Advantages and disadvantages of market-based methods
Observing the market is a relatively straightforward valuation method. It is useful to check the validity of other approaches.

However, the model relies on accurate and complete (i.e. inside) information concerning the details and nature of other similar transactions – data that is often not available. Errors can arise when this data is estimated. In addition, the uniqueness of IP makes direct comparison difficult. There is a risk of comparing the subject IP with other IP which has been traded but which has still not been utilised to the full extent possible. In these cases the IP can be undervalued. When royalty rates are compared there are also some potential distorting problems. Royalty rates set using returns to R&D costs, return on sales figures or industry averages run the risk of valuing costs or other factors rather than value.

Income-based methods In these methods, the ability of an intangible asset to produce future income is valued, for example, via royalties (through licensing) or via profit (through the sale of a patented article). Examples of methods used include:

- Discounted Cash Flow (DCF)
This is the most fundamental and widespread of the income-based valuation approaches. The DCF approach attempts to determine the value of the IP by computing the present value of future cash flows from the IP

over its useful life. The methods in this category involve evaluating these future cash flows and then discounting them back at a discount rate to achieve a present value.

The two key factors that must be accounted for in a DCF calculation are the time value of money and riskiness of the forecasted cash flows. These are dealt with through the use of a specific discount rate chosen specifically for the subject IP, which accounts for both factors at once. Alternatively, the forecasted cash flows can be adjusted to account for their degree of risk and the change in that over time. These are then discounted at a risk free rate, which accounts for the time value of money. Both versions are widely used.

- Risk adjusted net present value (rNPV)
This approach is an extension of the DCF method, and is mainly used in the pharmaceutical and biotechnology industries. It was specifically developed to deal with technical risk during the development of IP assets, for example medicines. To account for risk, the method adjusts the cash flows of each stage of development by fixed probability rates based on established industry indicators. For example, the statistical probability of successfully competing the first stage of clinical trials may be 20%, second stage 30% and so on. The cash flows are risk-adjusted using these probability rates and discounted as with the DCF method.

- Relief from Royalty
The relief from royalty method measures the royalty that the company would have to pay for licensing-in the IP being valued, from a third-party. The royalty represents the rental charge, which would be paid to the licensor if this hypothetical arrangement were in place. The method assumes that the value of the IP is defined as the rental charge other companies would pay to use it. Estimating this royalty rate is only a first step; a reliable sales forecast is also required in order to estimate the income that flows directly from the IP. As with other income approaches, the royalty rates are then discounted through an appropriated discount rate.

- Technology Factor method
The technology factor method firstly calculates a risk-free net present value for the IP (similar to the DCF method) and multiplies this with a risk-factor, or “technology factor”. The technology factor value is worked out from attributes reflecting the commercial strengths and weaknesses of the IP. The aim is to account for technical (in the case of technology), legal, market and economic risks related to the IP being valued.

<u>When are they used?</u>
Income approaches to IP valuation are only accurate if the following variables are available or can be accurately estimated: an income stream either from product sales or license of the IP, an estimate of the duration of the IP’s useful life, an understanding of IP specific risk factors for incorporation into thevaluation and a valid discount rate.

<u>Advantages and disadvantages of income based methods</u>
The advantage of these methods is that it is relatively simple to assess the value on the basis of the conditions set up. With the likely availability of many of the required inputs from the firm’s financial statements and market information it may be possible to identify and or forecast particular cash flows.

The methods are conceptually robust but can prove difficult to implement in high-uncertainty environments. This task always includes some uncertainty and subjective assumptions. A significant disadvantage of these methods is that both uncertain and distant cash flows and the discount rate have to be estimated. For example, there is rarely an experience base when estimating the market potential and therefore cash flow of early stage IP developments. What happens if the bottom drops out of the market for a particular patented product? Or if a patent for a desirable product is invalidated, thus allowing every competitor to make it at a reduced cost (not having to do all the R&D of the originator)? In addition, all risks are lumped together and are assumed to be appropriately adjusted for in the discount rate and the probabilities of success, rather than being dealt with individually (such as legal risk, technological risk etc.).

A significant drawback of the relief from royalty method is that a royalty rate can always be assumed, when in reality it may never materialise. Nevertheless, in specific circumstances this method is useful, especially if there are suitable comparable transactions involving third parties or industry standard royalty rates.

Options-based methods This model is a recent development on the income-based model, and is based on the type of analysis used in pricing financial options. In this case, the value of the intangible asset is related to its investment opportunity in the future. As a result, the options-based model treats the R&D process and the IP thus generated, as an option to be bought or sold at various stages of development, and it allows for the factoring in of the expected costs of developing technology and the expected returns from using it, and takes into account the level of risk associated with a project at various stages.

Options are priced using the Black-Scholes mathematical option-pricing model, which is a mathematical model for the valuation of options. It takes into account the flexibility of future decisions, not available at the time of valuation, such as investment timing, when to patent, abandonment and direction of research.

When are they used?
They are particularly applicable when there is a high degree of uncertainty, some managerial flexibility, and not all the information is known at a particular time. They are increasingly used in the biotechnology and pharmaceutical industries and early stage IP developments.

Advantages and disadvantages of options-based methods
The primary advantage of the real options method is that it incorporates the value associated with the uncertainty and accounts for the flexibility inherent in the development of IP. The value associated with the uncertainty of cash flows and the ability to manage the development of the IP is accounted for. Like the DCF method it values the stream of cash flows but it also accounts for acquired knowledge. As a result, it provides a more complete evaluation than the DCF as it captures more than simply cash flows and static costs.
The main disadvantage of the real options method is the complexity of the model. It is difficult to understand and the evaluation can be costly to perform. Some experts doubt the accuracy of options-based models for use with real investments such as IP. The main arguments are that options-based models over-value IP through the inclusion of non-viable development and commercialisation decisions.

Other variations on the income-based model

These special situations of the income-based model, and all rely on a calculation of cash flow and risk.

Premium profits This method/model (also known as the excess operating profits method) is a specific market-based model. In this method, the value of intangible assets is determined by capitalising the additional profits generated by the business over and above those generated by similar businesses which do not have access to the IP asset. Excess profits can be calculated by reference to a margin differential, or by comparing the return on capital earned by the business owning the property with that earned by companies without such access to the IP asset. Calculated excess operating profits expected to be earned over the life of the intangible asset are then discounted to the present day to arrive at the value. A problem with this model is that the comparative business will have margins and returns on assets attributable to some of its own intangible assets. Similarly, the calculation of the value can be affected if the other business has more efficient production, better marketing or distribution channels, and so on.

Premium pricing This model is a variation on the premium profits method and is typically used to value brands (for example, for consumer products). The value of additional revenue generated by the brand is projected over its life, net of marketing and other brand support costs, and then discounted to the present day. However, it is unlikely that the competing products to which the brand is compared will be unbranded and hence the value derived may be erroneous.

Cost savings This method values the asset by calculating the present value of cost savings the business can expect to make as a result of owning the intangible asset. This method can apply to assets such as trade

secrets (processes and procedures). However, although a business can usually calculate the costs it has saved since introducing the new intangible asset, it may be problematic to derive a true value because a third party may not achieve the same cost savings.

Royalty savings This method is premised on the cost to a business should the business not own the relevant intangible asset. That is, the business would have to license-in that asset, and this would potentially represent an ongoing cost. The value of the intangible asset in question is calculated based on a discounted to the present value of the royalty payment that the business saves by itself owning the asset. However, determining what royalty payment applies can in some cases be problematic (for example, if industry standards are not available).

Some miscellaneous (and far from exhaustive) sources:

"Katonomics 9; IP Valuation"; Nicola Searle
http://tinyurl.com/Katonomics

"Methods of Intellectual Property Valuation"; S. Chaplinsky, University of Virginia Publication UVA-F-1401
http://tinyurl.com/Darden-Va

"Intangible Asset & Intellectual Property Valuation: A Multidisciplinary Perspective"; Paul Flignor & David Orozco
https://www.wipo.int/export/sites/www/sme/en/documents/pdf/ip_valuation.pdf

"Valuation of intellectual property and intangible assets"; Consor Intellectual Asset Management
http://tinyurl.com/Consor-IP

"Intellectual Property; valuation, assessment and audit"; Qasim Zaidi, IIM Lucknow, Noida Campus
http://tinyurl.com/Lucknow-IP

"Intellectual Property Valuation Techniques"; Daryl Martin & David Drews, IPmetrics LLC
http://ipmetrics.net/cmsdocuments/IPVT.pdf

APPENDIX M

An Amateur's Guide to the *America Invents* Act

The USA is the market in which everyone wants to sell. So, no matter how bizarre is its law and practice, everyone has to take notice of it, because it can affect how and even whether one can do business there. US patent law, the result of a violent collision between the Constitution and the British common law that remains the foundation of US law and practice, is especially bizarre. However, many in the US patent profession profess an almost religious faith in the US patent system as THE engine of economic growth.

With the coming completely into force on 16 March 2013 of the Leahy-Smith *America invents* Act, US law appears to have become slightly less bizarre. But only slightly less – there have been a few surprises for the rest of the world as applicants, attorneys, the USPTO and the courts have come to grips with this brave new world. Not surprisingly, one attorney has described it as the "US Attorney Full Employment Act". And some US patent folk, seeing it as an evil plot that disenfranchises small inventors for the benefit of large corporations (especially the Silicon Valley variety), want to turn the clock completely back to the allegedly Good Old Days.

Outlined below are the major changes

"First inventor-to-file" (FITF) priority The USA has finally ended the "first to invent" practice (see p.70), which for so long has been the basis of its priority rules. Essentially FITF is a first-to-file system, just like the rest of the planet.

The change has meant the end of the old interference proceedings (whose function it was to determine who had the right to which part of which invention in the case of overlapping disclosures). This will be replaced by a "derivation proceedings", whose function it will be to determine whether an earlier-applying inventor had in fact derived his or her invention from an inventor who applied later.

Grace period The AIA grace period is less generous than the old one, being restricted to the inventor's own publications or publications derived from him or her (the old one covered <u>any</u> publication by anyone else). A third party, who has invented the invention independently, can publish and this publication will constitute prior art against the inventor's subsequent application. This has caused considerable opposition in the ranks of small inventors, so much so that there is now a bipartisan *Grace Period Restoration Act* (2015), seeking to restore something like the old one. How it will fare remains to be seen.

Prior art The definition of what constitutes prior art has been extended. Previously, the US had "relative novelty", that is, printed publications anywhere in any language were novelty-destroying, but anticipation by use or oral disclosure had to be in the USA. No longer.

The USA still has the one-year grace period, so any use or sale within that period would still not invalidate a patent application. However, if the US inventor had sold overseas prior to the one-year grace period, this sale would be novelty-destroying prior art. Moreover, only material of the inventor, or material derived from him or her, is entitled to the grace period.

In addition, with the new law, the "effective filing date" for the purposes of prior art in the USA, has moved to include unpublished foreign priority filings, regardless of language. (Many applicants used to file US provisional applications as well as their home applications, to ensure as early an effective US date as possible under the old law. This is no longer necessary).

It should be remembered that, unlike most countries in which "intermediate citations" (prior art filed before, but published after, the application) are citable only for novelty purposes, the US can cite them for both novelty and inventiveness, that is, it can combine these unknown and unknowable documents with known documents to construct inventiveness arguments. (See pp.32-35).

Prior user rights defence Previously, prior user rights were confined to business method patents. The AIA has expanded it to all fields. This means that someone who was secretly using a process that was later patented by someone else has a prior use defence against that later patentee (this was not previously the case). However, there are limitations:

(a) the user must have been using the invention for at least one year prior to the patent filing date;
(b) the user cannot license, assign or transfer the defence, except as part of the assignment or transfer of the entire business to which the defence relates;
(c) the defence is geographically limited to cover only those sites where the invention was used before the critical date; and
(a) it is not available for patents owned by or assigned to universities or affiliated technology transfer organisations.

Opposition proceedings One of the bugbears of the US system has been that there was no scope for opposition (invalidating a US patent via a relatively inexpensive patent office procedure). Instead, the only previous possibility was revocation by court action, with total costs of typically $US4-5 million.

The AIA introduces a sort-of opposition proceedings, called "post grant review" (PGR). This is really more a sort of mini-court litigation. It will still be expensive, compared to other people's opposition proceedings – the official fees alone will be at least $27,000, with a total cost of perhaps half a million $US. Not cheap, but bargain-basement as opposed to court costs. It is available only for patent applications filed after 16 March 2013.

It has the advantage of being held by the USPTO, whose senior examiners understand the subject-matter, as opposed to the average judge and jury, who may have difficulty even spelling the words. However, it is a quick proceedings (1-1.5 years is envisaged) and it has estoppel (if you lose an aspect of the case in PGR, you are estopped from raising it in later court proceedings). Whether or not you choose will depend on the individual facts of the case. Limited discovery is possible (similar to that available under the now-deceased interference proceedings).

Many in the US patent community regard both the AIA and especially PGR as unmitigated disasters for the inventive community. Here are a couple of specimen opinions from experienced US patent professionals:

http://www.ipwatchdog.com/2016/09/10/america-invents-act-harmed-inventors/id=72551/

http://www.ipwatchdog.com/2016/09/12/constitutional-economic-policy-problems-raised-inter-partes-review-ipr-suggest-congress-consider-acting/id=72673/

http://www.ipwatchdog.com/2016/09/13/how-the-patent-trial-and-appeal-board-harms-inventors/id=72554/

http://www.ipwatchdog.com/2016/09/16/aia-disaster-destruction-innovation-america/id=72890/

One (this one anyway) gets the impression of a hankering for "the good old days", pre-AIA, when all was perfect with US patent law and everything was hunky-dory with small inventors, and now the rug has been rudely yanked from under their feet and all power given to the big corporations. It all smacks a bit of rose-tinted glasses. US litigation has always been expensive and the big guys have always tried to outspend the little guy so that s/he collapses with financial exhaustion.

In a recent development, a challenge to the constitutionality of the PGR provisions was considered by the Supreme Court– the party bringing the action argued that a patent is a "private property right", meaning that a validity case requires a jury trial under the 7th Amendment, not an administrative procedure of the USPTO. This had the potential to undermine the whole edifice of the AIA trial regime. In a 7-2 decision (Chief Justice Roberts and Judge Gorusch dissenting), the court held that the procedure is not unconstitutional. This

decision has had a mixed reception. However, some commentators have pointed out that although the Court held that patents are a franchise, they are still a property right for the purpose of due process. This aspect was not addressed by the Court decision, and it was suggested that the due process aspect was open to challenge. So, we're not quite there yet.

In a further recent development, several new pieces of legislation have been introduced in the USA, which seek to reverse some of the AIA features. An especially big bugbear with many is the loss of first-to-invent. Its reinstatement is part of the recently-announced US Inventor Act. There have also been the STRONG and STRONGER (honestly!) Patents Acts, respectively Support Technology and Research for Our Nations Growth and same again with "and Economic Resilience" tacked on the end. Then there was the Innovation Act and the PATENT (Protecting American Talent and Entrepreneurship) Act. STRONG has already died; it remains to be seen whether any of the others will be any, er, stronger.

The latest (July 2018) is the *Restoring American Leadership in Innovation Act*. This intends to change major aspects of the AIA; it proposes the scrapping of post-grant review and the hated PTAB (Patents Trial and Appeal Board, the USPTO tribunal that hears PGR applications. It would also take the USA back to the old first-to-invent priority system and modify the definition of invention, so that currently disallowed inventions would become allowable. Whether this would in fact restore American leadership in innovation is highly questionable, but, as mentioned above, a substantial proportion of the US patent profession inhabits a strange cloud-cuckoo land in which everything pre-AIA was positively Garden of Edenish until the USPTO bit the fruit marked AIA. One (this one anyway) suspects that this is a gross oversimplification of the reason why American innovation has slipped. Chances of successful passing? Not great, I suspect.

APPENDIX N

The European Unitary Patent (EUP) and the Unified Patents Court (UPC)

There were many unknowns in this particular equation, but it now turns out that the light at the end of the tunnel was indeed the end of the tunnel and not, as previously thought, a train coming in the opposite direction. The combination of post-Brexit UK saying it won't participate and the blocking of German ratification by a constitutional challenge (followed by a further constitutional challenge after the Bundestag (German Parliament) had amended to overcome the previous challenge) had cast considerable doubt as to whether the thing would ever get off the ground.

However, the German Constitutional Court rejected the most recent preliminary injunctions., and the German President ratified the legislation on 7 August 2021. Austria deposited its instrument of ratification on 18 January 2022, thus triggering the Provisional Application Phase (recruitment of judges, establishment of Case Management System, establishment of rules of procedure). Germany deposited its ratification on 17 February 2023, and this has triggered the three-month countdown until the UPC commenced activities on 1 June 2023. To date, over 100n cases have been heard, most of them in the German courts, especially Munich.

To date, Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovenia and Sweden have ratified. Cyprus, Czech Republic, Greece, Hungary, Ireland, Romania and Slovakia have signed, but have yet to ratify. Spain, Poland and Croatia are staying out. The UK ratified, but then withdrew its ratification, so that the UK would not be subject to the rulings of the CJEU (Someone clearly forgot to tell them that all European Patents, including those designating the UK, will eventually be under the CJEU).

Background

What is generally known as a "European patent" (EP) actually isn't. The current EP* is the product of a central patent searching/examining/granting/opposing organisation for the national states which have signed up to the European Patent Convention (EPC). It is not a single patent valid across the whole of the EPC contracting states, but a bundle of national patents, able to be renewed/abandoned/litigated in the various countries entirely independently of each other. Patentees can choose in which of the 38 current countries in which they wish to validate a granted EP – very few go for all of them. In most cases, for one very good reason – expense.

Patent cover across a market comparable with the USA is far more expensive than in the USA, especially when it comes to renewal. Even a small portfolio of countries will cost something like $US50,000 over the 20-year lifetime of a patent. In contrast, the three US renewal fees come to a total of $12,600, making US cover bargain-basement. As a result, many patent applicants, even European ones, shy away from the European system as currently constituted. An article in *The Economist* magazine on the subject was entitled *The smother of invention*.

As the EPC was taking shape in the 1970s, there was taking shape alongside it another convention, the Community Patent Convention (CPC). The CPC was intended to give rise to a Community Patent (CP), a unitary patent covering the whole of what was then the European Economic Community, now the EU – no individual country rights, it was all or nothing. At the time, it was believed that the CPC would come into force shortly after the arrival of the EPC in 1979. People were so certain of this that there were CPC questions on the first examinations for European patent attorneys. However, it never did, courtesy of disputes, mainly about languages. Over the course of time, the Italians and (particularly) the Spanish have been vociferous about the lack of their languages as an official language. So, the idea of a unitary patent for Europe has come and gone periodically.

Fed up with the lack of progress, a group of 25 EPC countries asked why they couldn't do a maxi-Switzerland/Liechtenstein, which, under the EPC's Article 142(1):

**It should be remembered that a "European patent" does NOT mean a "European Union" patent. The EPC covers all EU members, plus non-EU members Albania, North Macedonia, Iceland, Liechtenstein, Monaco, Norway, San Marino, Serbia, Switzerland, UK and Turkey.*

Any group of Contracting States, which has provided by a special agreement that a European patent granted for those States has a unitary character throughout their territories, may provide that a European patent may only be granted jointly in respect of all those States.

are considered as a single entity – invalidate or abandon an EP/CH and the EP/LI patent also dies. No reason at all, said the authorities, and the EU produced several draft regulations to bring it about, over the howls of protest of the Spanish, who brought lawsuits to the Court of Justice of the European Union to try to derail the whole process. The various lawsuits by Spain and Italy were dismissed by the CJEU.

The EUP

This will be identical to the current EP system, except that, at grant, applicants can choose to validate as a EUP – the normal national validations will still apply to non-signatories to the EUP (Spain, Italy and the non-EU EPC members). The only oddity is that, instead of the 3 months (6 months for Ireland) deadline from the date of grant for validation, a EUP must be chosen within one month. The languages will be the official languages of the EPO, English, French and German. The EUP will act as a unitary patent across the entire EUP territory, and will be subject to a single renewal fee – and of course single court proceedings. Which leads us neatly on to…

The UPC

Here, things get more complicated. The UPC is envisaged to be the patents court for all European patents, not only the EUP, but also the "bundle" EP. During a transition period of 7 years, EP owners can opt out of the unitary system.

It is worth noting that the UPC part of the deal applies only to UPC Contracting States. In other words, although the Swiss and other non-UPC States can apply for and acquire EUPs, they can never themselves appear before the court, even for "traditional" EPs – only the current EP mechanisms (opposition, Boards of Appeal) will be open to them. Swiss companies will have to appoint representatives from UPC States to represent them. This appears not to be true of UK attorneys post-Brexit.

The UPC will consist of two courts, a Court of First Instance and a Court of Appeal.

The Court of First Instance will consist of local or regional divisions and a Central Division. The local or regional divisions will be the courts for a single contracting state or two or more contracting states. The Central Division will be located in Paris It was originally intentioned that there would be sections in London (chemistry, pharmaceuticals) and Munich (mechanical engineering), but with Brexit excluding London, its place will be taken by Milan, with Paris and Munich sharing the load until Milan is up and running. The Court of Appeal will be based in Luxembourg.

At the time of ratification, the ratifying state must state whether it intends to set up a local or regional division (there is no obligation to set up either).

So, what are all these courts supposed to do?

- *Revocation proceedings* must be brought before the Central Division.
- *Counterclaims for revocation* in infringement proceedings must be brought before the local or regional division before which the original infringement claim was brought. This division can either (i) hear the counterclaim, or (ii) refer the counterclaim to the Central Division and stay or proceed with the infringement proceedings, or (iii) refer the entire matter to the Central Division, with the parties' consent.
- For *infringement claims*, the patentee can choose to bring an infringement action before the local or regional division of the place of the (actual or threatened) infringement or of the infringer's (principal) place of business. If the infringer has no place of business within the EU, infringement proceedings can also be brought before the Central Division. When a revocation action is already pending before

the Central Division, an infringement action can, at the patentee's discretion, be brought before the same court or before a local or regional division.

- *Declarations of non-infringement* must be sought before the Central Division. However, if infringement proceedings are initiated before a local or regional division within 3 months' time, the action for a declaration of non-infringement will be stayed.

It all sounds somewhat involved, but the intention is that it be efficient and quick – the ideal is a completed first instance proceedings in 12 months. How practical this is remains to be seen.

Revocation proceedings before the UPC provide an alternative to the present EPO opposition proceedings. They have the advantage that they are not restricted to the 9 months' deadline from mention of grant, by which an EPO opposition must be filed. However, the EPO opposition fee (as of 1 April 2014) is EUR775, and no court proceedings will be that cheap.

Representation

Lawyers in a UPC Contracting State can represent clients before the UPC, as can European Patent Attorneys with suitable additional litigation qualifications. This meant that all German *Patentanwälte* were representatives. The original rules would have excluded the bulk of the UK patent profession, so the chaps and chapettes of the Chartered Institute kicked up a fuss, and it seems now that, as EUPs will be granted by the EPO, Chartered Patent Attorneys who are European Patent Attorneys may be able to represent clients before the UPC – even if the UK is no longer an EU member. Naturally the Chartered Institute is banging this drum very loudly (with some justification – over 60% of European patents have English as an official language)., On the other hand, UK lawyers won't be able to represent clients before the UPC.

How much?

The $64,000 question! Thankfully not (quite) – at least for renewal fees. Up to recently, the answer has been "not as low as you'd hoped for, but not as high as you'd feared", and this is how it has turned out. The EPO (which, after all, will play a major part in running the thing) proposed a so-called "True TOP 4" fee, corresponding to the sum total of the renewal fees currently paid for the four countries in which European patents are most frequently validated today (Germany, France, UK and the Netherlands), and this has been accepted.

As can be seen, the proposed price for the whole term (EUR35,555 – currently around $US40,600) is still 'way more than an equivalent US patent renewal fees (total US renewal fees, $12,600). You would be getting coverage in 25 countries of course, but whether you'd actually want coverage in these extra countries is something else again… Individual coverage desires are going to dictate whether people actually choose the EUP route. Here's the EPO's 2023 table, based on all 25 member states:

Year	Unitary Patent (EUR)	25 member states (EUR)*
2	35	220
3	105	1 452
4	145	1 857
5	315	2 506
6	475	3 250
7	630	3 861
8	815	4 615
9	990	5 554
10	1 175	6 463
11	1 460	7 526
12	1 775	8 655
13	2 105	9 854
14	2 455	11 028
15	2 830	12 189
16	3 240	13 569
17	3 640	14 912
18	4 055	16 166
19	4 455	17 729
20	4 855	19 227
Total	**35 555**	**160 633**

* Based on national renewal fees as at 1 January 2020.

But what about litigation costs at the UPC? Will they be affordable? Here is the current proposal:

https://www.unified-patent-court.org/sites/default/files/agreed_and_final_r370_subject_to_legal_scrubbing_to_secretariat.pdf

These are proposed official fees, and do not take into account costs of case preparation and representation. An actual case may cost quite a lot of money – not perhaps so much as a US court case, but again, still a lot of money, especially for a little guy or gal. One commentator on Unitary Patent matters, Dr. Ingve Stjerna,

https://www.stjerna.de/

German attorney and vocal critic of the proposed system, is of the opinion that the EUP/UPC will not be of benefit to the SMEs whom it is supposed to benefit – see his paper “A poisoned gift for SMEs” here:

http://www.stjerna.de/unitary_patent.htm

The choice of "gift" (the German word for poison) is probably deliberate… If he is right, EUPs could become the sole preserve of large companies who validate in many countries, as opposed to the 4-6 in which most companies and individuals validate, and SMEs will stick to the traditional "bundle" European patents or perhaps even go back to a narrow range of national filings.

One effect of "Brexit" may be to take the EUP off the table for many small companies on cost/coverage grounds. It's impossible to generalise of course, but a typical small company portfolio of important manufacturing countries would be Germany, France, UK, Netherlands, Switzerland. With the UK's departure, it would mean that only three of those countries would be covered by the UPC and separate renewal fees would be payable for the UK and Switzerland. An EUP would give a lot more countries, but these would generally be of no interest to many smaller companies. Much cheaper to stick to the "bundle" EP route, or go back to national filings.

Pros and cons

The obvious con (apart from the cost one above) is one shared with the EP – all eggs in one basket, only even more so, so you could lose everything in one go. Pros are that the costs will be cheaper (they have to be, otherwise nobody will use it) and that there will be uniform legal jurisdiction across the 25 EUP countries – no more national courts coming to diametrically opposite conclusions on the same facts (such as in the infamous *Epilady* case).

Another problem that vexes the UK is that of "bifurcation". In British proceedings for infringement, the alleged infringer can counterclaim for revocation of the patent, and the two actions are heard as part of the same proceedings. However, under German practice, the two actions are heard separately. This leads to the possibility that infringement may be found, with the infringer incurring all sorts of penalties, only for the patent then to be held invalid in a later hearing (i.e,. there was no infringement, because there was nothing there to infringe in the first place). In the latest draft of the IPC rules, there has been an attempt to minimise the time between the two actions. German practice has lived with bifurcation for years, so perhaps it isn't the problem that the British think.

It appears that objections relating to Unitary Patents will be heard by the UPC and not by the EPO Board of Appeals. This will hopefully spare us from some of the barminess of the Boards.

Opting out

Starting on 1 March 2023 (the so-called "sunrise period"), and lasting for a transitional period of 7 years after the UPC came into existence on 1 June 2023 (possibly extended for a further 7), it will be possible for proprietors of European patents and applicants for pending European applications to opt out of (or opt into) the UPC system, i.e, choose between the current EPO/national courts system or the UPC. All newly-granted European patents based on applications filed after the transition period but not designating the EUP route will be automatically subject to the exclusive jurisdiction of the UPC. Opting out will cost nothing (in official fees).

In the latest Rules draft, it is made clear that opting out or opting in is not possible if there is an action pending before the UPC or a national court respectively, or if these proceedings have been concluded. This change will reduce the risk that the UPC and the national courts will deal with the same European patent, one after the other, resulting in possible diverging decisions.

However, the whole business of opting out and opting in is still in a state of flux, and patent applicants/owners will need to consider carefully which option best suits their interests. In addition, the UPC system is groaning under the strain of a massive influx of opt-outs, which started towards the end of April.

The vexed question of SPCs

Supplementary protection certificates (SPCs) are extension of the term of patents for products that have to pass high regulatory hurdles before the products can be marketed. The best-known examples are the clinical trials required for approval of pharmaceuticals. The length and expense of these virtually assures that the manufacturer cannot recoup the costs before the patent expires. An SPC ensures an extension of the patent term of up to 5 years. SPCs are generally granted nationally, and there is an EEA (European Economic Area = EU + Liechtenstein, Norway and Iceland) SPC. But what about the Unitary Patent? Will there be a unitary SPC to go with a unitary patent? There is (so far) no provision for something seen by the affected industries as extremely important. The industry bodies have made a joint proposal, and we await further developments.

Challenges that came and went

(i) Spain

Spain sought the nullification of EU Regulations 1257/12 and 1260/12 setting up the Unitary Patent and the UPC. The bases of its cases were an alleged lack of legal basis for the Regulations in the Treaty on the Functioning of the European Union, and an allegation that the EU cannot legally delegate certain tasks to the EPO, as decisions of the EPO are not subject to judicial oversight (the latter is a reference to the fact that decisions of the EPO Boards of Appeal are not subject to appeal). And, naturally, that the Spanish were discriminated against by Spanish not being an official language.

Spain failed when the CJEU agreed with the initial opinion of the Advocate-General that the Spanish case should be refused.

On the other hand, in a recent development, one of the Spanish opposition political parties, the PSOE, has recommended reconsidering joining the EUP/UPC.

Italy joined the initial Spanish case, but dropped out after the first rejection and did not join Spain's second attempt. It subsequently ratified the agreement, and Milan has replaced London as a Central Division, albeit with not so big a role as was envisaged for London.

(ii) Belgium

Ratification by Belgium, an early ratifier, was challenged in the Belgian Constitutional Court by the European Software Market Association and some others, partially on the grounds of language (discrimination against Dutch speakers). The challenge was rejected.

(iii) UK

The UK was one of the driving forces behind the EUP/UPC legislation, and London was destined to be the site of the UPC Central Division dealing with chemistry and pharma. But then came "Brexit"… This has major implications not only for the EUP/UPC but for European IP as a whole.

In the end, the UK did indeed ratify. However, the UK will not participate in the UPC – the fact that the CJEU would be the ultimate arbiter, and the handsome Conservative majority in the 2019 UK General Election, made sure of that - so that nice proposed court building (next page) will never be used

Admittedly the UPC will not be a European court as such, but given the apparent desire on the part of a slight majority of the UK population for freedom from interference from all of the strange ways of funny foreign courts, it always made UK membership a doubtful starter, in spite of a number of opinions that said it might be possible.

The absence of the UK, the EU's second biggest economy, from the UPC will certainly decrease the attractiveness of the EUP, and given that it didn't look that attractive for SMEs even with the UK in, it could

mean that EUPs will not be chosen. It will also mean a loss of experienced UK patent judges, some of the best in the business. Milan has been chosen as a replacement for London.

The UK will remain part of the EPC (which is not an EU organisation), so European filings designating the UK will not be affected. Unitary rights such as the EU trade mark and Community design have been.

This is the end, my friend, this is the end, my courtly friend, the end…

Wait a minute, did I say "probably" back there? Yes, actually. This is because a leaked document relating to discussions on a possible trade deal between the USA and the UK post -Brexit revealed that the US is pushing the UK to adopt a grace period like the US one. Such a change in UK law would place the UK outside the EPC, which recognises no grace period. This in turn raised the theoretical possibility that, as the UK would cease to be an EPC Contracting State, all the UK European Patent Attorneys might cease to be European Patent Attorneys and could therefore no longer represent clients before the EPO. And this while the Chartered Institute has been banging loudly on the drum of UK attorneys continuing to work in Europe. I can't imagine the UK doing something that daft, because they've previously never done anything that daft – oh, wait…

Current developments in the USA-UK trade talks indicate that the UK wishes to continue EPC membership. However, what will happen when the UK Government (and its supportive tabloid press) realises that, in patent matters, a foreign court already makes decisions directly affecting the UK - the EPO Boards of Appeal?

The potential grace period problem with the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), whose IP provisions also include a grace period, was overcome. Whether the USA can be similarly placated remains to be seen. I suspect that it can, given how many US firms use UK agents at the EPO.

(iv) Germany

Another of the driving forces behind the whole business, and on the point of ratification, requiring only the German President's signature for opening for business in December 2017. It was then blown off the rails by a constitutional challenge by the abovementioned Ingve Stierna, on the grounds that the relevant legislation exceeds the limits on the transfer of sovereignty under the constitutional right to democracy derived from Art 38(1) of the Basic Law for the Federal Republic of Germany. This was backed by the *Alternative für Deutschland* (AfD), the right-wing political party that became the third-largest party in the Bundestag after the 2017 elections.

The Federal Constitutional Court (BVerG) held that German ratification would be unconstitutional, because the necessary two-thirds majority in the Bundestag (German Federal Parliament) wasn't obtained (only 35 members were in the chamber when the vote was taken). Dr. Stjerna's other three grounds were rejected, and there were three dissenting opinions that would have thrown the whole thing out. As the Duke of Wellington said of Waterloo, a damned close-run thing. The lack of a quorum was so blatant even the question as to whether Dr. Stjerna was entitled to bring the complaint in the first place was overlooked.

The German Federal Government was determined to push ahead and the proposed legislation was approved by a quorum in the Bundestag on 18th December 2020. A further two constitutional challenges were rejected, the Federal President signed the ratification on 7 August 2021, and it was deposited.

(v) Hungary

A Constitutional challenge was made as in Germany, and the Hungarian Constitutional Court held that the UPC was incompatible with the Hungarian Convention. This is not such a big problem as is Germany, which is one of the essential ratifiers, but it still represents a setback for the UPC. One of the bases for the decision was that the CJEU had held the European and Community Patent Court, the proposed and abandoned

predecessor of the UPC, in effect sought to establish a court that was outside the EU's legal framework, and the same reasoning applied to the UPC. Could this objection arise elsewhere? Definitely possibly.

The return of national filing?

Quite possibly, given (a) the possibility of the reduced attractiveness of any eventual EUP with the departure of the UK, and (b) it will ultimately be the only way to avoid the UPC. Some EPC countries, e.g., Belgium, France, Ireland, have provided that a PCT application designating those countries can only proceed via a European application Thus, any granted patent will ultimately be subject to the UPC. The only way to avoid this is to forget the PCT and file national applications right from the beginning, thus losing the advantages of PCT filing that are the basis of the system's appeal and success. However, things may be changing - Italy changed its law in 2020, so that it is now possible to designate an Italian national patent from a PCT application. Other Euro-PCT-only countries may also be considering this possibility.

There will be the pain of translation fees and national agents and their fees. On the other hand, many of the EPC countries (France, Italy, Netherlands) don't examine, so a relatively quick grant is guaranteed, and Germany's stiff examination can be delayed by up to 7 years, by which time you probably know whether or not you want it.

It will depend very much on individual requirements, but it looks as if it could become a serious option, and large patent attorney firms with offices in the major countries are already gearing up to handle the possibility in the most cost-effective manner.

So, we're on our way to heaven, we shall not be moved?

The UPC and the Unitary patent opened its doors for business on 1 June 2023. It is indeed getting used, and attracting substantial business Proceedings have been initiated in 9 divisions, with the German divisions being the busiest. It will be interesting to see how the trends will develop. For smaller operators, it would appear to offer less flexibility for more money. However, eventually all European patents, whether traditional "bundle" types or unitary types will fall under the jurisdiction of the UPC. As Doris Day famously warbled, *Que sera, sera*. That was in a Hitchcock film *The man who knew too much*. We still don't know enough, but, to perhaps paraphrase the Beatles, it's getting so much better all the time, at least in terms of what we know.

APPENDIX O

The other side of the coin – the case against patents (and how, perhaps, to make them better)

The existence of this booklet rests on one basic assumption; that patents are A Good Thing and worth having. Well, to paraphrase the immortal words of Mandy Rice-Davies, I would say that, wouldn't I? But are they?

The whole question has been thrown into sharper focus with the proposed waiver of IP rights to help deal with the COVID pandemic. The new Biden Administration in the USA has made favourable (and very non-typical US) noises about it, whereas the Europeans are not so favourable. Here, the case seems clear – given the complexity of vaccine manufacture, a suspension of IP rights would not provide a better supply of vaccine. However, the COVID question has brought the question again to the fore, particularly in relation to companies in the pharma field.

Patents are a product of what one could describe as a Western capitalist mindset. The idea of a limited monopoly to encourage the spread of technology goes back to mediaeval Europe, and the first truly modern patent system was the Venetian Patent Statute of 1474 (see Appendix C). This was followed by the UK Statute of Monopolies of 1624 (see p.17), which restricted monopolies (previously dispensed by kings (and queens – Elizabeth I was a particular sinner) to favourites) to "manners of new manufacture". The worldwide triumph of the Western economic model, first by the colonising European powers and then by the rise of the United States, carried the Western patent concept with it. It developed into its present form in the industrialising society of the 18th and 19th centuries – the US Founding Fathers were sufficiently convinced of its value to include it in the Constitution of the new Republic, and Thomas Jefferson, no less, was the US's first Commissioner of Patents. And the modernising Meiji dynasty in Japan took the Prussian (later German) system as its model.

It seems self-evident that, if you put lots of time and money into inventing something new and useful, it is simply wrong if someone else, who hasn't put in that effort, comes along and simply copies it and undercuts the inventor because s/he hasn't incurred the development costs. Who could possibly be against it?

Short answer, people with anti-monopolistic sentiments. There are folk who think that, by definition, monopolies of any kind are bad, and that they should not be allowed. This was originally a position of those with a socialist/communist bent, seeking to build the new Jerusalem, where everyone will own everything and nothing, and that we'll all love one another. During the existence of the Soviet Union, the government introduced an alternative, the inventor's certificate, which gave the inventor certain privileges, such as a medal, financial benefits, better apartment, etc. Yet the USSR never gave up patents and the USSR State Committee for Inventions and Discoveries continued to grant patents from its premises on Moscow's Kuibyshev Street (the old Tsarist Stock Exchange building). China completely gave up patents, regarding them as totally capitalist and bourgeois, until the economic reforms instituted by Deng Xiaoping led to the founding of what is now the CNIPO, which is ironically one of the world's "big five" patent offices.

Anti-patent views are also widely held by academic economists, some of them very prominent. The views of such distinguished scholars are not so easily dismissed. The basic academic position is that patents do not encourage innovation; worse, they restrict both innovation and the flow of information, to the detriment of all.

The third group for which the present system is problematic is the developing world, which, as a net importer of technology, is placed at a disadvantage with respect to the developed world.

A further group could be postulated – the freewheeling entrepreneurs of Silicon Valley, who wish to build rapidly on the success of others, and who regard patents as an impediment. In a way they are a bit like the Formula 1 manufacturers, who are always looking for a better interpretation of the rules to steal a march on

the rivals, knowing that the rivals will copy it immediately. This often leads the Silicon Valley types to the contradictory position of seeking to have lots of patents on the one hand, but wanting to be free from the strictures of rival patents on the other. Some commentators in the USA see their manipulative hands in the *America Invents* Act, which the commentators see as a dilution of US fundamental patent rights.

These commentators tend to attribute almost magical properties to the US patent system and are determinedly pro-patent as a driver of innovation, some of them so rabidly so that one (this one anyway) can't help wondering whether this is an extension of the age-old principle that one cannot expect a person to understand something when his/her job depends on his/her not understanding it. For example, in its August 8, 2015 edition, *The Economist* printed this editorial (with accompanying article):

http://www.economist.com/news/leaders/21660522-ideas-fuel-economy-todays-patent-systems-are-rotten-way-rewarding-them-time-fix

and one particularly pro-patent blogger, noted for being slightly over the top, wrote this:

http://www.ipwatchdog.com/2015/08/13/what-the-economist-doesnt-get-about-patents/id=60626/

When you ignore all the ranting and raving typical of this particular commentator, there are many good solid pro-patent arguments in there. It is, of course, largely seen from a US perspective, with the inherent and very typical US assumption that, just as US-style democracy is the default condition of mankind, what works for the USA should also works for everywhere else.

The problem is, they are countered by solid arguments for the other side, as will be seen later in this article. However, it is worth noting that most (but not all) of the arguments against patents are based on the workings (or non-workings) of the US patent system and the associated US legal system, which, *America Invents* Act notwithstanding, remains in many ways a bizarre outsider in the world of patents in general, and many of the criticisms levelled against it are simply not applicable to patent systems elsewhere.

Someone else who agrees with the "patents are good" position is Professor Stephen Haber of Stanford University, who, in a paper *Patents and the wealth of nations* in the 2016 CPIP Conference issue of the George Mason Law Review,

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2776773

argues that the world's wealthiest nations grew rich because "they had well-developed systems of private property". His conclusion in short, strong patents make wealthy nations.

In another recent publication, the Hudson Institute:

http://www.hudson.org/

a US think tank, produced a paper on IP rights and the access to medicines:

http://www.hudson.org/research/12622-the-patent-truth-about-health-innovation-and-access

Rejecting recent UN arguments that patents get in the way of providing medicines, the paper says that the problem of the lack of availability of medicines in the developing world is not patents, but

lack of good governance, poor physical infrastructure and distribution systems, a shortage of healthcare facilities and providers, insufficient public health spending, corruption, taxes and tariffs on medicines, and the lack of policies that promote economic growth and incentives for individuals and businesses to develop new technologies so their countries can grow and prosper.

While that is indeed often the case, it is worth remembering the ethos of the Hudson Institute:

Promoting American leadership and global engagement for a secure, free, and prosperous future.

and of course the problem that these supposedly independently think tanks, which rely on donations, often reflect the views of their paymasters:

http://www.nytimes.com/2016/08/08/us/politics/think-tanks-research-and-corporate-lobbying.html

In other words, are these pro-patent US positions merely camouflaged ways of arguing for the superiority of the US way of doing things and maintaining US dominance? Yet another case of everyone but the USA being out of step? Not always; in fact, as we shall see, some of the biggest critics of the patent system are US academics, some of them highly-regarded Nobel economics laureates.

Might it not be the other way round, namely that wealthy, advanced nations produce patents, and that, to quote Boldrin and Levine (see below) *Intellectual property is not a cause of innovation, but it is rather an unwelcome consequence of it*?

In another view, that of Hu and Png (National University of Singapore) in a paper for WIPO:

We investigated whether stronger patent rights achieved their intended objective of stimulating economic growth. To the best of our knowledge, to date, there is no robust empirical evidence that stronger patent rights indeed stimulate growth, although the U.S. and other developed countries have aggressively exported their stringent intellectual property rights regimes to the rest of the world.

In an interesting new angle, Professor Camilla Hrdy of the University of Akron claims, in a recent paper entitled "Technological un/employment", downloadable here:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3011735

that, while innovation leads to more jobs in some areas, it leads to fewer jobs in many others e.g. those jobs done away with by automation, an increasing problem with the rise of robotics. This has naturally produced howls of protest from the usual suspects:

http://www.ipwatchdog.com/2018/03/15/dueling-visions-patent-system-dueling-visions-america/id=94680/

What are the facts? Indeed, are there any facts? To this outsider looking in, the evidence is equivocal – solid arguments can be and have been made for both sides. The "anti" academic literature tends to be more theoretically economic, the "pro" camp more rooted in empirical evidence. They seem to start at opposite ends of the argument – the "pro" camp starts with specific allegedly successful examples and generalises that this is the universal situation, the "anti" camp starts with the general premise that monopolies are inherently bad news and reasons that the allegedly successful cases, if really successful, are the exceptions that prove the rule. Both point to specific examples that "prove" (or at least seem to support) their respective cases. It is, perhaps, a question to which there is no definitive answer.

A more nuanced view is taken by Mazzoleni and Nelson in *Research Policy* (27 /1998), 273-284).

http://www.sciencedirect.com/science/article/pii/S0048733398000481

In contrast to the extreme positions and their "one size fits all" stances, they say:

Today's conventional wisdom is that strong patent rights are conducive to economic progress. Yet not long ago students of the patent system took a more nuanced position, arguing that often strong patents were not necessary to induce invention, and entailed significant economic costs. Several empirical studies have supported this position. However, the current advocacy invokes theories of the positive benefits of patents that were repressed in the earlier more negative analyses. This essay reviews these theories, and the empirical evidence that might bear on them. The authors conclude that there is reason for concern that the present movement towards stronger patent protection may hinder rather than stimulate technological and economic progress.

They assert (admittedly without conclusive evidence):

> We want to articulate here, therefore, the following position. The world economy will not benefit from a general broadening and strengthening of patent rights. In some areas, patent rights certainly are economically and socially productive in generating invention, spreading technological knowledge, inducing innovation and commercialization, and providing some degree of order in the development of broad technological prospects. However, in many areas of technology this is not the case. In a number of these, strong broad patents rights entail major economic costs while generating insufficient additional social benefits. And in some strong broad patents are simply counterproductive. One needs to be discriminating and cautious on this front.

The authors are thinking here of what they call "cumulative systems technologies", i.e., technologies in which the successful development and implementation relies on a number of independent developments, for example, aircraft, motor vehicles and, most recently, telecommunications ("the phone wars"), where the various protagonists spend all their time tripping each other up and sueing each other, development is slowed and everyone suffers.

There is a further problem here:

> An important consequence of the trend toward broader and stronger protection of patents, particularly in these kinds of technologies, is higher barriers to entry for new firms. This is bad news for companies in the developing countries.

Ultimately there appears to be only one point of agreement – the patent system as currently implemented is not perfect. I used to paraphrase Winston Churchill's famous statement about parliamentary democracy by saying that patents were the worst form of driver of innovation ever devised by mankind, except for all of those other forms that mankind has from time to time devised. But is even that true?

As mentioned by Mazzoleni and Nelson above, the big losers of the system are those countries least able to utilise it, namely the developing world, which is expected to play by the big kids' rules. The big kids, led by the USA, insist on complete openness, conveniently forgetting that, when it suited them, they were also very restrictive. Until 1836, only US citizens could apply for US patents. This was then changed such that foreigners could apply for US patents, but at ten times the price – except for British citizens for whom the price was two-thirds higher again. Switzerland didn't have a patent system at all, until one was more-or-less forced on it by the large irate neighbours.

In the case of the colonial empires, such as those of the UK and France, colonies existed not only to satisfy the need for imperialistic prestige when such things mattered, but also to supply the mother countries with cheap raw materials, which the mother country would then send back as expensive manufactured goods. The development of the colonies as manufacturers or independent economies wasn't high on the list of priorities.

Anti-patent sentiment isn't new – for example, the aforementioned *Economist*, a publication founded by opponents of the Corn Laws, an early 19th century restrictive UK tariff on imported grain, advocated the complete abolition of the system in its first (1851) editorial on the subject:

http://www.economist.com/news/business-and-finance/21660753-our-leader-patents-1851-right-property-inventions

Economists, especially those who believe in free trade, have never been happy with the system, but over recent years, the muted discontent has turned into a roar, largely fuelled by the direction patenting has taken.

The recent serious questioning of the patent system appears to have started in the developing world, who perceived that the playing field was not even remotely level and demanded that it be more so. There is even a United Nations body UNCTAD (United Nations Committee for Trade and Development), of which you've probably never heard, one of whose objects is to facilitate the transfer of technology to the developing world to aid in that development. With what success I have no idea.

http://unctad.org/en/Pages/Home.aspx

In a 2016 paper (revised 2020), Jonathan Barnett takes exception to this

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2842350

And makes a case for patents in developing countries, although the examples he chooses – South Korea, Israel, Taiwan – and not what people usually think of when one says "developing countries".

It was also at one time a major topic in Australia. Australia is an unusual case, in that it is a First-World country, which, in terms of technology transfer, is a Third-World country (i.e., a net importer). As a result, strong arguments arose as to whether the patent system as then existing was really appropriate to Australia's needs. A particularly vociferous opponent of the system was Professor Don Lamberton of the Economics Department of the University of Queensland. Prof. Lamberton was a member of the 1980s Industrial Property Advisory Committee, set up to review the Australian Patents System, following criticism of the system to Government Ministers by a senior member of the CSIRO (Australia's Government scientific service). A report was duly published:
http://trove.nla.gov.au/work/19111637?q&versionId=22449788

Prof. Lamberton held that Australia should have a patent term of 10 years' maximum and strong compulsory licensing provisions, very much like the conditions then current in the Andean Pact (Cartagena Agreement) countries of South America.

After a period of reflection, Australia went in the other direction, at least partially out of fear of retaliation by the big kids. Here is part of Prof. Lamberton's strongly-worded dissent in the Report of the Australian IPAC:

> This Report does not live up to its claim to have adopted an economic perspective and to have applied economic criteria. It has not consistently applied economic criteria; it has not made full use of available empirical evidence; and the concept of social cost, so frequently mentioned, has never really been fully grasped. The underlying idea of the process of innovation is little more than faith that more patent protection will ensure more innovation. The sensible objective is rightly declared to be "to modify the Australian patent laws, adjusting the length, strength and breadth of patent rights" to maximize the net benefit. It is unfortunate that the Report soon strays from this path.
>
> No amount of talk about individual patent successes nor about a future in which the Australian economy has magically become progressive, innovation-oriented, and competitive on the world scene, can hide the facts that Australia exports little in the way of manufactured goods and has few inventions for sale. Mast patents are granted to overseas firms. To make the most of this situation, Australia needs to reduce social costs to the extent possible without inhibiting innovation and without provoking international retaliation. As a small nation, there is scope for such action. The constraints of the Convention are largely myth.

Much of Prof. Lamberton's case is presented in a co-authored book challenging the system:

http://trove.nla.gov.au/work/13459723?q=+&versionId=45837191

Other Australian academic questioning of the value of the patent system includes these references:

http://www.innovationperspectives.com.au/hazel%27s_research_papers/What%20are%20the%20Costs%20and%20Benefits%20of%20Patent%20Systems.pdf

http://lateraleconomics.com.au/wp-content/uploads/2014/02/Extending_Patent_Life.pdf

The most recent anti-patent arguments have arisen out of the new directions that technology has taken in the last half-century. Things were relatively simple when inventions were for chemical, electrical and mechanical inventions. Now we have computer software and biotech, both posing questions as to the very nature of patentable subject matter itself, and the latter raising profound ethical questions. How far should one be allowed to manipulate the stuff of life itself? And can anyone in reality own it?

The biotech argument took a new turn with the ability to unravel genetic sequences and to identify the function of individual genes. Contemporary patent law, not unreasonably, saw isolated genes (which do not occur in nature) as artificial constructs, and therefore patentable. This was a step too far for many, and it led to the *Myriad* cases in the USA, in which the US Supreme Court ruled that a gene that was merely isolated (the basis of Myriad's expensive test for breast cancer) was not patentable subject-matter. How this will develop in years to come remains to be seen. The Australian High Court has agreed, overturning a Federal Court decision that the Myriad development was a "manner of manufacture", the classic definition of the UK Statute of Monopolies, still the definition of patentable subject-matter in Australian patent law.
Computer software was traditionally seen as the subject of copyright, and many patents acts specifically forbid the patenting of computer software *per se*. However, the US has allowed it. The US has gone one step further and allowed the patenting of business methods, again, something that isn't allowable in most countries. Recent US Supreme Court decisions have reined in some of the wilder excesses of this regime.

These two in particular have led to the impression of a patent system, at least in its US form, totally out of control, not only to its established opponents, but also to the public at large, and that, rather than promoting innovation, it is actually getting in the way. This has pushed the previously obscure world of patents and patenting on to the front pages of newspapers, and usually in a negative way, for example, these editorials in the *New York Times*:

http://www.nytimes.com/2014/03/30/opinion/sunday/abstract-ideas-dont-deserve-patents.html

http://www.nytimes.com/2013/06/14/opinion/human-genes-are-not-patentable.html

One of the more potent arguments along these lines is that patenting hinders the progress of basic science, restricting its general application. In days gone by, universities were concerned only with research and publication. In these less financially secure days, universities are seeking to "monetise" research by setting up spin-off companies to capitalise commercially on research results, and professors are counting patents as much as publications in learned journals.

In this regard, one of the more interesting documents to have appeared is the publication "Who owns science?", the work of a number of distinguished scholars. It is sometimes known as the Manchester Manifesto, because of its origin in Manchester University's Institute of Science, Ethics and Innovation. This came out in 2009

http://www.isei.manchester.ac.uk/TheManchesterManifesto.pdf

It can be summarised in one of its paragraphs:

> "We have considered the question of "Who owns science?" in the context of what we believe to be the purposes of science and innovation and evaluated the way in which ownership of science currently operates with respect to these purposes. It is clear that the dominant existing model of innovation, while serving some necessary purposes for the current operation of innovation, also impedes achievement of core scientific goals in a number of ways. In many cases, it restricts access to scientific knowledge and products, thereby limiting the public benefits off science, it can restrict the flow of information, thereby inhibiting the progress of science; and it may hinder innovation through the costly and complicated nature of the system. Limited improvements may be achieved through modification of the current IP system, but consideration of alternative models is urgently required."

In an article in the UK "Guardian" newspaper of 26 November 2009, entitled "How science is shackled by intellectual property", one of the Manifesters, Prof. Sir John Sulston, Head of Manchester University's Institute of Science, Ethics and Innovation, put it like this:

> "The fruits of science and innovation have nourished our society and economy for years, but nations unable to navigate our regulatory system are often excluded, as are vulnerable individuals. We need to consider how to balance the needs of science as an industry with the plight of those who desperately need the products of science."

A fundamental tenet of the Manchester Manifesto is that the playing field is tilted to the advantage of the developed world, and therefore it is pointless to expect the developing world to lift itself up by its own bootstraps, as it were.

Another of the Manchester Manifesters was Prof. Joseph Stiglitz, 2001 Nobel Economics laureate and one of the founders of a new branch of economics, the economics of information. While not as openly starkly opposed to patent rights as Prof. Lamberton, Prof. Stiglitz is equally adamant that patent rights in particular not only act as an impediment to scientific progress, but also do not encourage innovation. His point is not the restriction of dissemination of knowledge, but the monopolisation of the use of such knowledge. Given that this is the very basis of patent law, Prof. Stiglitz's position is, in reality, nearly as anti-patent as Prof. Lamberton's.

Prof. Stiglitz provided an *amicus* brief to the US Supreme Court in the *Myriad* case mentioned above:

https://www.aclu.org/files/assets/2010_01_20_-_Declaration_of_Joseph_E__Stiglitz.PDF

His section on "Intellectual property; its strengths and limitations", starting on p.4, is well worth a read. Some samples:

> 9. Innovation is important; it has transformed the lives of everyone in the world. Intellectual property laws can and should play a role in stimulating innovation. However, the contention that stronger IP rights always boost economic performance is not correct. Poorly designed intellectual property regimes can reduce access to technology and medicine, lead to a less efficient economy, and may even slow the pace of innovation.

11. There are two fundamental problems with the IP system. First, it is based on *restricting the use of knowledge*. Knowledge is what economists call a "public good": everybody potentially can benefit from it, and there is no extra cost associated with an additional person gaining those benefits. Restricting knowledge is thus inefficient. Second, the patent system also grants (temporary) *monopoly power*. Monopoly leads not just to inequities but also to major distortions of resource allocations. The monopoly power generates monopoly rents (excess profits).

12. As a society, we tolerate some monopoly power and some restrictions on the use of knowledge in the belief that they might spur innovation. But the social costs of these distortions and inefficiencies can outweigh the benefits. Patents that impede the dissemination and use of knowledge slow follow-on research, innovations based on other innovations, and can slow overall technological progress.

So, Prof. Stiglitz believes that patenting can have a stifling effect on the flow of innovation, and actively promotes inequality, a big subject in the USA:

http://opinionator.blogs.nytimes.com/2013/07/14/how-intellectual-property-reinforces-inequality/?_r=0

In the case of Myriad, he points out that the real innovation is the sequencing of the human genome, something that was done entirely by public funds and made available to everyone. Without this basic knowledge, Myriad wouldn't have got off the ground at all, so how can it then claim ownership of something that it didn't actually find?

In other publications and lectures, for example:

http://c4sif.org/2010/12/stiglitz-the-economic-foundations-of-intellectual-property/

Prof. Stiglitz opines that intellectual property protection should be one of a number of possibilities for the encouragement of innovation. One of his favourites is the award of prizes to innovators, as opposed to the award of patents (in some ways a return to the old Soviet inventor's certificate system).

His conclusion in this paper (which is well worth a read, regardless as to whether or not you agree with it) is:

Intellectual Property Rights are important, but the importance of IPR has been exaggerated, as they form only one part of our innovation system. IPR should be seen as part of a portfolio of instruments. We need to strengthen the other elements of this portfolio and redesign our intellectual property regime to increase its benefits and reduce its costs. Doing so will increase the efficiency of our economy—and most likely even increase the pace of innovation.

This is how Prof. Stiglitz sees the various systems:

Table 1. Comparing Alternative Systems

	Innovation System		
Attribute	**Patent**	**Prize**	**Government-Funded Research**
Selection	Decentralized, self-selection.	Decentralized, self-selection.	Bureaucratic.
	Lacks coordination.	Lacks coordination.	More coordination possible.
Finance (tax)	Highly distortionary and inequitable.	Can be less distortionary and more equitable.	Most efficient.
Dissemination Incentive	Limited—monopoly.	Strong—competitive markets.	Strong.
Risk	Litigation risk.	Less risk.	Least risk.
Innovation Incentives	Strong but distorted.	Strong, less distorted.	Strong non-monetary incentives.
		Requires well-defined objectives.	
Transaction Costs	High.	Lower.	Lower.

One major strand of argument is that patents are allowed for “inventions” that are too trivial. For example, in the USA, patents were granted for routine processes, based on the “inventive” step that these were performed on a computer. In the case of biotech “inventions”, these are often based on basic scientific discoveries made by academia.

Other contributors in the field include Michele Boldrin and David K. Levine of Washington University, St. Louis, Mo. Their arguments may be found in various articles, and in a book “Against Intellectual Property”, completely downloadable here:

http://www.micheleboldrin.com/research/aim.html

they pose the question:

> ... is the system of intellectual property – patents and copyrights – with all of its many faults, a necessary evil we must put up with to enjoy the fruits of invention and creativity? Or is it an unnecessary evil, a relic of an earlier time when governments routinely granted monopolies to favored courtiers? That is the question we seek to answer.

And the answer to this slightly loaded question?

> Our analysis leads to conclusions that are at variance with both sides. Our reasoning proceeds along the following lines. Everyone wants a monopoly. No one wants to compete against his own customers, or against imitators. Currently patents and copyrights grant producers of certain ideas a monopoly. Certainly few people do something in exchange for nothing. Creators of new goods are not different from producers of old ones: they want to be compensated for their effort. However, it is a long and dangerous jump from the assertion that innovators deserve compensation for their efforts to the conclusion that patents and copyrights, that is monopoly, are the best or the only way of providing that reward.

...

> This book examines both the evidence and the theory. Our conclusion is that creators' property rights can be well protected in the absence of intellectual property, and that the latter does not increase either innovation or creation. They are an unnecessary evil.

The distinguished economist Fritz Machlup wrote in 1958:

> *If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it.*

Boldrin and Levine argue that the second sentence is not correct. Their position may be summarized thus:

1. There is little or no evidence that stronger patents lead to increased innovation.
2. Competition is a more plausible driver of innovation.
3. Patents are used by established companies to "game" the system and maintain their position.
4. Strong patent laws have distinct disadvantages.
5. Patent systems grow increasingly restrictive over time.

In a rather nice turn of phrase, Boldrin and Levine say:

Intellectual property is not a cause of innovation, but it is rather an unwelcome consequence of it.

In their view, patent rights are like tariff barriers in international trade, a restriction of free trade, and that, as the removal of such barriers has been the blossoming of free trade and overall prosperity, the removal of patent barriers would do the same for innovation.

Their ultimate conclusion is therefore that the system ought to be abolished completely. Boldrin and Levine are strong believers in "first-mover advantage", or, the early bird catches the worm. In other words, the first person in a particular field has considerable advantages – s/he is off and running before anyone else has even got to the starting line. This confers considerable advantages in marketing, access to resources and the difficulty of others in having quickly to adopt to counter.

As an example, Boldrin and Levine quote Apple, which, long before the patent "phone wars", made substantial amounts of money before any substantial competition emerged. However, it could be argued that this was at least equally the result of Apple's brand strength and of the overall Apple system.

So, given all the opposition to patents in economic academic circles, are there cases in which the granting of a limited, legally-enforceable monopoly is truly unarguable?

On the face of it, it seems that one field in which patents are critically important is that of pharmaceuticals. The provision of new drugs represents an enormous gamble for those who undertake it. From lab bench to pharmacy takes on average 12 years, and, according to a recent cost estimate, can cost as much as $11 billion (yes, you read that correctly, although it has since been disputed and the real cost is nearer $3 billion, which is still seriously expensive). Moreover, only about 1 compound in 5000 will make it past all the clinical trials and regulatory hurdles. The high cost and high failure rate make pharmaceutical development a particularly precarious business. Therefore, the last thing that pharma companies want is someone coming along and simply taking the fruits of all this work, without incurring any of its risks and costs. Some kind of monopoly protection therefore seems essential, otherwise the development of new drugs could be severely curtailed.

The pharmaceutical case is such that most anti-IP commentators see the need to confront it specifically. Stiglitz points out that the industry spends much more on advertising than in R&D. Boldrin and Levine go further in giving the specific example of Novartis, a company with a particularly high R&D expenditure. It reportedly spends 19% of sales on R&D, but 33% on promotion. While this may be true, it does not negate the case for a reasonable return on R&D investment.

Boldrin and Levine also argue that many new drugs are derived from smaller companies, start-ups and university laboratories, some of which are supported by public money. However, it seems highly unlikely, to say the least, that these sources could produce the necessary pharmaceutical innovations in the absence of a commercial focus (and, indeed, a profit motive) in the sort of time frame reached by the industry and demanded by modern medicine.

It is true that the pharma industry is sometimes too greedy for its own good and has an enormous talent for shooting itself in both feet and the head simultaneously. Dubious practices such as "me too" drugs, "evergreening" (patenting minor variations on the main drug patent to try to extend protection, and therefore profits) and buying off competitors, has won it no friends. The attempt to stop the South African government using patented AIDS drugs supplied by Indian generic companies by suing for infringement was a public relations disaster for the industry, requiring an embarrassing retreat. And part of the US *Myriad* case involved the absurdly high price charged for the treatment, thus placing it out of reach for lower income people who were thus effectively condemned to death (in addition, many US health insurance companies refused to pay for it). And there is the tendency to specialise, to use Tom Lehrer's classic line, in diseases of the rich. New medicines for tropical diseases are usually discovered only by accident, and not a lot of effort is put into them, simply because there's no money in them.

There was recently (September 2016) published a report of the United Nations Secretary-General's High-Level Panel on Access to Medicines:

http://www.politico.eu/wp-content/uploads/2016/09/HLP-Report-FINAL-Sept-2016.pdf

The focus of the Panel?

…one aspect of a complex challenge: the incoherencies between international human rights, trade, intellectual property (IP) rights and public health objectives.

It continues:

Policies and agreements related to human rights, trade, intellectual property rights and public health were developed with different objectives at different times. State obligations include duties not only to respect, but to protect and fulfill the right to health. This requires taking proactive measures to promote public health. As reaffirmed by a recent Human Rights Council resolution, ensuring access to medicines, and particularly to essential medicines, is a fundamental element of these obligations. Trade rules and intellectual property laws were developed to promote economic growth and incentivize innovation. On the one hand, governments seek the economic benefits of increased trade. On the other, the imperative to respect patents on health technologies could, in certain instances, create obstacles to the public health objectives of World Trade Organization (WTO) Members….

The incoherencies between the right to health, trade, intellectual property and public health objectives can only be resolved using robust and effective accountability frameworks that hold all stakeholders responsible for the impact of their decisions and actions on innovation and access to health technologies.

In particular:

WTO Members should make full use of the policy space available in Article 27 of the TRIPS Agreement by adopting and applying rigorous definitions of invention and patentability that are in the best interests of the public health of the country and its inhabitants. This includes amending laws to curtail the evergreening of patents and awarding patents only when genuine innovation has occurred.

The reaction of Big Pharma to the report was not unexpected :

http://www.ifpma.org/resource-centre/biopharmaceutical-industry-calls-the-recommendations-of-un-high-level-panel-on-access-to-medicines-a-missed-opportunity-to-genuinely-address-patients-needs/

http://www.phrma.org/press-release/phrma-statement-on-the-united-nations-high-level-panel-report-on-access-to-medicines

As IPFMA (the international pharmaceutical manufacturers' association) puts it:

The environment into which new medicines are released is complex and solutions will be found in patient-centric and systemic approaches, political commitment, and good governance. Key issues to address are financing for health, improvements in health infrastructures, and enhancement of healthcare worker capacity and patients' literacy. The majority of the HLP recommendations fail to recognize these complexities as well as the many existing and innovative efforts already taking place to advance access to care in the last two decades. In addition, the report seems to take a reductive approach to the facts around the pharmaceutical research and development model, carrying the potential of unintended consequences on spurring future medical progress.

i.e., not our fault. So, who's right? Neither – and both. There are elements of truth in both arguments, but both sides are afflicted by the blindness that comes from holding a particular entrenched position. One side would like more-or-less free access to medicines, despite the enormous costs of developing them, the other would prefer to generate smokescreens to obscure what is often its own rapacious behaviour.

Nevertheless, in the end, someone's got to pay for it. Pharma companies aren't charitable institutes, they are businesses, in business to supply a product and make money – the shareholders have to be kept happy with healthy dividends, but the business also needs to make medicines that actually work, otherwise there's no business. In the present system, that's just the way things are, and it makes a solid argument for some sort of monopoly protection for high-risk pharmaceutical research.

How to make available a $30,000 drug to a patient who earns $300 a year? That's a different non-patent problem, and can only be resolved by a meeting of minds of both Big Pharma and governments/international agencies, perhaps to reduce prices in poor countries and/or some sort of subsidy system.

A further example in which good patent cover appears essential is any kind of innovative start-up company – often most of the value of such companies, particularly in the biotech and electronics fields, resides in their patent portfolios. Without protection of novel and possibly revolutionary ideas, such companies would have immense difficulty raising capital for further development.

But is gold-plated patent protection of the pharma type justified for all fields of endeavour? And in all countries? To me, the answer is clearly no. But what would a "fairer" regime look like? And how to augment and regulate such a regime? And how to draw the demarcation lines? Naturally, if I knew, I wouldn't be writing this rubbish, I'd be polishing my Nobel medal on the mantelpiece and perusing the S-Class Mercedes catalogue.

Experts such as Prof. Stiglitz also apparently have not many ideas, apart from his prizes instead of patents one. He points out correctly that the problem is not the dissemination of knowledge (which continues as usual in peer-reviewed publications open for all to read), but the monopolisation of the use of such knowledge. He mentions "poorly-designed intellectual property regimes which reduce access to technology and medicines". However, he doesn't tell us what a well-designed one would look like. Presumably one that didn't restrict (or minimally restricted) access to technology and medicines.

Problem is, nobody, and this includes WIPO (World Intellectual Property Organisation, the specialist UN body dealing with IP), seems to be offering a realistic alternative regime. So, what would a system that gave everyone, to use an Australianism, a "fair go" look like?

First of all, any revised regime would need to encourage innovation, not suppress it. The incompatible views as to whether patents encourage or hinder innovation and the general lack of justification once blind faith is jettisoned suggest that it might be worth adding alternative ways to the mix. Perhaps some reward variation? The old Soviet inventor's certificate idea and Prof. Stiglitz's prize idea have already been mentioned. These were aimed primarily at individuals. Could some variation for corporate/institutional bodies also be envisaged? Perhaps some tax advantages could be conferred in exchange for publication of inventions? Others could then use the technology, but only the originators would benefit from the tax advantage – and of course, having made all the running and solved all the problems of scale-up and production, they would be in the best position to exploit the market.

It would need to include a better deal for poorer countries. It has to be recognised that, no matter how much help they are given, many of these countries are not going to join the developed world any time soon. This is particularly true of those which were colonies of Western countries; they were never given a chance to develop, simply because it was never in the interest of the colonial powers to do so. As a result, they have missed the boat of several stages of technological development, and their brightest and best often go to overseas universities and never come back. Some countries such as the USA have encouraged this trend, to make up for their own increasing lack of scientifically and technologically-trained people. Part of the current US immigration debate is the need to attract to the USA people of talent, to enrich the USA.

The overcoming of this massive distortion of opportunity, substantially historical, partially accidental, partially deliberate, is something that nobody has any idea how to overcome. It requires a universally-accepted single set of standards, something that isn't going to happen any time soon. This, in turn, relies on the invention of an impossibility, completely altruistic mankind.

Access to technology is not enough – there must also be help in building infrastructure, so that the developing world can use this technology. But then, what kind of technology? Better ice cream? Sports cars? What is appropriate? If the whole world were suddenly elevated to the energy and raw materials consumption levels of the USA, the planet would be in diabolical trouble. Take air-conditioning. It was developed in the USA. There it made places liveable; prior to its invention, Washington DC was rated as a "most hazardous" diplomatic posting, because of its unbearable summer combination of heat and humidity. As the developing world (which tends to have hotter climates) came to adopt it, the effect of chlorofluorocarbons on the ozone layer of the atmosphere became known, and suddenly the developing world was being told that it shouldn't have this thing that the developed world had been using for years (and which use had caused the problem in the first place).

This argues for the easier provision of *appropriate* technologies. And who exactly is going to decide on those? It would have to be done on a planet-wide basis. And it would mean the end of the present consumption- and growth-based economic model.

So, if I ruled the world and every day were the first day of spring, my ideal system would have the following features:

- No more "one size fits all". Patent terms and conditions would be tailored to individual country needs. Ditto all other forms of IP. This would be regulated by a universally-recognised organisation

- A higher (and universally recognised) standard of what constitutes an "invention". The sort of trivialities allowed by some patent systems, notoriously the US system, should no longer be patentable. One answer might be that everyone has a "petty patent" system, like the Japanese utility model and German *Gebrauchsmuster* systems, offering relatively cheap, shorter protection and a lower standard of "inventiveness".

- Better provisions for the dissemination of scientific knowledge, unencumbered by restrictive copyright requirements and high costs. Peer-reviewed publication has been the traditional lifeblood of scientific communication – it should be made more readily available.

- A better way of making accessible to the developing world technologies protected by patent appropriate to their needs. WIPO's idea of maintaining the existing patent system and charging lower fees for poorer countries in PCT applications is like applying Band-Aids® to a corpse. This of course does not lie only within the patent area, but within the whole field of international cooperation and development. It would allow access to vital drugs, such as AIDS medicines, at an

affordable price. Expecting patients to pay $30,000 for a drug in a country where the average annual income is $300 is crazy.

- More fundamental research with government funding at universities and scientific civil services such as Australia's CSIRO. Companies are focussed on commercial goals and the need to satisfy shareholders, and are thus not really equipped to do fundamental research – the days when the likes of DuPont could set up Wallace Carothers in a lab and let him do whatever he wanted in the hope (but not certainty) that something useful would emerge (see p.23) are long gone.

Such a regime could only come about if the entire planet signed up to it and it was controlled and organised centrally. Can anyone remotely imagine, for example, the US Congress, with its "everyone but us is out of step" attitude signing up for it?

So, while we're all sitting around, holding hands and singing John Lennon's *Imagine*, we have to realise that the world is beset by a total lack of imagination, plus an overdose of "I'm all right, Jack", that none of this is going to happen, ever, barring some catastrophic change that forces change on us. The developed world is calling the shots, and it is too greedy, too self-centered, its politicians too worried about getting re-elected and therefore placating local interests. It will therefore continue to pay lip service to the idea of fairness and occasionally slightly rearrange the furniture, but it will do nothing substantive. So we professionals in the IP professions can relax, as business as usual will continue, and, as French author Jean-Baptiste Alphonse Karr famously put it, *plus ça change, plus c'est la même chose* (the more things change, the more they stay the same).

GLOSSARY

A glossary of intellectual property terms that are mentioned in the text, plus some others that may be encountered.

abandonment and refiling A common thing to do when **foreign filing** of a patent application is not desired for some reason, e.g., insufficient progress towards a commercial product, but that interest in an eventual patent remains. If the application is completely and irrevocably withdrawn with no rights outstanding (and it is important to put this in the letter of withdrawal), it is as if the application never existed and you can file it again. The **priority date** is naturally lost. The relevant provision in the **Paris Convention** does not stipulate how often this can be done, so everybody does it all the time, but the ***travaux préparatoires*** indicate that the intention was that it be possible only once. Nobody seems interested in finding out. Can't think why…

abstract A short summary (typically 150 words maximum) of an invention required by most countries. Used as a searching/classifying tool only by patent offices and not examined.

abstract ideas Abstract ideas devoid of practical utility have always been unpatentable. However, in the USA, the **Supreme Court** decisions in *Mayo v. Prometheus* and *CLS v. Alice Corp* have added a new layer of complexity to the debate. ***Alice*** extended the ***Mayo*** prohibition on covering "laws of nature" to abstract ideas. The USPTO has issued instructions to its examiners. But, for the purposes of this exercise, what is an "abstract idea"? The Supreme Court's answer is, more or less, "you'll know one when you see one". I guess it's fine if one, like the Queen of Hearts to that other Alice, can believe six impossible things before breakfast…

accelerated examination One of several **USPTO** methods of achieving **expedited examination**. An applicant pays only a nominal petitions fee, but must conduct a search and submit an accelerated examination support document characterizing the search results. There is a further US variant, called **Track 1 prioritized examination**. Use of a **PPH** can also accelerate examination.

account of profits Remedy for **infringement** available in some countries as an alternative to **damages**. In contrast to damages (which are based on the damage suffered by the patentee), account of profits is based on how much the infringer has benefited from the misuse of the invention. It can yield more for the patentee than damages, but is correspondingly harder to calculate. The choice of which to take depends on the circumstances of the case.

Actavis v. Eli Lilly UK **Supreme Court** decision, that introduced the **doctrine of equivalents** into UK law, significantly changing the UK law of patent infringement.

addition of matter to an already-filed patent application Possible for a **priority application** (but the added matter takes as its **priority date** the date of the filing containing it), not possible at all for a **Convention application** based on a priority application, except in the case of a US **C-I-P** application (see **USA**).

addition, patent of A patent which covers an improvement in or modification of a main patent. No renewal fees are payable, but it expires with the main patent. Feature of old British-type patent law, survives in some Commonwealth countries, notably Australia.

acceptance In countries in which **opposition** is pre-**grant** (e.g., Australia), official publication of the intention to grant a patent along with the proposed patent itself. The opposition period runs from the date of this publication.

***Aerotel* test** UK Patent Office test for patentable subject-matter, arising from the decision *Aerotel v.Telco*. It is a four-step affair:

(a) Properly construe the claim;
b) Identify the actual contribution;
(c) Ask whether the contribution falls solely within excluded subject matter; and
(d) Check whether the contribution is technical in nature.

(b) being seen as the most problematic step. Leave to appeal to the **House of Lords** was refused. The **Board of Appeal** of the **EPO** considers it irreconcilable with the **EPC.**

AIA See ***America Invents* Act**.

algorithm Not *per se* patentable as being merely a mathematical method. On the other hand, in current US practice, a patent for software must contain an algorithm or fail for lack of **utility**.

Alice Whereas most people will chorus "**ALICE**? WHO THE *@!?!!#? IS ALICE?", *Alice* to patent people means the US **Supreme Court** decision *CLS Bank v. Alice Corp.* relating to computer-implemented escrow arrangements. The Court held that routine computer implementation of an abstract idea did not make it patentable subject matter. The Supreme Court outlined a two-step process for determining eligibility: (1) determine whether the claim encompasses excluded subject matter and then (2) determine whether the claim includes "something more" sufficient to "transform the nature of the claim into a patent-eligible application." Neither of these is particularly easy to define, but their application has already led to a tightening-up of US practice on the patentability of **computer software** and **business method** patents, much to the horror of many US commentators.

allowance Official notification from a patent office that a patent will be granted.

***America invents* Act** Formally the Leahy-Smith *America invents* Act (AIA), this new US Patents Act, fully implemented in 16 March 2013, represents a major change to the traditional US "everyone but us is out of step" attitude. It introduces features similar to those found in the rest of the patent world, such as a sort of **first to file** and post-grant provisions approximating to a type of **opposition**. (See **USA** for more).

Many US commentators see the enactment of the AIA, especially its post-grant review provisions, as a major error that has destroyed the US patent system (to which almost divine properties are ascribed), but as yet only tinkering at the edges has been done. It has, however, given rise to a vast phalanx of other proposed legislation, seeking to restore Paradise Los – see **US patent law revision proposals.**

American Axle US case that has added (if that is possible) to the utter confusion that surrounds patent eligibility in the USA. The patent related to a method of reducing driveshaft noise, which was bizarrely rejected on the basis that it covered a simple application of a natural law (Hooke's Law) (is there an invention that isn't an application of a natural law?). The Federal Circuit deadlocked 6-6 and the US Supreme Court (notoriously clueless with regard to patent law) denied a petition for it to take it up. See also ***Alice, Mayo Myriad.***

***amicus* brief** (from *amicus curiae* = "friend of the court") A legal brief on a point of law not from a participant in the proceedings. Such briefs are often invited from third parties on contentious matters.

analogous art doctrine US equivalent of the EPO's **neighbouring fields** consideration. Prior art is analogous if it is from the same field of endeavour or if it is reasonably pertinent to the particular problem the inventor is trying to solve. Art from remote fields not normally considered by persons skilled in the art is rarely relevant.

ANDA (Abbreviated New Drug Application (USA)). See **Hatch-Waxman Act**.

Andean Pact See **Cartagena Agreement**.

animals, patenting of See **plants and animals**.

annuity See **renewal fee**.

anticipation Another name for a **novelty**-destroying reference. To be an anticipation, a reference must contain explicitly all the essential features of the alleged invention.

antitrust "Trust" in this regard was famously defined by George Bernard Shaw as "a [business] combination to destroy competition and to restrain trade". Antitrust is a general term for any legal action or provision that seeks to remove restrictions to free trade produced by monopolistic behaviour. The term originated in the USA, most famously in connection with the 1911 break-up of the Standard Oil Trust of John D. Rockefeller under the Sherman Antitrust Act.

Although the word "monopoly" means slightly different things in patent and antitrust law, there is sufficient overlap for there always to have been a natural tension between the two, and one that has never been satisfactorily resolved. As a result, the two have been uneasy bedfellows since antitrust first arrived, and the issue boils to the surface every now and then, recently in the USA with the business of **reverse payments** in the pharmaceutical industry and the huge patent battles in the mobile phone area.

The **EU**, whose basis is the idea of free trade across international borders, is especially strong in anti-competition laws that would act against any restraint in free trade. National patents in EU members (including "European patents") can come into conflict with these. The way out of the conundrum is the proposed **EU patent**.

Apostille A form of document legalisation under the 1961 **Hague Convention**. Formerly, many countries required that patent documents had to be notarised and then legalised by their consulates/embassies. Hague Convention signatories now dispense with consular legalisation with respect to other Hague Convention countries and local authorities apply the Apostille (usually a large rubber stamp) to the notarised document. Of course, really sensible countries require no notarisation or legalisation of any kind…

appeal A legal proceeding seeking to have an earlier judgement or finding overturned. Some patent offices (e.g., USPTO, EPO, JPO) have **Boards of Appeal**.

applicant for a patent May be a real person or a judicial person (company or institution) everywhere. The previous exception, the USA (naturally), where the applicant(s) had to be the inventor(s) and the actual owner of the patent (usually the employer of the inventor(s)) was the assignee, changed with the ***AIA***.

application "Patent" is the name given to a granted patent, i.e., an application that has passed all stages of examination and on which a certificate of **letters patent** has issued. Only at this point does a legally-enforceable monopoly exist. Prior to that, it is an application, and it is an unfortunate thing that people refer to applications as "patents" in an understandable but incorrect shorthand. This hasn't been helped by the almost universal **early publication** of unexamined applications, which are often mistaken for granted patents and which have been known to trigger massive panics, when the claims at their unexamined broadest are seen.

"application patent" Mythological beast, born out of the fear of companies, which supply ingredients for incorporation into other companies' products, that the latter could patent the use of the ingredient in the particular application and block the supplier from selling the ingredient to any other company for the same use and putting the product company in a position to force down the supplier's price in return for a licence to sell to others. Complete humbug – the normal considerations of patentability apply to such applications, and they can only be granted if a **selection patent** is involved. Still, when patenting an ingredient, it is wise to put as many potential uses as possible into the application.

ARIPO African Regional Industrial Property Office, covering Ghana, Gambia, Kenya, Lesotho, Malawi, Mozambique, Sudan, Sierra Leone, Swaziland, Tanzania Uganda and Zimbabwe (but not South Africa). Can be designated in a **PCT** application. Unlike **OAPI**, it is possible to designate ARIPO countries regionally or as individual countries.

"armchair example" See **"prophetic example"**.

Artificial Intelligence Can an AI-originating invention be patentable? Both the **USPTO** and the **EPO Boards of Appeal** say no, because an inventor has to be a natural or legal person. However, South African recently (August 2021) allowed an application by Dr. Stephen Thaler, in which the invention was generated by DABUS, an artificial entity.

South Africa doesn't examine, but Australia does, and a refusal by the Commissioner of Patents for the same reasons as given by the EPO and the USPTO was overturned by the Australian Federal Court in *Thaler v. Commissioner of Patents* ([2021] FCA 879), sending the application back to the Patent Office for consideration on the merits. In his judgement, Beach J. said there was no reason to deny that an artificial entity can be an inventor, pointing out that the ordinary meaning of "inventor" does not exclude non-humans. Whether this has any impact on the rest of the patent world remains to be seen.

Arusha Protocol. Regional **ARIPO** protocol for the protection of new varieties of plants.

assignment In its simplest meaning, the transfer of ownership of something from one person to another and the legal document used to achieve this. In patent matters, it may refer to the assignment of patents and patent applications from one company to another, for example, as part of the sale of a business.

It also refers to the transfer of the rights in an invention from an inventor to a company as part of the inventor's employment. If an inventor is an employee of the organisation that is the applicant for a patent, the inventor's contract of employment will generally require that all rights in any inventions s/he makes are the property of the organisation, and an assignment is therefore often unnecessary. However, if the inventor is not an employee of the applicant (e.g., if the applicant is a holding company), it is better that s/he assign the rights in the invention directly to the applicant. This is a bit of legal legerdemain, because there's actually nothing to assign, but it does in a single jump what would otherwise require two (assignment of invention to employer, proof that applicant had right to invention because of relationship with employer). In addition, some countries will require an assignment specifically for that country.

An assignment is especially important in cases where an inventor is not an employee, e.g. an outside contractor. The assignment must be concluded before the filing of a **Convention application**. If this isn't done, the applicant may not have the **priority right**, and publication of that contribution by another party within the **priority year** may constitute prior art against part of the application. This has actually happened (the UK case *Edwards Lifesciences v. Cook Biotech*). The issue is still unclear, but an early assignment would remove any doubts.

attributable owner The actual owner of a US patent. In the fight against **patent trolls** and **non-practicing entities**, the USPTO is proposing rules that will make the ultimate owner identifiable. The proposed rules would require that the attributable owner be identified at certain times, e.g. at filing a patent application, when there is a change in the attributable owner when the application is pending, at the time of payment of the issue fee or any maintenance fees, and when a patent is involved in any type of post-grant review, such as *ex parte* reexamination or proceedings before the Patent Trial and Appeal Board.

Applicants and patent owners will generally be given three months from the date of these events to provide the PTO with this information. Failure to do so will result in the patent or application being deemed abandoned.

Given that patents are often quite legitimately owned by organisations with complex structures (holding companies, subsidiaries), this could be quite a complex business.

Australasian patent See **trans-Tasman patent**

auxiliary request See **main request**.

barrister In British-type legal systems, a lawyer who presents cases in court. In some such professions, lawyers qualify as "barrister and **solicitor**", but usually specialise in one.

The top rank of barristers are the Queen's Counsel (QC) (KC when the monarch is a he), sometimes known as "silks" because of their particular robes. Like barristers, QCs wear silly wigs, but they cost a lot more (probably both QC and wig). Specialist QCs with technical backgrounds are frequently encountered in high-profile patent cases in British-type law countries (e.g., UK, Australia, New Zealand). The title is being replaced in some Commonwealth countries by the title Senior Counsel.

Bayh-Dole Act More properly, the *University and Small Businesses Patent Procedures Act*. US legislation that has the effect of permitting a university, small business, or non-profit institution to patent inventions sponsored at least partially by US Federal funding (previously such inventions belonged to the US Government as of right). In return, the US Government receives a free licence to operate or have operated the patent. Ability to license the technology is severely curtailed. Generally regarded as an extremely important piece of legislation that was instrumental in the release of many important pharmaceuticals on to the market.

It includes "march-in" rights (the possibility of forcing a patent owner not making good faith attempts to meet the needs of the public to do so), and it has been suggested controversially that these be used to control high US drug prices, something never intended by the legislation.

BPCIA Biosimilars Price Competition and Innovation Act. US **biosimilars** legislation, along the lines of **Hatch-Waxman**.

Beauregard claim Named for the **CAFC** case in which they first surfaced, a claim to instructions for a computer on a computer-readable medium such as a floppy disc or a CD-ROM. Not so commonly encountered any more in these days of Internet transfer. And in *Cybersource v. Retail Decisions*, the CAFC threw the whole business into reverse by holding them no longer allowable. More to come from this one

best mode It is a requirement of some patent offices, notably the **USPTO**, that an inventor must describe the best method known to him/her of performing the invention. Moreover, previously, in the particular case of the USPTO, if a ***continuation-in-part application*** (see under **USA** below) was involved and the best mode had changed, it was required that best mode be updated. The US best

mode requirements have changed with the *AIA* – the failure to disclose best mode is longer be a ground for claim invalidation in validity or infringement proceedings. However, it is always worth including it

bifurcation The German practice of holding infringement suits and counterclaims for invalidity as two different court proceedings, as opposed to UK courts, who hold them as a single hearing. This issue has emerged as a possible (and hotly-debated) stumbling block to the proposed **EU patent**, with some German lawyers (naturally) seeing it as no problem at all and some UK lawyers seeing it as something tantamount to Armageddon, as it has the possibility of increasing costs (the very thing that the EU patent is supposed to prevent). The argument continues.

Bilski Correctly *in re Bilski*. US **CAFC** decision on US patentable subject matter that has restricted the patentability of computer programs and business methods. *Bilski* provided a **"machine-or-transformation" test**. The **Supreme Court** decision agreed that *Bilski* was unpatentable, but disagreed that "machine-plus-transformation" was the absolute authority. So, computer programs and business methods remain patentable. *Bilski* does seem to have had a narrowing effect, in that purely abstract ideas, even when camouflaged, are not being allowed. The whole business method business will be tightened up by the ***AIA***.

biosimilar A pharmaceutical product in which the active substance is made by or derived from a living organism, usually by recombinant DNA of controlled gene expression methods. The name is derived from the fact that, unlike **generic** drugs, biosimilars are only similar to the original product. In the USA, they are regulated by the 2009 Biologics Price Competition and Innovation Act (BPCIA), which has similar effects on them to the **Hatch-Waxman** Act for pharmaceuticals. See **"patent dance"**

biotechnology Biotech inventions, which usually reside in an artificially created state of affairs, even though they generally involve the manipulation of natural materials, are usually no problem. A major decision in the US was ***Chakrabarty***. There have been recent disputes in the USA as to where to draw the line (e.g., ***Mayo v. Prometheus*** and ***Myriad Genetics***). See **Biotech Directive**, **human beings**.

Biotech Directive Directive 98/44 seeks to harmonise laws relating to the patenting of biotech inventions across the **EU**. It permits the patenting of biological material that is isolated from its natural environment or produced by means of a technical process may also be the subject of an invention. Among the things that are not patentable are, plant and animal varieties, essentially biological processes for the production of plants or animals, such as crossing or selection, the human body and the simple discovery of one of its elements, including the sequence or partial sequence of a gene (although an element isolated from the human body or produced by means of a technical process, including the sequence or partial sequence of a gene, may constitute a patentable invention).

Inventions that would be contrary to public policy or morality are unpatentable. These include processes for cloning human beings, processes for modifying the germ-line genetic identity of human beings, uses of human embryos for industrial or commercial purposes and processes for modifying the genetic identity of animals which are likely to cause them suffering without any substantial medical benefit to man or animal, and also animals resulting from such processes.

"black box" filing An Indian patent version of Limbo, the place between the Heaven of chemical compound patent protection and the Hell of no chemical compound patent protection. India's accession to **GATT-TRIPS** meant that it had to permit chemical compound patents (it previously didn't), as soon as the law could be suitably amended. In the intervening period between accession and enactment of new law (exactly 10 years), it was possible to file applications for chemical compound protection, but they were not examined until the patent law changed (1 January 2005); such applications were figuratively in a "black box" (they were sometimes referred to as "mail box filings"). Bizarrely, third parties who marketed the compounds before the black box period ended

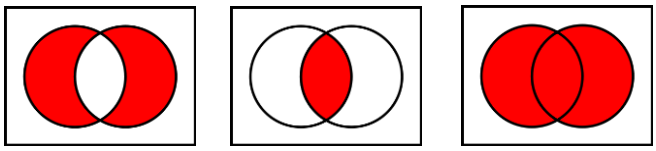
were not prevented from continuing to do so – the best that patentees will probably get is a (low) royalty.

block exemption See **Treaty of Rome**.

Board of Appeal A patent office body which can hear appeals against patent office decisions, such as rejections. The **EPO** Boards of Appeal also hear appeals against decisions of the EPO's Opposition Divisions. In this, they are acting more like courts. EPO Boards of Appeal decisions may be reviewed by the **Enlarged Board of Appeal**, but only on certain defined procedural grounds. Apart from this, the EPO Board of Appeal decisions are final, and not subject to court review. This position is being contested in the German Constitutional Court and is one of the Spanish objections to the proposed **Unitary Patent** system. The USPTO has the Patent Trial and Appeal Board (PTAB), formed under the **AIA**..

Bolar exception US law provision that allows **clinical trials** in respect of the launch of a **generic** drug to be carried out prior to the expiry of the patent on the drug, using the patented drug itself, without these being considered **infringement**. The **CAFC** decision in *Roche v. Bolar* to the effect that such trials constituted infringement was negated by the passing by Congress of the **Hatch-Waxman Act**. The US Supreme Court decision in *Merck v. Integra* extended the doctrine further by allowing **experimental use** of a patented invention for the purpose of releasing "second generation" drugs (e.g., drugs that use the patented compounds in new ways as soon as the patent has expired)**.** The European Community has introduced a Bolar-type exception, to try to reduce the confusing variation in European experimental use provisions (broad in Germany, narrow in the UK).

Boolean operators Used in searching patent databases. The three used are NOT, AND and OR, and they are performed in that order (with anything in brackets being done first). So, if the two circles below are X and Y, these diagrams depict respectively X NOT Y (excludes anything with either X or Y), X AND Y (includes everything with both of X and Y) and X OR Y (includes everything with either of X or Y).



Thus, if X is "aluminium" and Y is "bicycle", X NOT Y excludes anything that is either a bicycle or aluminium, X AND Y includes anything that is both (steel bicycles and aluminium saucepans are excluded) and X OR Y includes anything that is either (steel bicycles and aluminium saucepans are included).

boycott declaration Document demanded from patent applicants by Arab countries to the effect that the applicant had no commercial dealings with Israel – failure to comply meant forfeiture of intellectual property rights. Part of the Arab League boycott of Israeli goods and run by the Central Boycott Office in Syria, it was once universal in the Arab world, but has never been applied consistently. After a period of decline, it seems to be making a minor comeback (Iraq is now requiring it). Oddly enough, Syria no longer requires it.

BPICA See **biosimilar**.

"Brexit" Popular name for the UK's leaving the **EU** in the aftermath of a referendum vote on 23 June 2016 and due to take effect on 31 January 2020. A Brexit will have major effects on IP matters – it means the end of the UK as part of the EU Trade Marks and Community Designs systems. The UK had ratified the agreements leading to the establishment of the **European Unitary Patent** and the

Unified Patent Court, but has decided not to participate, because the **CJEU** is the final court of appeal, and the UK Government is "taking back control".

The UK will remain a Contracting State of the **EPC** (not an EU organisation) and the filing of current European patent applications from and designating the UK will not be affected. However, this might be jeopardised should the UK align its domestic patent law more closely with that of the USA as part of a trade deal. This has produced some concern within **CIPA**, so much so that it had an expert prepare a paper on the advantages of the UK remaining within the EPC. The UK Government has said that it will an EPC Contracting State, but given that one can trust the UK Government roughly as far as one can throw the *Queen Mary*…

Brussels Convention (*Brussels Convention on jurisdiction and enforcement of judgements in civil and commercial matters* 1968) See **cross-border injunction**.

Brüstle A major **CJEU** decision (C-34/10) on stem cells. Prof. Dr. Oliver Brüstle applied for a patent on a technique for creating nerve cells from human embryonic stem cells. The CJEU held that "Article 6(2)(c) of the [EU Biotechnology] Directive excludes an invention from patentability where the technical teaching which is the subject-matter of the patent application requires the prior destruction of human embryos or their use as base material, whatever the stage at which that takes place and even if the description of the technical teaching claimed does not refer to the use of human embryos". The patent was revoked by the EPO.

Budapest Treaty International treaty which provides for the deposit of samples of **microorganisms** in an **International Depositary Authority** for the purposes of patent publication. When a patent application relating to a microorganism is published, a third party can obtain a sample. This can be used only for experimental purposes. (See also **expert option**). Contracting parties (May 2013) 78.

Bundesgerichthof Germany's Supreme Court and the ultimate authority on all matters patent. Most German patent cases never stray beyond the ***Bundespatentgericht***, but it has happened, most (in)famously in the ***Formstein*** decision.

Bundespatentgericht German Federal Patent Court, a specialised court dealing with patent matters. Appeals from decisions of the German Patent Office are heard by this court and *Patentanwälte* (German Patent Attorneys) are entitled to present cases before it. An appeal to the Federal Supreme Court (*Bundesgerichthof*) is possible, but rare.

business methods Patentable in the USA since the *State Street Bank* decision, and apparently still so after the Supreme Court's ***Bilski*** decision. Examples include Amazon's "one-click" on-line ordering system. Other countries have followed the US lead or are leaning in that direction (Japan, Australia), but the **EPO** has not and doesn't seem likely to. The ***AIA*** will be more restrictive as to what business methods are patentable **,**e.g., various tax strategies will be ineligible for patent protection, but transitional provisions regarding already-granted business method patents came into force on 16 September 2012. See also **covered business method patent**, **technological invention**.

CAFC Court of Appeals for the Federal Circuit, US Federal Court that hears patent appeal cases.

Cambodia As of 1 March 2018, European patents can be validated in Cambodia, even though it is not an EPC Contracting State.

candour See **complete candour**

Caribbean Patent Convention Patent convention covering the Caribbean region expected to come into existence in 2017. Countries as yet unknown, but since it will be launched under the auspices of Caricom (Caribbean Community), it will probably cover at least the full members:

http://caricom.org/about-caricom/who-we-are/our-governance/members-and-associate-members/

Cartagena Agreement. Sometimes known as "the Andean Pact" (Communidad Andina (CAN)). A Latin American free trade agreement governing the members of the Andean Community (Bolivia, Colombia, Ecuador, Peru – Venezuela was a member but is contemplating rejoining). Previously notorious for restrictive, patentee-unfriendly laws, especially on patent term and compulsory licensing, the members adopted a harmonised intellectual property law in 2000, which brought the countries into line with the **GATT-TRIPS** provisions, and which bears a considerable resemblance to the provisions of the **EPC**.

Cartagena Protocol see **Convention on Biological Diversity**

case law The interpretation of the law as set forth by a court. The courts are the ultimate judges of what the law actually means. In the case of patents, this means that the meaning of a patent is what a court says it is. In **common law** countries, the decisions of the higher courts, especially the US and UK **Supreme Courts,** on a legal principle are binding on all lower courts, and a lower court can only differ if it can show that the principle does not apply to the case before it.

Catnic In full, *Catnic Components v. Hill & Smith.* Major **House of Lords** decision on claim interpretation. Claims, said their Lordships, should be given a "purposive construction", that is, they should be interpreted in the light of the art field and its practices, and not in isolation. Thus, as in the *Catnic* case, if part of a door frame was stated in a patent claim to be "vertical", the art-recognised practice that a couple of degrees out of the vertical was of no practical consequence meant that this variation was also encompassed by the claim. Thus, someone making a door frame that was 85° to the horizontal (regarded as acceptable in the art) was an infringer.

"cease and desist" A type of warning letter, sent out by a patent proprietor to an alleged infringer of the patent. **Threats** of any kind should be avoided. An initial letter to an alleged infringer should be strictly factual and correct, stating no more than (a) it is believed that the other party may be infringing, (b) inviting the other party to cease immediately from the offending action, and (c) stating that prompt compliance will remove the need to consider other legal remedies.

certificate of correction Certificate affixed to the front of a US patent, showing an error made by the applicant in the patent and its correction.

certiorari See **writ.** Also **Latin.**

Chakrabarty In full, *Diamond v. Chakrabarty*. Major US **Supreme Court** decision that permitted, for the first time, the patenting of "life" (genetically-engineered microorganisms useful for cleaning oil slicks).

Chapter I Compulsory part of the **PCT** procedure. It involves **International application**, **International Search**, **International Preliminary Report on Patentability, International publication** and entry into the **National/Regional Phase** 30 months after **priority**. Some countries still have the old 20 month deadline, with 30 months only being possible if **International Preliminary Examination** is "elected", but there are few of these and all countries will eventually change to 30 months.

Chapter II Optional part of the **PCT** procedure. It involves **International Preliminary Examination**. It must be "elected" (that's the technical term) before 22 months from application or **priority**, or within 3 months of the issuing of the **International Preliminary Report on Patentability**, whichever later**.** Formerly, this was the only way to extend the deadline for entry into the **National/Regional Phase** until up to 30 months from application or priority, but this older provision now applies to only a few countries and will disappear in the near future. (see **Chapter I**).

characterising claim A type of claim favoured by (and in some cases almost insisted on) by some patent offices. Basically the claim form is

(known art) characterised in that (inventive material)

Sometimes useful, sometimes highly inappropriate.

check digit The number after the decimal point in some patent application numbers, e.g. GB 0676543**.2**. It's not part of the application number, but is there purely to make sure that the particular patent office has recorded the number correctly. It is generated by adding together the digits of an application number in a particular way, and if this mathematical operation gives a different digit, the number has been wrongly recorded.

China "Why file there? They'll only copy it" is the inevitable comment. The People's Republic of China is not yet as good at IP as the western countries, but in a relatively short time (China had no patent law at all until the 1980s) it has come a very long way. The Chinese Patent Office is a strict examining patent office and the Chinese courts, initially completely unfamiliar with IP cases, are improving. In a big country comprising one-quarter of all mankind, detection of infringement remains the big problem, but the problem for patent owners is tiny in comparison with that of **copyright** owners (CDs, DVDs, computer games and software).

CIP application See under **USA**.

citation Prior art discovered by a patent office in a search and published in a **search report** or during **prosecution**.

civil law Legal system in which laws are codified into a system and form a primary source of law, in contrast to **common law**, which is based on judicial precedent. It began with Roman law and is now the most widespread legal system in the world, followed by about 150 countries, including most of continental Europe, Russia, China and most of Latin America (Scottish law is a hybrid of the two systems). In civil law jurisdictions, case law is secondary to, and subject to, the written code. The differences can result in differences as to how intellectual property cases on the same subject-matter are decided in different countries.

CJEU (Court of Justice of the European Union). Formerly **ECJ**. Transnational high court of the **European Union** and the ultimate arbiter of EU law, including intellectual property law disputes. A European and European Union Patent Court is projected to handle cases relating to any future **EU patent**.

claiming by result Allowed when no other identification is possible. The achievement of the result must be within the skill of the skilled person. The classic case is the UK's ***No-Fume*** *Ltd. v. Frank Pitchford* (see p.37). But you need to be careful of the **"free beer"** situation.

claims A series of (usually grammatically disastrous) statements at the end of a patent **description** whose function it is precisely to define (and therefore to set boundaries on) the extent of monopoly of

a patent. They start with a main claim (the broadest) and get successively narrower (and usually more realistic!).

See also **characterising claim, composition claim, first medical use claim, "free beer" claim, Jepson claim, kit of parts claim, Markush claim, omnibus claim, process claim, product claim, second medical use claim, second non-medical use claim, use claim.**

claims fees In most countries, extra fees are payable for claims above a certain number. The number of free claims is typically 10. The USA is relatively generous in allowing 20 free claims. On the other hand, Japan and S. Korea levy fees on all claims above one. You can file in Japan with any number of claims you like, but the greater the number of claims, the higher the examination fee and the renewal fees after grant. Careful consideration of Japanese claim numbers is always a must at examination request time.

claims, interpretation of See **interpretation of claims**

classification The organisation of patentable subject-matter into fixed categories of technology, to make it more easily findable in a subject-matter search. The first thing patent offices do with newly-received patent applications is to classify them, so that (a) they can be assigned to the examining group responsible for that subject-matter, and/or (b) they can be added to the stock of **prior art** for examinations of future patent applications. The major patent classification system in use is the **International Patent Classification (IPC)** of **WIPO**, but a number of highly-developed national classifications are still in use, e.g., the USA. **Harmonisation** of the various patent classifications is being actively pursued – see **Cooperative Patent Classification.**

clearance See **patent clearance.**

clinical trials Trials of pharmaceuticals carried out to meet national requirements of efficacy and safety, prior to registration (permission being given to put the pharmaceutical on the particular national market in respect of a particular **indication**) In some cases, clinical trials of **generics** made prior to the expiry of a patent on a pharmaceutical are not considered **infringement**, even though these can be seen as a form of **springboarding**. See also **Hatch-Waxman Act**.

cognation The combining of a number of **priority applications** at **foreign filing** time to give a single application. This often happens if an invention has developed over the **priority year** and further aspects have been covered by additional patent applications.

collateral estoppel See **issue preclusion**

collective patenting Experimental concept by the Japanese Patent Office, which will allow the protection of a packet of associated intellectual property rights covering a single commercial concept. Thus, patents, trade marks and design applications would be evaluated in the light of an applicant's overall business strategy. Whether this will be adopted permanently remains to be seen.

commercial success A **secondary indication of inventiveness**, but not conclusive in itself.

commercialisation during priority year Be very careful here. During the priority year, show or publish only if you're absolutely sure that all the features of what you're showing are covered by the priority application. If they're not, file a new application covering them, prior to publication.

commercialisation prior to patent filing. In nearly every country in the world, **NO**.

Exceptions (few of them) are countries such as the US, which have a **grace period** that allows publication prior to filing a patent application. However, such a publication will destroy novelty in any country that doesn't have a grace period. Therefore, any showing to potential customers before filing should be done under confidentiality agreement, and there should be no commercial transaction. If at all possible, a patent application should be filed before any sort of commercialisation or offering for sale.

common law Legal principles covering individual rights, some of which date back to before the Norman conquest of England (1066) and based entirely on precedent. Common law is one of the major bases of the legal systems of the British Commonwealth and the USA, and it remains an influence on the interpretation of documents. See also **equity**

Community patent See next item.

Community Patent Convention (CPC) A Convention that was intended to allow for the granting of unitary patents covering the countries of the European Union - unlike the **EPC**, it would not have been possible to select or ignore particular countries. Also unlike the EPC, there would have been a single **revocation** procedure. Potentially cheaper than the current European set-up. It was thought that it would come into effect shortly after the **PCT** and **EPC** in 1979, but it didn't, courtesy of major disagreements over languages to be used. The corpse has recently been disinterred and rechristened the **EU Patent**.

"complete candour" Required of all applicants before the **USPTO**. It includes a duty to disclose all known prior art to the USPTO within three months of it coming to the applicant's notice. Failure to do so can have serious repercussions, should it ever come to light. Recent US developments in the field of **inequitable conduct** have stretched this duty even further.

complete specification In old British law, a provisional could be a chatty little document, providing the invention in broad outline – it was the job of the complete specification, filed up to one year later to be, er, complete. This approach has largely disappeared, and the priority/**provisional** application must make a complete disclosure of the invention, in order for priority to be legitimately claimed. Australia is one of the last holdouts, but the **"Raising the Bar"** Act will change this.

composition claim Claim covering a specific composition (this, plus this, plus this, plus this). Not the most desirable claim to have, but can be useful and should not be ignored.

"comprising" Every patent attorney's favourite word. The traditional meaning is "including" (i.e., must have these elements, but can include other non-essential elements), and this is how, e.g., the **EPO** reads it. However, the Oxford Dictionary says that it can also mean "consisting of" (i.e., must have these elements, and nothing else), and some recent Australian court decisions have occasionally interpreted it in the latter manner. Thus, to be used with caution.

compulsory licence A licence which is obtained compulsorily by a third party on application to a court because a patentee has not worked his patent to a sufficient extent in a particular country (see **working**). The **Paris Convention** contains provisions for the obtaining of compulsory licences, but some countries have much stiffer ones (not so many any more in these **WTO** days).

computer-implemented inventions This and the following entry overlap to a substantial degree. At what point does a computer-implemented process move from an unpatentable "abstract idea" (as per *CLS Bank v. Alice*) to a patentable invention? The US **CAFC** considered (again) where the line should be drawn, and succeeded in creating more confusion. The **EPO** insists on a **technical effect**.

computer software Patentable in some countries (e.g., USA, provided the program has **utility** – a patent application defining only a program would be rejected), but not in others. Although the **EPC** specifically prohibits the patenting of computer programs, the **EPO** will allow computer program-based applications, provided there is a "technical effect", that is, the computer program must be part of a solution to a technical problem, and not merely result in a computer operating in a particular way. Thus, a financial program, allowable in the USA, is not patentable in Europe. An attempt by the EU Commission to change this and allow computer programs to be patented failed in 2005.

In *CLS Bank v. Alice*, the US **Supreme Court** held that computer implementation did not confer patentability on an abstract idea. The most likely outcome will be a narrowing of the scope of future software patents (some of which have been absurdly broad). It brings US practice more into line with EPO practice.

See also **Beauregard claim**.

conception One of the criteria in deciding who has the right to an invention under the "first to invent" principles of the USA. See **USA *first to invent*** below. Conception is "who thought of it first?" and is verified in many US companies by signed and witnessed statements of invention or lab notebooks. Its value has been much diminished by the end of first-to-invent under the ***AIA***, but it will continue for older cases.

confidentiality See **secrecy**.

confirmation, patent of See **revalidation**.

conflict of interest What happens when a private practice firm of patent attorneys finds itself representing both sides of a patent conflict. In days of old, when people were more honest and/or honourable and/or far less greedy than they now are, the solution was to pass both clients to other attorney firms. However, many now keep one (the more lucrative one naturally), and I know of one case where a firm tried to keep both, going as far as physically walling off the group handling one of the clients from the rest of the firm.

consonance See **USA *restriction requirement***

continuation application See under **USA *continuing prosecution application.***

continuation-in-part (CIP) application See under **USA**.

Contracting States Those states which are party to an international agreement. The term is applied mainly to **EPC** and **PCT** states.

contributory infringement Infringement where a party does not commit an infringement directly but "contributes" to an infringing act by doing something that inevitably leads to infringement, for example, by supplying something which itself is not an infringement, but whose only use is an infringing use, or by supplying it with instructions as to how to use it in an infringing manner.

Convention application An application made under the **Paris Convention**, claiming **priority** from an earlier first application in another Convention country. Most (but not all) countries allow **internal priority**, the claiming of priority from an earlier application in the same country (in the USA, only possible if the earlier application was a **provisional**).

Convention on Biological Diversity (CBD) An international Convention whose object is "the conservation of biological diversity, the sustainable use of its components and the fair and equitable

sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding". It will affect patent subject-matter that seeks to make use of genetic resources from elsewhere.

There are two Protocols, the Cartagena Protocol and the Nagoya Protocol. The Cartagena Protocol (*Cartagena Protocol on Biosafety to the Convention on Biological Diversity*) governs the movements of living modified organisms resulting from modern biotechnology from one country to another. The Nagoya Protocol (*Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity*) applies to genetic resources that are covered by the CBD, and to the benefits arising from their utilization. The Nagoya Protocol also covers traditional knowledge (TK) associated with genetic resources that are covered by the CBD and the benefits arising from its utilization.

The ratification of the Nagoya Protocol by the 50th state (Uruguay) means that the treaty came into force on 12 October 2014. The date from which the whole shebang starts to function has yet to be gazetted. For EU countries, the interesting bit is "Regulation No 511/2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union".

It remains to be seen how this will affect patentees, particularly the pharmaceutical industry, which is suffering from a drying-up of pipelines and which wants to exploit unexplored genetic resources in, for example, tropical rainforests.
Two challenges by consortia of Dutch and German plant breeders against the EU adoption of Nagoya were refused by the **CJEU**.

Convention date The anniversary of the date of filing of a first patent application from which it is intended to claim **priority** under the **Paris Convention**.

Convention priority A concept which is one of the main features of the **Paris Convention**. If a person files an application in a Convention country, and then files the same application in a second Convention country within one year of that original filing, s/he is entitled to claim the date of that first filing as his /her **priority date**. In the event of a conflict with someone claiming the same invention, the applicant with the earlier priority date has the right, even if the other party physically filed first in the second Convention country. Prior to the arrival of the ***AIA***, the USA's own national "first to invent" system overrode the Convention priority date (see within and **USA *first to invent*** below), but no longer. Priority must be claimed formally (usually on foreign filing in the country), usually by lodging a certified copy of the **priority document**. See also **non-Con filing**.

There remains in existence an old "Inter-Imperial Convention" by which priority could be claimed from a British national application in non-Paris Convention Commonwealth countries. Previously mainly relevant to India and Pakistan, but India's accession to the Paris Convention (December, 1998) and Pakistan's membership of the **WTO** have essentially reduced its relevance to nothing.

conversion into national applications (EPC) (To the best of my knowledge, this has never happened, so this falls into the category of "useless information" and you can stop reading here, if you want). Many **EPC** Contracting States require that European applications be filed via their national patent offices, on the grounds of national security. The patent offices must forward the application to the **EPO** within 13 months of application or **priority** date (usually meaning within one month of receipt). If they fail to do that, the European application no longer exists and a mechanism for conversion into national applications is the only salvation. It's a very rusty mechanism.

Cooperative Patent Classification (CPC) A proposed joint **classification**, which seeks to harmonise the very different US classification and the **ECLA** (European Patent Classification) used by the EPO. It is intended to come into use in 2013.

copyright An **intellectual property** right initially conceived as a protection for written works, later expanded to cover all works of literary or artistic merit. Now covers things as disparate as blueprints, architectural plans, computer programs and perfumes (yes, really, after the *Lancôme* decision in the Netherlands). Copyright does not give an exclusive right, only protection from copying, i.e., if you come up with a copyrighted work entirely independently, you cannot be stopped from making and selling it. Copyright is automatic under the Bern Convention – no registration is necessary, but it is still possible in some countries (e.g., the USA) and may be advantageous. Copyright generally expires at the end of the year 70 years after the death of the author of the work, but for recordings the term is 50 years. And in the USA, the so-called *Sonny Bono Act* extended some US copyright terms to 95 years (they've got you, babe).

In general, patent documents are NOT protected by copyright. However, under US law, it is possible to protect parts of a patent by copyright. Such parts could include software code, prose, or particular schematics. The patent must include a copyright notice, allowing reproduction of the document, but otherwise reserving copyright.

Recently, some US publishers have threatened law firms and others with copyright infringement actions for supplying copies of publications as prior art to the USPTO under the applicant's **duty of disclosure**. The USPTO has stated that it regards this as "fair use" under the US copyright law. Nevertheless, for reasons of copyright, the USPTO's **PAIR** system contains no non-patent prior art.

corporate veil A US legal concept (in State law) that separates the personality of a corporation from those of its shareholders, thus rendering them not personally liable for any debts or other obligations of the company. It can be lifted under some circumstances. For example, an officer of the company who is personally responsible for the provision and sale of a patent-infringing article by the company may be personally liable.

correction of errors in patent applications See **errors in patent applications**

"could-would" An **inventiveness** test used by the EPO. If a **person skilled in the art** could have done something, this is not necessarily destructive of inventiveness. The question is, would s/he? This is assessed in the light of the known art and what it teaches. See also **obvious to try**

countries where patent cover isn't possible Not so many any more, and none of any great importance - Eritrea, Maldives, Marshall Islands, Micronesia, Palau, South Sudan, East Timor, and Somalia.

country codes Two-letter codes recognised by the ISO and used to identify countries in patent documents. Most are intuitive or already well known from car nationality plates (FR for France, US for the USA, GB for the UK, CH for Switzerland), but some are less obvious (EE for Estonia, HR for Croatia). Most of them can be found on the PCT list of countries on p.141.

court Courts of law are the ultimate authorities as to what a patent covers. It's an expensive way to find out, so one should avoid them wherever possible.

covered business method patent A new category under the ***AIA***. It means "a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration or management of a financial product or service, except that the term does not include patents for technological inventions". The definition of "technological invention" is hardly a

model of clarity, the official USPTO release stating that is it defined on a case-by-case basis on the basis of whether the claimed subject-matter recites a novel and unobvious technological feature and solves a technological problem using a technical solution. (It sounds frighteningly European…).

The covered business method review was a special transitional programme within the USPTO's inter partes review (IPR) system inaugurated by the ***AIA*** (see **USA**), to which particular criteria applied. The programme is intended to end on 16 September 2020.

CPC Used to mean **Community Patent Convention** (RIP), but now means **Cooperative Patent Classification**.

cross-border injunction A feature of **European Union** law, which has arisen out of the non-unitary nature of the **European** Patent and the fact that **infringement** actions must be pursued in national courts. Dutch courts in particular have sought to use provisions of the Brussels Convention (*Brussels Convention on jurisdiction and enforcement of judgements in civil and commercial matters* 1968) to try to take action simultaneously against infringers in the Netherlands and other EPO Contracting States, without resorting to the national courts in those other states. Many countries disagree completely with the Dutch approach, the Dutch themselves were having second thoughts and early **CJEU** decisions cast doubt on the whole business. However, the recent CJEU *Solvay/Honeywell* case and the *Actavis v. Eli Lilly* case in the UK (in the case of declarations of non-infringement) have resurrected the business.

Ultimately, only the introduction of the **EU Patent** will solve the problem.

cross-licensing What often happens when two parties have patents that overlap and where they can't work their own patents without the permission of the other parties. They license each other. This is the usual outcome of a **selection patent** case, when the party with the later, dominated patent has discovered an unusually valuable selection lying within the claims of the earlier patent, but not specifically disclosed by it. Also a feature of so-called **patent pools**.

Crown use See **Government use of patents**

damages Monetary compensation awarded by a court to the patentee of an infringed patent after a successful **infringement** action. It is based on an assessment of the damage suffered by the patentee as a result of the infringement, the principle being that the patentee should be placed in the position that s/he would have been in had the infringement not occurred (the test applied is the so-called "but for" test). This is often easier said than done, and an award of damages rarely ever compensates completely for the losses actually incurred, although in the USA, negligence or bad behaviour can be punished by treble damages. In some countries, there exists the alternative of an **account of profits** (based on how much the infringer profited from the infringement). The choice of which one to take is dependent on the circumstances.

data exclusivity The period during which a **generic** drug manufacturer cannot rely on the data of the original manufacturer to support approval. The US **Hatch-Waxman Act** provides for a data exclusivity of 5 years for new molecular entities (with the possibility of a patent challenge after 4 years). The equivalent European period is 10 years.

The US is currently debating data exclusivity for biological molecules (there is currently none).

Daubert Standard In US practice, rules as to whether expert witness evidence is admissible in a court case. Now the standard in US federal cases, superseding the earlier Frye general acceptance standard (which still applies in many US state laws).

decision The final result handed down by a court or patent office tribunal on a contested matter. The date of a decision may be the starting point for a deadline, such as an **appeal**. Decisions on the interpretation of law can be **precedents** in further legal actions along the same lines.

declaration of non-infringement In British-type law**,** a person who believes that s/he does not infringe a patent can apply to the Patent Office or a court for a declaration that s/he doesn't infringe, but only after s/he has applied to the patent proprietor for such a declaration and been refused. The US equivalent is a **declaratory judgement**.

declaratory judgement US civil law judgement that solely set out the rights, duties and obligations of the parties in a dispute. No order is made as to action and no damages are awarded. Typical judgements of this type are declarations of non-infringement or a holding that a patent is invalid. A **cease and desist** letter from someone alleging infringement and which is too harsh can be countered by a request for a declaratory judgement. This forces the accuser to appear in a court of the alleged infringer's choosing and at the accuser's expense.

defensive patenting Filing a patent application or patent applications in respect of subject matter similar to a useful patent of yours, purely for the purpose of blocking competitors. It typically seeks to block areas of marginal (to you) interest but of potential interest to competitors seeking to circumvent your patent. See also **offensive patenting**.

deferred examination A provision of the Australian modified examination system, in which a patent is granted, based on a patent granted in another jurisdiction. If such a patent has not yet been granted, it is possible to defer examination for a period, until it is.

delivery-up As part of an **infringement** settlement, an infringer may be required to deliver up his goods to the patentee or his agent for destruction or other disposal.

demand (PCT) Official name for the application to the **PCT** authorities for **International Preliminary Examination**. Hardly anyone bothers any more.

Dennemeyer Luxembourg firm of patent attorneys better known for its (relatively) inexpensive and successful worldwide patent **renewal** services. Its success has spawned a number of imitators.

dependent/overseas territories, patenting in See **overseas/dependent territories, patenting in**

derivation proceedings See **USA.**

Derwent Derwent Publications Ltd., a commercial specialised patent information service, now part of Thomson Reuters. Its abstracts are the best in the business and its searchable database is outstanding, if expensive. (The name comes from that of the house from which founder Montague Hyams initially operated the service).

description (also known as "specification").The part of a patent application documentation where the invention is actually described. In the preferred **PCT**/**USPTO** format, it is broken into sections
- title
- technical field of invention
- background art
- disclosure of invention (usually in terms identical to the main **claim**)
- description of figures (if any)
- description of **best mode** of performing the invention, including **examples**
- reference to industrial applicability

As long as all these elements are present, there is no need either to label them as such, or to present them in this order.

description, conformity with claims on grant In the practice of the USA and some other countries (e.g. Japan, Singapore), the **claims** are all-important, and any amendments during prosecution are made to the claims alone – the description/specification remains in its originally-filed state. Thus, many granted US patents have specifications covering everything out to the Andromeda nebula, but claims covering only the inventor's home address.

However, in some other countries (e.g. the **EPO**), it is required that, when claims are deemed allowable, the description be brought into conformity with the claims, i.e., all matter not covered by the claims be excluded.

design or registered design. A variety of **intellectual property** right that protects the shape of, or pattern or ornamentation applied to, industrially-produced articles. Called **design patent** in the USA. Design terms vary (maximum of 25 years in the UK, 14 years for a US design patent).

design patent US patent covering the shape of or pattern on an article. Equivalent to a registered **design** elsewhere in the world. However, being a patent and subject to the same patent laws as utility patents, considerations not usually considered relevant to designs, such as **obviousness**, are relevant in the USA. US design patent numbers bear the letter D.

design right Sometimes referred to as "unregistered design right". A UK and EU right analogous to **copyright** that comes into existence when a new or original design is created. It lasts for 15 years from the creation of the design. Having no statutory protection, the owner of such a right can only defend it from alleged infringers by civil court action, such as a **passing off action** at common law in the UK.

designated states The **contracting states** which are designated for protection in either a **European application** or an **International application**. Once upon a time, you could designate which countries you wanted. No longer, all are now deemed designated on application. You can drop states later.

designation Selection of **contracting states** in an **EPO** application. Formerly, states had to be designated on application, but now the payment of the equivalent of seven **designation fees** is deemed to designate all contracting states, and states are chosen at grant.

designation fee Fee once payable per country in an **EPO** application. Still possible, but now all countries are deemed designated by payment of the equivalent of seven designation fees, and country selection for **validation** takes place at grant.

Diamond v. Diehr One of a trio of US **Supreme Court** decisions (the other two are *Parker v. Flook* and *Gottschalk v. Benson*) that opened the way to patenting computer software-related inventions. Recent Supreme Court decisions (**Alice**) have modified the field with consequences yet to be completely realised.

Directive on the enforcement of intellectual property rights or Directive 2004/48/EC of the European Parliament. **EU** legislation covering remedies under the provisions of the EU. It has no effect on the substantive provisions of IP law, but seeks to harmonise the rules on matters such as standing, evidence, interlocutory measures, seizures, injunctions, damages and costs. Member States can be censured in the **ECJ** if their civil procedures on the infringement of intellectual property rights are "unnecessarily complicated or costly, or entail unreasonable time-limits or unwarranted delays".

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Directorate-General Division of the **EPO**. They are DG 1 (formalities/search, Rijswijk/Berlin), DG 2 (examination/opposition, Munich). DG 3 (appeals, Munich), DG 4 (Administration, Munich) and DG 5 (international affairs/legal, Munich/Vienna).

disclaimer One way of avoiding **prior art** during **examination**. If you claim compounds A-Z and a prior patent has a disclosure that covers compound E, you can claim "Compounds A-Z with the proviso that compound E is not included". Used mainly in the **EPO**, but also allowable in some other countries. In the EPO, the anticipation must be accidental, that is, the document disclosing Compound E must be in an entirely different field (one that the skilled person would not have taken into consideration). In addition, a disclaimer can only be used to avoid a **novelty** objection – it can never be used to avoid a lack of **inventive step** objection.

discovery This has two quite different meanings in the patent business:

1. Although a "discovery" is said to be patentable in the US patent law (*The term "invention" means invention or discovery* (35 USC 100)), the word takes on a different significance when you talk about a "mere discovery". This means that you have merely found (or discovered) something that was there all along. In **common law** countries (except the UK and Ireland with their Europeanised Patents Acts), this is unpatentable, and **second non-medical use claims** are not possible there. India in particular takes the concept of "mere discovery" to ridiculous lengths, resulting in a bar on most chemical patents.
2. The ability during legal proceedings for **infringement** in **common law** countries to obtain internal documents from the other party to support the obtaining party's position. Documents that are the subject of **privilege** cannot be discovered.

divisional application Application produced when a patent application contains more than one invention and the extra invention is "divided out", either voluntarily (by the applicant) or involuntarily (at the demand of a patent office during prosecution). It results in an independent patent. A divisional must be filed before the prosecution of the "parent" application is complete.

The voluntary divisional is useful as a device to prolong the life of a patent application (when you can go no further, you file the same thing again, call it a divisional, and off you go again). This latter procedure is a favourite tactic of the pharmaceutical industry, to make sure that there is always a pending application. The **EPO** has introduced new rules to try to restrict this use. See **"poisonous divisional"**.

DNA See **gene patents**

Doctrine of Equivalents Judicial doctrine used to assess whether an alleged **infringement** really is an infringement. It ensures that anyone seeking to avoid a charge of infringement of a patent by making some trivial variation that has no bearing on the working of an invention will still be considered an infringer. The best-known DoE is that of the USA, where it has become an enormously complex subject (to be assessed by experienced US attorneys only!), but other countries (e.g., Japan, China) also have a DoE. And a DoE was introduced into **EPC2000**. It remains to be seen how it will be used.

The subject recently surfaced in the UK Supreme Court case *Lilly v. Actavis*, in which it was held that, while there was no literal infringement (the Actavis variant did not use the patented sodium salt), it would be generally understood that the Actavis compounds were of equivalent functionality and that they therefore infringed.

documentation for patent applications All patent offices require documents, and the quantity and awkwardness varies greatly. An application form is a universal requirement, but there are others such as requests for search/examination, national assignments, declaration of inventorship. Some countries

demand notarisation and **legalisation**, either by **Apostille** or by the local consulate and some, e.g., Saudi Arabia have requirements so onerous that you really wonder whether they are trying to deter you from patenting there.

dosage regime In some places, e.g. **EPO**, a new dosage regime for the treatment of a particular ailment is patentable, even when the drug involved is already known for the treatment of that ailment.

double patenting Essentially, an attempt by the same applicant to patent the same invention twice, for example, by filing a second application with overlapping subject matter, to try to get a longer patent term. It is not allowed. US practice makes a distinction between "same invention double patenting" (identical subject-matter) and "**obviousness-type double patenting**" (one is an obvious variant of the other). In the USA, in such cases, a **terminal disclaimer** may be required as a condition of grant.

Another type is the attempt to patent by both regional and national patents in a single country, where both are available. Most **EPO** contracting states specifically forbid it (if you try it, you get a note from the national patent office to say that, if you don't choose, the national application will be invalidated if both patents are granted). Interestingly, Austria and Denmark do not have such provisions.

drawing features numbers in claims Required in some places. They are there purely for illustration and do not restrict the claim to the embodiment whose numbers are used.

drawings for patent applications These are not inserted into the text, but submitted as a separate series of pages at the end. Spectra, graphs, etc. (but not tables) are considered drawings. Most places require good quality drawings on application.

Druckexemplar ("printing version") The version of a European patent application on which the **Examining Division** is prepared to grant a patent. The applicant must approve this before there can be a grant.

due diligence In patent matters, this has two meanings:
(a) One of the criteria in deciding who has the right to an invention under the "first to invent" principles of the USA. See **USA *first to invent*** below. To be considered the true and first inventor, an inventor must have exercised due diligence in placing his/her invention in the hands of the public for its benefit. Whether it still has any relevance with the end of **first-to-invent** under the ***AIA*** remains to be seen.
(b) An assessment of intellectual property held by a person or organisation to ascertain its asset value. This is generally done at the time of a takeover or merger.

duty of disclosure In some patent systems, notably that of the USA, applicants are obliged to provide all pertinent **prior art** known to them. See **complete candour**. The **EPO** now requires that a copy of the search results of any application from which the EP application claims priority be filed with it. Applicants in Japan, UK and USA are exempt, as those patent offices supply the results dirtectly to the EPO.

"early certainty from search" A new **EPO** scheme that aims to issue all search reports and written opinions on patentability within six months of filing, to prioritise the completion of examination files on which it has already started, over beginning work on new files, and to expedite grants once a positive search opinion has been issued. How this will work out in practice remains to be seen.

early publication A practice followed by most of the world's major patent offices and the **PCT**, whereby they publish unexamined patent applications at 18 months from the application or the **priority date**. The former major exception, the USA, now publishes early all US applications that have equivalents in early publishing countries. The Japanese ***Kôkai*** is an early publication.

It needs to be remembered that these applications are unexamined, so the claims are seen here at their original broadest, and may bear no resemblance to what will eventually be granted. Moreover, as ungranted applications, they cannot be exerted against any third party, and a person using them does not infringe, because as yet nothing that can be infringed exists. They do, however, represent a warning of things to come, and, if you are working within the claims of the application, it is wise to take that warning and consider what may be granted and what actions you may need to take to avoid being held as an infringer, if you are still within the claims eventually granted. If the patentee can show that you knew about the application at early publication date, s/he may be able to recover damages back to the early publication date, not just the date of grant.

ECJ (European Court of Justice) See **CJEU**.

ECLA The patent classification system used by the **EPO**. It is an extended version of the **IPC**. It is currently being combined with the US classification to give the **Cooperative Patent Classification.**

EEUPC See **European Union Patent Court**.

effective filing date Date at which a patent application becomes prior art under US law. Previously, the Hilmer Doctrine (see under **USA**) applied to foreign priority documents, but the ***AIA*** has abolished the Hilmer Doctrine, so foreign priority documents become prior art much earlier (i.e., the effective filing date is the priority date, not the date of filing in the USA). See also **"102(e) date".**

EISPE system This stands for Enhanced International Search and Preliminary Examination under the **PCT.** Under this system, all applications will receive some form of examination, not just those requesting **IPE**, as was formerly the case. As well as an **International Search**, all applications receive an **International Preliminary Report on Patentability** (**IPRP**), an assessment of the patentability of the invention.

elected states In the **PCT Chapter II** procedure, the selected **Contracting States** to which the results of **International preliminary examination** will extend. Election of states must be made by 22 months from application or **priority**, or within 3 months of the issuing of the **IPRP**, whichever later. In some countries, the old deadline of 19 months from **priority** or application still applies, but these will eventually change.

election of species See **USA *restriction requirements***

electronic filing of patent applications Coming to a patent office near you soon. The Japanese Patent Office has had it for some time, and both the **USPTO** and **EPO** have started it.

employee, inventions by If it could reasonably be considered part of an employee's remit to invent, any such invention is the property of the employer and this is usually set out in the contract of employment. They remain the property of the company even after the employee has left the company. Thus, if an employee makes an invention and he leaves before a patent application is filed, he is still obliged to assign the rights to the former employer and to complete all formalities. In the common case of all company inventions belong to a holding company, which is not the employee's actual employer, it is best to have the employee assign the invention to the holding company early in the patenting process. This is of course a legal fiction (the invention belongs already to the employer as of right and the inventor has nothing to assign), but it is convenient in that avoids the pain of having to show that the holding company has the right to apply because it owns the employer.

enablement A patent application must enable a **person skilled in the art** to perform the invention over the entire area of monopoly claimed. Failure to do this, e.g., by not providing details of how to

provide a particular raw material whose derivation is not known to the art, may invalidate part of the application. Broad claims are particularly in danger of rejection for failing to be "fully enabling". An application from which **priority** will be claimed in the USA must be fully enabling, otherwise the USPTO may refuse to accord a **priority date**.

A recent US Supreme Court ruling in *Amgen v. Sanofi* has taken the position that many more examples are needed to support a broad claim, than was previously thought necessary. This follows the general US Supreme Court trend of being totally hopeless at patent decisions, and it could be particularly vexatious in the life sciences field.

en banc A court decision taken by a panel of judges, delivering a single judgement (i.e., no dissenting judgements).

English, filing in Allowed in some non-English-speaking countries, provided a translation in a local language follows in a specified time. Examples include Japan and Thailand.

Enlarged Board of Appeal Appeal Board of the **EPO**, existing mainly to ensure uniform application of the **EPC**. The EBA does not hear cases, but gives decisions on points of patent law which either arise in other EPO proceedings or which are referred to it by the President of the EPO. The decisions (bearing the "G" designation) are binding on the particular point of law, and have varying influence in the national procedures and practices of EPO Contracting states (British courts tend to follow them, whereas the German ***Bundespatentgericht*** ignores the ones it doesn't like).

As a result of **EPC2000**, there is now the possibility of a petition by a person adversely affected by a Board of Appeal decision for a review by the EBA of that decision. This is possible only on certain formal/procedural grounds, not on the facts of the case.

Enforcement Directive In full, EU Directive 2004/48/EC on the enforcement of intellectual property rights. The Directive requires all Member States to apply effective, dissuasive and proportionate remedies and penalties against those engaged in counterfeiting and piracy and so create a level playing field for right holders in the EU. It means that all Member States should have a similar set of measures, procedures and remedies available for rightholders to defend their intellectual property rights (be they copyright or related rights, trademarks, patents, designs, etc) if they are infringed.

enveloppe Soleau Means of establishing the date of an invention in some countries, particularly in France. It involves submitting to INPI (French Patent Office) the idea literally in two envelopes (5mm maximum thickness, maximum 7 A4 sheets). INPI punches the envelopes and returns one to the sender, who must open it only when a dispute over inventorship arises. It is <u>not</u> an intellectual property right, it is merely a means of allowing an inventor to go on doing what is described in the envelope, even if someone else applies later for a patent on the same idea. Naturally, it only works in France.

EPC see **European Patent Convention**.

EPC2000 Substantial revision of the **EPC** that came into force in December 2007. Filed mainly to bring the EPC into line with the **WTO** (e.g., priority may be claimed from an application in any WTO member) and to make it easier to amend. Includes some new articles and many detail revisions. Many things that were previously in the Articles are now in the Rules (it takes a diplomatic conference to change an article, but rule changes can be made by the EPO's Administrative Council).

ePCT Completely electronic filing system of the **PCT**. See also **PCT-EASY**, **PCT-SAFE**.

Epilady Series of cases on a European patent litigated in a number of European countries, in which the various national patent courts came to often diametrically opposite conclusions on the same facts. Makes somewhat of a mockery of the whole idea of a single uniform European patent, and provides a good reason for the **Unitary Patent**.

EPLA See **European Patent Litigation Agreement**

EPO see **European Patent Office**.

EPO patent see **European patent.**

EPO decisions Legal decisions made by the various **Boards of Appeal** of the **European Patent Office**. They carry the prefixes G (Enlarged Board of Appeal decision, on a point of law referred to the EBA by a Board of Appeal or the President of the EPO), T (Technical Board of Appeal), J (Legal Board of Appeal) and D (Disciplinary Board of Appeal).

Epoline The EPO's registry database. It allows you to track European applications as they progress through the office, with all documents being available and downloadable.

EQE European Qualifying Examination for entry on to the list of Professional Representatives. It currently consists of a single paper pre-examination and a four-paper (drafting, answering office action, opposition and legal) full examination. Now conducted remotely, the syllabus is proposed to undergo fundamental changes within the next few years.

equitable estoppel Derived from the principles of **equity** (next entry). US judicial doctrine that prevents a patentee from alleging infringement if s/he delays unduly (of the order of several years) in filing an infringement suit, as a result of which the alleged infringer reasonably believes that no action will be taken and continues doing what s/he's doing. The questions as to whether this applies to continuations/CIPs or to all members of portfolios of related patents remain to be answered.

equity Ancient principles of law arising in England and encompassing principles of natural justice and fairness, and modifying the harshness of some aspects of **common law**. (If your cow strayed on to your neighbour's land, common law said it was now his cow, but equity overrode this and required him to return the cow, or reasonable compensation for it if the cow had already been invited to dinner). It applied to property transactions such as correction of property lines, taking possession of assets, dividing assets, or injunctive relief, and so it impinges on **intellectual property** law. The principles still exist in common law countries (UK, Ireland, British Commonwealth, USA).

In general, the terms "law" and "equity" have almost completely merged, as courts deal with both legal and equitable issues, but certain aspects of equity often remain (e.g., no jury in equity cases – the USA can be an exception here). An important principle is that a person comes to equity "with clean hands". This has recently become a major issue in patent law in the USA (see **inequitable conduct**).

equivalent The same patent or patent application filed in a different country.

errors in patent applications In most places, only correctable if it is obviously an error, in that what it should have been is obvious. Thus, ascribing a molecular weight of 200 to ethanol is correctable, but saying that a solvent has 50% ethanol when you meant 15% is not, unless there is other evidence in the application to back up the 15%. And, no, you can't refer to the **priority document**, where it was correctly stated. US practice is slightly more lenient, and it results in a **certificate of correction,** which is affixed to the front of a patent.

escrow agreement An agreement in which an independent and trusted third party receives and disburses money, documents, etc. on behalf of the parties to an agreement according to relevant clauses in the agreement. In the IP world, most commonly encountered in technology agreements involving software, trade secrets, etc., in which the third party may hold the software and distribute it to a licensee in the event that a licensor cannot or will not distribute it.

Esp@cenet The EPO's free patent service, covering most of the world's patents, with scanned-in original texts, which, in most cases, can be downloaded.

estoppel A legal bar to a right of action arising from a person's own actions. Most commonly encountered in patents in the form of **file wrapper estoppel** in the USA.

EU See **European Union**

EU Patent Convention See previous entry.

Eurasian Patent Convention An **EPC**-like patent convention covering most of the countries of the former Soviet Union (Belarus, Kyrgystan, Kazakhstan, Russia, Tajikistan, Turkmenistan – not Moldova, Ukraine or Uzbekistan). Unlike European patents, Eurasian patents are unitary - all countries are automatically covered by a Eurasian application and individual countries cannot be dropped. Can be designated in a **PCT** application. Handled by the **Eurasian Patent Office**.

Eurasian Patent Office Regional Patent Office for handling applications under the **Eurasian Patent Convention**. Official language, Russian.

Euro-PCT route Filing a **European application** via a **PCT** application. Especially advantageous for European applicants as it keeps the process in the hands of one attorney all the way from application to European grant (at which point national **validation** is necessary.

European application Patent application made under the **European Patent Convention** and designating one or more EPC contracting states.

European patent Patent granted by the **European Patent Office** under the provisions of the **European Patent Convention**. A European patent is not a single unitary patent, but a bundle of national patents each of which pursues an independent existence in the designated countries after grant. Therefore, **revocation** proceedings can only be taken in individual national courts – with frequently undesirable results (see ***Epilady***).

European Patent Convention (EPC) Convention for the granting of **European patents**, established in 1977. Current membership (June 2013) 38 countries + 2 **Extension States**. Contains centralised searching, examining, opposition (post-grant) and appeal functions.

European patent filing languages The EPO official filing languages are English, French and German. However, it is possible to file in any official language of a **Contracting State**, provided that a translation in an official language follows within 13 months of **priority date**. (There is the oddity that an Irish national can file a European application in Irish, but not an Irish national application in Dublin, as the *Oifig na bPaitinní* accepts only English).

Applicants who file in a national official language other than English, French and German are entitled to a 20% reduction in certain fees. For example, Swiss applicants can avail themselves of these reductions by filing with one line (usually the request for examination) in Italian (a Swiss official language). It doesn't work with Welsh, which is only an official language in Wales, not in the entire UK.

European Patent Litigation Agreement Proposed agreement to establish a new Protocol to the **EPC** that would allow for an integrated judicial system and a common European Patent Court, having both a Court of First Instance and a Court of Appeal. It would use the three official **EPC** languages. Seen by many as a stopgap solution until the **EU Patent** arrives, but will probably be hamstrung by the same political infighting over language.

European patent numbers Most EPC Contracting States retain the European patent number after **validation**, but some give new European patents numbers within their own national sequences. Germany, Austria and Spain are three such countries. The numbers are identified by special letter suffixes ("T" for Germany and Spain, "E" for Austria). See also **publication codes** below.

European Patent Office Supra-national patent examining and granting authority established under the **EPC**, headquarters Munich, searching group Rijswijk (The Hague) and sub-offices in Berlin and Vienna. Official languages, English, French, German.

European Union (EU) A politico-economic grouping of European states that started with the European Coal and Steel Community in 1952 and later the European Economic Community (EEC), also known as the Common Market. The EU (conferring legal personality of the organisation) came into force with the 1993 Maastrict Treaty. Current membership is 28 countries.

The EU has no central patent office (see below), but it has from time to time issued Directives relating to intellectual property matters, such as the **Biotech Directive**.

It should be noted that the **European Patent Office**, unlike the **European Union Intellectual Property Office (EUIPO**), is not an EU organisation, even though most EPC signatories are also EU members. Nevertheless, the **EU Patent**, when it comes, will be the responsibility of the EPO, and the laws and directives of the EU have an impact on patenting in the EU member states and the EPO. In some respects, an entity that seeks to promote the free flow of goods across national borders coexists somewhat uncomfortably with a system of national rights that seeks to prevent this, which is probably one good reason for having an EU Patent. See also **Treaty of Rome**, **parallel importation**.

European Union Intellectual Property Office (EUIPO) formerly **OHIM**, **EU** organisation located in Alicante, Spain that includes the unitary EU Trade Mark and Design systems.

European Union Patent Court See **Unified Patent Court**

European Unitary Patent (EUP) Formerly known as the Community Patent, to be granted under the **EU Patent Convention**, replacing the **Community Patent Convention**, which never came into force. Any eventual EUP will be a **unitary patent**. After 20-odd years' general messing about and prevarication, mainly by arch stick-in-the-muds Spain and Italy (both of whom started lawsuits against its introduction (which failed)), a group of 25 countries was given permission by the EU Commission (and the EU parliament has approved) to proceed with a unitary system. Italy joined the system, but Spain has stayed out. The system, both EUP and the **Unified Patent Court** that will oversee it, commenced on 1 June 2023, with 17 of the 25 countries participating.

The EUP will be a "special agreement" under Art.142 EPC, like Switzerland/Liechtenstein (which are a single designation). The normal EPO application/grant procedure will apply, but at grant the applicant can select an EUP for all contributing EU members, rather than individual contracting states. The non-EU members (e.g. Switzerland, Turkey) and EU non-participants (principally Spain and Poland) will be covered by the usual individual designations.

"evergreening" Trendy term to describe what the pharmaceutical industry has been doing since time immemorial to try to extend the effective patent life of a patented compound whose term is about to end. It consists of filing new applications on all sorts of variants utilising the compound, formulations, ways of administering or applying, combinations with other pharmaceuticals, etc. It can sometimes be very effective at blocking generic manufacturers. See also **life cycle management.**

evidence, standard of How persuasive does evidence need to be in a case? The EPO has two standards, depending on the nature of the case, "balance of probabilities" and "beyond reasonable doubt" (sometimes referred to as "up to the hilt"). These categories are to be found (in substance, if not in name) in other jurisdictions.

In the recent case *i4i v. Microsoft*, the US **Supreme Court** decided that the hitherto-accepted "clear and convincing" standard applied, in spite of Microsoft's efforts to convince courts that a lower standard be applied to issues that weren't considered by the USPTO.

examination of patent applications The process by which a Patent Office decides whether a patent application meets the requirements for patentability. Varies from none (e.g., Italy) and only formal objections (e.g., Switzerland) to very tough substantive examination (e.g., USA). Examination is strictly between patent office and applicant. Third parties have no active role and are limited to supplying the office with relevant **prior art** (and even this isn't allowed everywhere). The turn of third parties comes at **opposition**.

examination request In some countries, examination follows automatically from filing a patent application (e.g., USA). In most others, examination must be requested by a certain date, e.g., 6 months from the publication of the search report in Europe or within 7 years from application in Germany or 3 years in Japan. In Australia, it is 5 years from application, but if the Patent Office gets up to your application before then (which it usually does), the Commissioner will direct you to request examination, and you must comply within 2 months.

examination, substantive Examination by a patent office on the actual content of a patent application, as opposed to merely formal objections. The usual criteria are **novelty**, **inventive step, sufficiency** and **utility**.

There are quite a few countries that do not have substantive examination, some of them quite major – for example, France, Italy, Switzerland, South Africa and the Netherlands (the Swiss will introduce substantive examination in the near future).

Examiner Patent office employee charged with examining patent applications. Some offices, such as the **EPO**, have search examiners (to dig up the mud) and substantive examiners (to throw it and make it stick), but in most offices which examine substantively (see **examination, substantive** above), one Examiner does everything. In the **EPO**, substantive examination is done by a so-called Examining Division, a group of three Examiners. What this means in practice is that one Examiner is the primary Examiner and does all the work, and his/her colleagues check it. The USPTO additionally had specialist Examiners for **interferences** (but thankfully no longer).

examples are not mandatory in patent applications, but they are the most practical way of demonstrating that an invention works and fulfilling an inventor's duty to describe his invention fully so that **the person skilled in the art** can carry it out. They are essential for **best mode** in the USA. See also **enablement**, **sufficiency**.

Exclusive Marketing Rights (EMR) A former feature of Indian patent law abolished by the revised Indian Act that came into force on 1 January 2005. It allowed the proprietors of patents for pharmaceuticals and agrochemicals to obtain rights for these in India, even though no Indian patent

application had been filed. It arose as a means of filling the gap between India's joining the **WTO** (with its obligation to permit patenting of chemical compounds *per se* (not previously allowed in India)) and its enactment of a patent law that permitted this.

exhaustion of rights A patent right is said to be exhausted when it can no longer be used in defence of a patent monopoly. This happens in a general sense when products embodying the patented invention have been bought commercially. A patentee cannot take action against a purchaser, unless the purchaser has modified the article significantly (although reasonable **repair** is allowed). This is sometimes called the "first sale" doctrine in the USA.

In general, exhaustion stops at national boundaries, so **parallel importation** of patented goods legitimately acquired in one state into another state where there is an equivalent patent, without permission of the patent proprietor, is not permitted. However, in the BBS "Aluminium Wheels" case, the Japanese Supreme Court recognised an international exhaustion. The US Supreme Court has followed up approving of international exhaustion in a copyright case (*Kirstaeng*) with approval in a patent case (*Impression v. Lexmark*).

A specialised variation of international exhaustion operates within the **EU**. Once a patented product has been placed on the market of one EU member state by the patent proprietor or with his permission, the proprietor cannot use equivalent patent rights in other member states to prevent the marketing in those member states of these goods legally obtained from him. This is especially important with respect to valuable, easily-transported goods, such as pharmaceuticals.

A US farmer argued exhaustion against Monsanto and its "Roundup-ready" seeds (saving and planting the seeds constituted infringement of Monsanto's patents) before the US Supreme Court, and failed.

A recent US **CAFC** case, *Helferich Patent Licensing v. NYTimes and JCPenney*, has sought to define an "authorised acquirer" exception. In this case, Helferich authorised the cell phone industry to sell handsets that practice its patents, but, said the CAFC, the exhaustion doctrine did not prevent Helferich from pursuing the New York Times and other content providers for infringement based on the delivery of messages and content to those cell phones.

expectation of success A consideration that arises in **inventiveness**/**obviousness** arguments. Would the proverbial skilled person have done something novel, but a variation on the known art, with an expectation of success? If so, that something may be obvious or non-inventive. See also **obvious to try**, **could-would**.

expedited examination Some countries have mechanisms for speeding up examination, usually at extra cost. This can be useful when a granted patent is desired quickly, e.g., for infringement action purposes. The USA has introduced a version (two actually), called **accelerated examination** and **Track 1 prioritized examination**. See also **petition to make special.**

experimental exception Use of the subject of a patent during its **term** purely for experiment or seeking to circumvent or improve on it is permissible in most places, provided there is no direct preparation for commercialisation of the subject of the patent while it remains in force. See **springboarding.** However, different considerations apply when it comes to pharmaceuticals and **clinical trials** for **generics**. See **Bolar exception, "safe harbour".**

expert option Sometimes called the "expert solution". An applicant for a European patent relating to a **microorganism** and who has deposited a sample with an **International Depositary Authority** can specify that, until grant, a sample should only be released to an appointed independent expert, rather than to the party requesting it. The expert will perform any necessary experiments, without permitting

the third party to get the sample. If a patent isn't granted, the third party can't get it for 20 years from application.

extension of term Nowadays possible in most places only for patents whose subject matter requires long official regulatory processes prior to commercialisation, i.e., pharmaceuticals. The extension often comes in the form of a so-called **Supplementary Protection Certificate** (SPC) and a common extension period is 5 years. In the USA, the duration of the extension is the time between grant date and FDA marketing approval, provided that the sum of this period and the patent term remaining at approval date is at least 14 years.

Extension States It is possible to designate certain non-contracting states of the **EPC** in a European application, so that a granted European patent "extends" to them. Currently (January 2015) possible for Bosnia & Herzegovina and Montenegro (Montenegro will become a contracting state on 1 October 2022). In addition, a European patent can be validated in Cambodia, Moldova, Morocco and Tunisia.

extraterritoriality Patent laws are territorial, so performing a patented process outside the territory in which it is patented is not **infringement**. However, the edges are sometimes not so sharp. In the US case *NTP v. Research in Motion* (the "Blackberry" case), it was held that RIM's operating of one step of its process in Canada did not avoid a charge of infringement. This finding has been questioned by US legal authorities as constituting an unwarranted extension of US patent law beyond US borders.

"fairly based" Old British law requirement for claims – they had to be fairly based on the specification. Now supplanted nearly everywhere by the requirement that the claims be fully supported by the description.

false marking See **marking**

Federal Trade Commission (FTC) US government agency whose principal functions are the promotion of consumer protection and the prevention of anti-competitive business practices. Abuse of patent rights can sometimes fall within its ambit.

Festo Once just a name for a world leader in pneumatics and industrial automation, now a word that makes strong men weep. It is a reference to a US case (now series of cases) *Festo Corp. v. Shoketsu Kinzoku Kogyo KK*, where two points of US patent law have violently collided. The question is basically, how is the working of the **doctrine of equivalents** affected by **file wrapper estoppel**? If you make a restriction under prosecution to get grant, does that restriction apply only to that particular restriction or to all equivalents? The ensuing row has turned into a patent version of The Never-Ending Story, involving the **CAFC** and the US **Supreme Court**, has left everyone thoroughly confused, and will guarantee that opinions from US attorneys will now cost even more.

"54(3)" See **intermediate citation.**

file inspection In many countries, it is possible to follow the **prosecution** of any application by inspecting the patent office files. These are generally open to public inspection after **publication** of the unexamined application. All EPO documents are available via the Intenet through the **Epoline** service. The USPTO **PAIR** system, gives the same kind of access to all US published applications. The files of older US applications can only be inspected after grant. It is always useful to inspect the file of a patent, which you're accused of infringing or against which you propose to litigate, as it may contain information that could be useful against it. (see **file wrapper estoppel** below).

file wrapper The entire prosecution history of a old-style US patent (one published only on grant). On grant, this is available to the public for viewing or purchase - official actions, applicants'

responses, the works. Still obtainable, and still the only way to get the file for those US applications published only on grant, but in most cases replaced by access to **PAIR**.

file wrapper estoppel Also known as "prosecution history estoppel". The use against a patentee of information obtained from the prosecution history of the application. The basic principle is that, if a patentee has made a particular admission or concession during **prosecution**, s/he cannot argue contrary to this in litigation. In legal language, the patentee is "estopped". This is most commonly encountered in US practice, but such considerations may also be relevant in other countries that allow access to files.

first inventor-to-file (FITF) Priority system introduced in the USA by the ***AIA***. "So," you might ask (but then, you might not, but anyway…), "what's the difference between this and **first-to-file**? In practical terms, nothing, it seems, apart from the continued existence in the US of a **grace period** (but somewhat reduced in scope from the pre-AIA one). However, I'm confident that the USPTO and US court system will find ways to toss assorted spanners in the works.

first medical use claim Claim to the use of a known substance as a medicament. Form, "use of a compound of the formula…. as a therapeutic substance". Particularly favoured by the EPO. See **second medical use claim**.

first sale doctrine See **exhaustion of rights**.

first-to-file The **priority** system prevalent in most of the world. If there are two applications or patents for the same invention, the one with the earlier application or **priority date** has the right to the invention.

first-to-invent The former **priority** system prevalent in the **USA** (see p.70, plus **USA *first to invent***). Replaced by **first inventor-to-file**. However, the **US Inventor Act** is seeking to resurrect the corpse.

FITF See **first inventor-to-file.**

"for" Seeking to differentiate a product in a patent claim for the purposes of **novelty** by making it "for" a particular purpose will not usually work (but it can work in Japan in some circumstances). In most places, the "for" phrase is regarded as a mere statement of purpose and is not regarded as limiting on the scope of the claim. Thus, "Compound X for making super-calorific vanilla ice cream" will not be novel over "Compound X for making rocket fuel". In such a case, the only way to go is to have a **process claim** and/or a **use claim**.

forbidden subject matter See **patentable subject matter** below.

foreign filing The filing of an application in countries other than the country of first filing. Generally done near the end of the **priority year** for the purposes of claiming **priority**, but can be done later. (see **non-Con filing**).

foreign filing licence Permission by the patent office of a country on whose territory an invention has been made to file a **priority application** outside that country. The usual reason is **national security**.

Formstein Decision by the German ***Bundesgerichthof*** that took a dramatically wide view as to what constitutes an equivalent for the purposes of **infringement**. Or, as I put it in what I regard as one of my less worse efforts:

Oh, the latent, in my patent, exclusivity defined
Now has bound'ries quite dilatant, thanks to Germany's Formstein

It compensated by recognising the possibility of a "**Gillette defence**" under German law, i.e., that a patent cannot be infringed if what the alleged infringer is doing is old or obvious relative to what is claimed in the patent.

forum shopping The selection of a court/legal system for a trial that offers the chance of the best/quickest result. This is possible in some jurisdictions, e.g. the **"rocket docket"** of some US courts. It is also possible in the Chinese system, where it is better to bring a case in a large city court, where knowledge of intellectual property matters is more sophisticated. Planitiffs bringing infringement cases under the European Patent System (where infringement remains mainly a matter of national law) will usually select the country that they believe will give the best result, and that this will dissuade infringers in the others.

FRAND (sometimes RAND in the USA) – "(fair,) reasonable and non-discriminatory licensing". A requirement of standard-setting organisations, particularly in the software and telecommunications industry. If a patented technology becomes an industry standard, and the owner is involved in the standard setting, it cannot hold the rest of the industry to ransom, but must ensure that (F)RAND is made available. What exactly is "fair", "reasonable" and "non-discriminatory" is, of course, open to interpretation, if not downright abuse, and there have been some battles in the important smart 'phone market. See **standard-essential patent**.

freedom to operate The ability to perform a process or make and market a product without infringing anyone else's patent, and usually without trying to patent the product or process. Before proceeding with any new process or product, **patent clearance** should be obtained. Having a patent does **NOT** automatically give you the right to practise the invention in the patent.

"free beer" claim English name for a claim that claims the desired result and has at best only a narrow disclosure to back it up. One recent gem:

A composition having the physiological effect of menthol, but being substantially menthol-free.

Such a claim basically says, "if it works, it's ours", and doesn't define any way for the skilled person to identify what works – in essence, it asks the skilled person to make the invention, and then claims it. Such claims are considered lacking in **sufficiency** and are immediately rejected.

Frye Standard See **Daubert Standard**

fully enabling See **enablement**.

functional limitations in claims generally don't work – see "**for"** above.

further processing Procedure of the **EPO** that allows you to overshoot deadlines relating to a European application (e.g., deadline for answering an official action). The applicant has two months from the date of an EPO communication reporting the lapse of the application in which to respond completely. If that is done, the lapse is withdrawn and the application continues. The further processing fee is small and, unlike **restoration**, no questions are asked. A convenient way of buying more time. Previously applicable only to deadlines set by the EPO itself, but since the **EPC2000** revision, applies to all application deadlines, with some stated exceptions.

GATT-TRIPS (**G**eneral **A**greement on **T**ariffs and **T**rade - **T**rade-**R**elated Aspects of **I**ntellectual **P**roperty A part of the successful GATT Uruguay round which set up the **World Trade Organisation** and which led to a general agreement among signatories to make intellectual property laws more uniform. One immediate result was the move by the USA to a **term** of 20 years from application, as

opposed to the previous 17 years from **grant**. In some Third World signatories, e.g., India, full implementation will take some time. As of 1st. January, 2000, the **PCT** authorities recognise the **priority** claimed from an application filed in any WTO member, even if that member is not a signatory to the **Paris Convention**.

GCC (Gulf Cooperation Council) Political/economic association of conservative monarchies (Saudi Arabia, Kuwait, Oman, United Arab Emirates, Bahrain, Qatar) around the Persian Gulf. There is a unitary GCC Patent which covers these states and which is administered by the Saudi Patent Office. Term is 20 years. Some of the GCC members (Kuwait, Qatar) are not **Paris Convention** signatories, the others are, the UAE and Oman also being **PCT** Contracting States (**double patenting** via both PCT and GCC is apparently not possible). However, Paris Convention or not, **priority** for a GCC application may be claimed from any application that would be acceptable as a priority application in any of the GCC member states.

Gebrauchsmuster See **utility model**.

gene patents So, are they or aren't they patentable? In most places, an isolated gene is regarded as an artificially-created state of affairs (in that they don't occur in isolation in nature, and someone has to do it), and thus patentable subject-matter. However, in a recent series of US cases, *Myriad*, in which a patent covered an isolated (but unmodified) gene used in a diagnostic test, the US **Supreme Court** held such isolated genes to be unpatentable, with unknown consequences for the US biotech industry. The modified gene, or cDNA (DNA without the non-coding bits) remains patentable, so the predicted adverse effect on the US biotech industry may not be so severe as predicted. The Australian High Court has similarly decided that Myriad is not patentable subject-matter.

gene sequences These may be submitted in electronic form as well as paper form. It is now possible to submit very large ones (which run to thousands of pages) in electronic form alone, resulting in considerable savings in both money and forests. In PCT cases, the choice is between submitting them in approved electronic format (cost, zero) and in any other form (cost, horrendous – charged as if it were submitted on paper).

generic In pharmaceutical patenting, a pharmaceutical that is an exact duplicate of a previously patented pharmaceutical whose patent has now expired or is about to do so. Pharma companies seek to defend their market share when their patents expire by **evergreening** or **life cycle management**.

"Gillette defence" The self-evident proposition (from a 1913 **House of Lords** judgement *Gillette v. Anglo-American Trading*) that a valid patent cannot be infringed if what the alleged infringer is doing is old or obvious relative to what is claimed in the patent. It is devastating when a claim has two possible interpretations, the narrower one making the claim valid but not infringed and the broader invalid, basically a "heads I win, tails you lose" situation.

Global Patent Prosecution Highway see **Patent Prosecution Highway**

Google Yes, that one. Google Translation services are one possible way to overcome the European language barriers. Google is collaborating with the EPO in an endeavour to provide **machine translations** of patents into 32 European, Asian and Slavic languages.

Google is also an indirect participant in the **phone wars**, fought primarily between Apple and Samsung – Apple would love to reduce the success of the Google Android system.

Gottschalk v. Benson See ***Diamond v. Diehr***

Government use of inventions In the UK and some Commonwealth countries "Crown use". The ability of a Government or a Government authority to use an invention without having to seek permission and without it being considered **infringement**. Many patents legislations confer such power. The Government may be required to pay compensation, but it may not. Such provisions are rarely used, e.g, for reasons of national security or in cases of perceived crisis, such as the provision of generic anti-AIDS drugs in spite of their being patented.

grace period A time period within which an action can be taken without detriment to a patent application. Two basic types:

(a) time periods before the application date of a patent within which **publication** is considered not destructive of **novelty**, e.g. 12 months in the case of **USA** patent applications, 6 months in the case of German **utility models.** Other countries with one-year grace periods include Australia, Brazil, Canada, Mexico, Malaysia, South Korea, Turkey. Russia has a 6-month grace period. Japan also has a 6-month grace period, but only in respect of certain publications.

The **Trans-Pacific Partnership** Agreement stipulates a 12-month grace period for all participants.

The concept of a universal grace period of 12 months has come and gone for many years, but it's back on the table again.

(b) time periods after an action deadline within which that action can be completed (usually with an extra fee), e.g. **renewals** in all **Paris Convention** countries, certain **EPC** deadlines (examination request, filing fee payment).

Grace Period Restoration Act see **US patent law revision proposals**

Graham v. John Deere In full, *Graham v. John Deere Co. of Kansas City*. Classic US decision that sets out the basis of the assessment of **obviousness** under US law. The principles are
- determine scope and content of prior art;
- determine difference between this art and the disputed claims;
- ascertain the level of ordinary skill in the art;
- determine the obviousness or nonobviousness against this background.

A trend towards restricting this concept, to the effect that there needed to be an indication in the direction of the alleged invention, thus reducing the scope of obviousness objections, was comprehensively demolished by the **Supreme Court** in its ***KSR v. Teleflex*** decision.

grant The award of a patent, and the time point at which the applicant becomes a patentee and actually owns property in an invention. The earliest time point at which action for **infringement** can be started. Some **opposition** periods (EPO, Japan) are post-grant.

Graver Tank In full, *Graver Tank & Mfg. Co. v. Linde Air Products Co.* Classic US Supreme Court case that established the standard question for application of the **Doctrine of Equivalents**. This is: does the alleged equivalent perform substantially the same function in substantially the same way to yield substantially the same result?

"grey market" goods Goods subject to an **intellectual property** right legitimately acquired in one country and imported into another country in which there is an equivalent intellectual property right in the name of the same IP owner. The act is known as **parallel importation** and it is generally forbidden. It most commonly involves goods bearing registered trade marks genuinely applied by the proprietor or his/her agent, but it can also involve patents.

Guidelines In full, *Guidelines for Examination in the European Patent Office.* The **EPO**'s book of rules for its examiners in the searching, examining and opposition groups. Frequently quoted in EPO official actions.

Hague Agreement (not to be confused with next entry) International agreement which allows for the international registration of industrial **design** applications. Essentially a designs version of the **Madrid Agreement/Protocol** for trade marks, and managed by **WIPO**.

Hague Convention International convention dealing with the authentication of documents in civil matters (any civil documentation, not just patent-related documentation). The practical upshot is that, instead of **notarisation** being followed by consular legalisation by the country to whom the document is directed, a local authority in the country of origin can affix the **Apostille**.

harmonisation It has long been a goal to make patent procedures (especially the formalities) more uniform throughout the world, so as to impose a lesser burden on applicants. The traditional hold-out has been the USA with its "everyone else is out of step" attitude, but this has changed, first with the **GATT-TRIPS** provisions, and more recently with the **AIA.** The **USPTO** and the **EPO** are currently cooperating on a common patent classification, the **Cooperative Patent Classification**.

Hatch-Waxman Act More properly, *The Drug Price Competition and Patent Restoration Act 1984*. US legislation that tried to have its cake and eat it, by endeavouring to make both research-based and generic pharmaceutical manufacturers happy simultaneously (something having roughly the same degree of difficulty as extracting teeth from unanaesthetised tigers). It sought to do this by

- introducing extension of term of US drug patents (to a maximum of 14 years from grant);
- making it simpler for generic drugs to be registered for use. Generic applicants need only submit an **ANDA** (Abbreviated New Drug Application), showing the bioequivalence of the generic drug with the patented drug. They can rely on the safety and effectiveness studies submitted in respect of the patented drug by the original applicant. However, it also introduced the idea of **patent linkage**.

Perhaps it's not surprising that all the drug majors are now also producing generics.

The legislation is complex and involves various **data exclusivity** provisions designed to benefit inventors of new molecular entities.

Hilmer Doctrine See **USA**

holding company Often used as the applicants for patents for tax reasons. However, as inventors rarely work for holding companies, the inventors should assign their inventions to the holding company early in the patenting process. See also **employee, invention by**.

Hong Kong The most important surviving example of **registration** of a UK patent in an overseas territory. This survived the transition to Chinese rule, and a patent in Hong Kong can now be based on a UK patent, an EP/UK patent or a Chinese patent. Hong Kong introduced its own patent system in December 2019, for people who want patents in Hong Kong alone, but the registration system will continue.

House of Lords Former highest UK court and the absolute authority on the interpretation of UK patent law. Its judgements are not binding anywhere else but are highly persuasive in the **common law** jurisdictions of the British Commonwealth.

As of 1 October 2009, this function was taken over by a newly-formed UK **Supreme Court**.

human beings are not patentable under some patents acts (e.g., Australia). R.29 of the **EPC** states "the human body, at the various stages of its formation and development, and the simple discovery of one of its elements, including the sequence or partial sequence of a gene, cannot constitute patentable inventions". The ***AIA*** forbids patents "directed to or encompassing a human organism" – whatever that means…

human embryos Generally, anything that involves the destruction of a human embryo (e.g., harvesting of **stem cells**) is unpatentable. In Europe, it is "*contrary to public order or morality*"

IP5 Patent Prosecution Highway See **Patent Prosecution Highway**

implicit disclosure Potential **novelty**-destroying argument in some countries, but not all. For example, is an amorphous substance disclosed by a disclosure describing the pouring of the molten substance into cold water (in which the final form would inevitably be amorphous)? In, for example, the **EPO**, no.

import Most patent laws allow temporary import (e.g., something fitted to a vehicle, ship or aircraft legally in its country of origin, but which contravenes a patent in another country into which the vehicle temporarily enters.

But what about the unpatented product of a patented process, made outside the country and then imported into it? The answer varies from country to country. It is definitely not allowed in the USA.

importation, patent of Similar to a **patent of confirmation** or **revalidation**, in that it allows the patenting of an invention already patented elsewhere. A feature of old British law, it still exists in some Middle Eastern countries.

Improver A case (*Improver v. Remington*) in which the UK High Court came to the opposite conclusion to the German ***Bundespatentgericht*** on the same set of facts (concerning a depilating device, one using a coiled spring, the other a solid rubber tube with slits). In UK law, there was no infringement, in the German case (with Germany's different approach to what the skilled person would know), there was. It gave rise to the so-called *Improver* questions that stipulated that a variant will not infringe if any of the following are true:

- The variant has a material effect on the way the invention works.
- The fact that the variant has no material effect on the way the invention works would not have been obvious to an expert in the field.
- That an expert in the field would have taken from the language used in the patent that strict compliance with the primary meaning was an essential requirement of the invention.

The recent UK Supreme Court decision in ***Lilly v. Actavis*** has moved away from a strict reading of these.

inadequate remuneration Old British-type law ground of **extension of term**. It required a court case and mountains of convincing evidence. Famous success, *Fairey Aviation's Patent*, 10-year (maximum) extension for the "droop-snoot" of the Concorde. Now extinct (both inadequate remuneration and, sadly, Concorde).

indefiniteness A cardinal patent sin. A patent must provide the **person skilled in the art** with everything needed to recreate the invention. If it fails to do so because of bad, incomplete or misleading terminology, or inadequate definition, such that the skilled person has no idea what was intended, rejection can be expected. The issue as to how indefinite is "indefinite" came up before the US **Supreme Court** in *Nautilus v. Biosig*. The Supremes' answer appears to be "even more indefinite

than you previously thought". The new test requires that the claim scope be "reasonably certain" to one skilled in the art at the time of the patent.

India A country that is highly unpopular with the pharmaceutical industry, especially after the Novartis *Glivec* case, in which the Indian court refused a patent for a different crystalline form, saying (quite reasonably) that this was a variation on an existing form, and merely another bit of the industry's **evergreening** policies. Indian patent law is especially strict on chemical inventions. As s.3(d) of the Indian Patents Act puts it, "the mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant" does not result in a patentable invention. And, just to put the boot into Big Pharma, "For the purposes of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substance shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy". So there.

Indian search services A relatively recent arrival on the patent scene. These are companies with their roots in India with offices in the USA, which seek to offer (relatively) cheap search services by having the actual work done in low-cost but English-literate India. These companies major in fancy graphics of the type that appeal to the "gee whiz!" tendencies of senior management. The actual value for money is unknown (to this writer anyway), but they do have some substantial clients. The patent knowledge of their representatives is frequently sadly lacking.

indication Particular therapeutic use for which a pharmaceutical is registered in a country following **clinical trials** and registration. A new indication requires a completely new set of clinical trials.

inducement to infringe A person inducing another to infringe a patent is him- or herself an infringer. The issue has arisen recently in the USA in connection with some high-profile cases. Is deliberate intent involved, or can it be merely a case of not having done a proper patent search ("deliberate indifference" or "wilful blindness") and thus missing that the infringed patent existed? In *Global-Tech v. SEB,* the US **Supreme Court** held that inducement of infringement requires knowledge that the induced acts constitute patent infringement, and that wilful blindness satisfies the knowledge requirement.

In *Akami v. Limelight*, the **CAFC** held that there can be active inducement, even when three different entities collectively performed the patented steps. The question remains as to whether one of these steps can be performed outside the USA. See **extraterritoriality**

industrial applicability A requirement for **patentability.** It excludes such things as medical treatment and diagnostic methods.

industrial property Subset of **intellectual property**. Generally considered to comprise patents, trade marks and designs (not copyright).

inequitable conduct Inappropriate behaviour at **equity** (failing to come "with clean hands"), leading to loss of the case. This has existed since 1684 (when the UK High Court of Chancery repealed a patent as a matter of fraud), but it recently briefly became a major issue in the USA, notably in the **CAFC** case *Therasense v. Becton, Dickson & Co.*, in which the court held that clear and convincing proof of deliberate intent to deceive was needed. (In the original case, a patentee made a declaration to the USPTO that was contrary to attorneys' arguments made at the EPO. The patent was invalidated as a result.). The brief storm of inequitable conduct cases now seems to have subsided, as it's very difficult to prove that a defendant made a deliberate decision to withhold a relevant reference of which

it was aware. Nevertheless, clearly inconsistent positions in different national prosecutions are to be avoided. The latest is that the US **Supreme Court** may look again at *Therasense*.

In a further US development, there is a theory of "infectious enforceability", in which the taint of inequitable conduct in a single patent-in-suit would infect all associated patents-in-suit. This has been applied in some cases.

infectious enforceability YSee previous entry.

infringement The working without permission of someone else's invention in a country where the invention is patented by that someone else. Very risky and potentially very expensive, unless the patent is invalid. However, please note that you infringe only if what you do falls within a valid claim of a granted patent. In other words, you cannot infringe a published application, because it has no granted claims, but you should be watching to see what is granted and consider the risks of proceeding with your present work should the application be granted with claims that encompass what you're doing or want to do. See also **contributory infringement**.

infringement remedies Include **damages, account of profits, injunction, delivery-up.**

inherency If a feature of an invention is not specifically disclosed in prior art, but is inherent in that art, that is if the natural result flowing from the operation of the prior art as taught would result in the feature, the prior art destroys the **novelty** of the invention. The USA has a strong inherency doctrine, as does Japanese patent law.

injunction Court order prohibiting a person found guilty of infringement from continuing to infringe. In some countries, courts will grant a preliminary injunction prior to the hearing of a case, on presentation of a *prima facie* case of infringement.

Innovation Act see US patent law revision proposals

"innovation patent" Australian variety of **utility model**. Patent was granted without examination (so one enterprising Australian attorney promptly patented the wheel!), but had to be examined before it could be enforced (so GM, Ford, Toyota etc. can relax). It needed only have novelty, not inventiveness. Very useful for quick grant (e.g., in order to take action against an infringer). The system has been abolished – it ceased to be possible to file an innovation patent after 26 August 2021, meaning that the last one will expire on 25 August 2029.

INPADOC The International Patent Documentation Centre in Vienna, now part of the **EPO**. Collects and correlates data from all over the world on patent applications and has a good database on patent families, giving numbers, legal status, etc.

Integrated Circuit Topography The newest form of intellectual property protection, covering the pattern, shape and configuration of the three-dimensional disposition of the elements of an integrated circuit and the maskworks used to produce them. About 20 countries (including USA, Canada, Australia, Japan, Switzerland) have such protection – many others consider that integrated circuits are adequately covered by copyright or registered design protection. Term is 10 years, typically expiring on 31 December of the tenth year after application.

intellectual property Property that resides in ideas and concepts, rather than physical objects. The best known intellectual property rights are patents, trade marks, designs and copyright. However, there are other types, such as plant variety rights, circuit topography, trade secrets and confidential information and know-how, and traditional knowledge.

Intellectual Property Enterprise Court (formerly Patents County Court) British specialised court for hearing simple intellectual property matters. Relatively cheap and quick. Patent attorneys and **solicitors** can appear before it – no need for a **barrister**.

interference See under **USA**.

"Inter-Imperial Convention" See **Convention priority**.

intermediate citation A **citation** that is relevant **prior art** against a patent application of the same nationality, and which was filed before, but published after, the patent application. In European practice, known as a "54(3) citation". In most places, only citable in respect of **novelty**, but in the US citable also in respect of **inventive step**.

internal priority Claiming **Convention priority** from an earlier application filed in the same country. Possible in most places (possible in the USA only if the earlier application was a **provisional application**).

International application An application made under the **PCT** for patent protection in a number of PCT **contracting states** (155 possible as of April 2022).

International Bureau Part of **WIPO** that supervises the workings of the **PCT**. Also handles the Madrid Arrangement/Protocol for International trade mark registration.

International Depositary Authority Authority appointed under the **Budapest Convention** for the deposit and holding of samples of **microorganisms** which are the subject of patent applications and to release them to people requesting them. See **expert option**.

International Exhibition Exhibiting at such an exhibition is one of the few exceptions where public showing of an invention prior to the filing of a patent application on the invention does not destroy **novelty**, even in **absolute novelty** countries. However, certification must be obtained from the organisers of the Exhibition, showing its status and this must be presented when filing the application (to be filed within 6 months of the opening of the Exhibition).

International Filing Date The date on which an International application under the **PCT** is filed. The **term** of a granted national/regional patent derived from such a PCT application is deemed to start on this date, rather than the actual date of application in the country (the so-called entry into the **National Phase**).

International Patent Classification (IPC) The classification system now nearly universally used for the classification of patent subject-matter.

International Phase The part of the **PCT** procedure where the application is under the supervision of the **International Bureau**. The length of the International Phase is up to 30 months from application or **priority date**, although some countries still have the former provision of up to 20 months, unless **International Preliminary Examination** is requested – this will soon change and all will have 30 months. Applications then enter the **National Phase** or **Regional Phase**.

International Preliminary Examination. An optional part of the **PCT** procedure and the subject of so-called **Chapter II** proceedings. An **International Preliminary Examining Authority** examines the application for novelty, inventive step, industrial applicability and sufficiency, and issues at least one **written opinion**, and finally an **International Preliminary Examination Report**. An applicant is not bound to accept these findings, or even to reply to them, but they can give a useful guide to the

chances of getting a patent in the **National** or **Regional Phase**. The **EPO** is the IPEA for **EPC** Contracting States.

Up to recently, a 30-month **International Phase** could only be obtained by requesting IPE (and this was the sole reason for most applicants demanding IPE), but soon all PCT applications will have the 30 months automatically, and IPE may become an endangered species.

International Preliminary Report on Patentability (IPRP) A report on patentability on a **PCT** application, issued by the **International Searching Authority**. If **International Preliminary Examination** is not demanded, it becomes the final **International Preliminary Examination Report**.

International Preliminary Examining Authority (IPEA) Patent Office appointed under the **PCT** to carry out **International Preliminary Examination** for a particular country or region.

International publication Publication at 18 months from application or **priority** of an **International application** under the **PCT**.

International Search Part of the **PCT** procedure. An **International application** is automatically forwarded to an **International Searching Authority**, where it is searched and an **International Search Report** provided, generally by the time of **early publication**. For applicants from **EPC** contracting states, the ISA is the **EPO**, except for the Nordic countries, where the Swedish Patent Office can do it.

International Search Report Report on prior art found by the **International Searching Authority** under the **PCT**. Applicant may amend his claims (and only his claims) in response.

International Searching Authority (ISA) Patent Office appointed under the **PCT** to carry out **International searches** for a particular country or region.

International Trade Commission US Government body that regulates (surprise, surprise) US international trade. It can become involved in patent matters, e.g. in seeking to prohibit the import of a product that infringed a US patent. To achieve this, the plaintiff must establish that a domestic industry exists or is in the process of being established for the product protected by the patent. In a recent **CAFC** decision, the ITC's remit did NOT extend to electronic transmissions of digital data into the USA (*ClearCorrect Operating v. ITC*, relating to teeth repositioning devices, where the digital modelling was done in Pakistan and then transmitted to the USA for production of the relevant device).

interpretation of claims For professionals only! Interpretation depends very much on the law in the relevant country. British-type law countries (including the USA) interpret claim wording literally - a description can be used to define claim terms, but nothing can change the clear meaning of a claim read in isolation. The opposite pole is the German school of interpretation, which regards claims as only a general guide to the inventive concept. The **EPC** sought to compromise with a Protocol to Article 69 that basically says that claims shall not be interpreted literally or as a general guide, but somewhere in between! This has not worked well in practice (see note on the ***Epilady*** cases (*Improver v. Remington*) on p.101).

The ultimate interpreter of a patent and its claims is a court of law.

intervening rights The US term for the concept that it is possible that a third party might acquire rights in an invention or part of an invention in spite of the existence of a patent. One common way is when a patent is inadvertently allowed to lapse, and then restored. If a person makes use of the

invention between lapse and restoration, that person may be allowed to continue doing what s/he was doing (but no more than that). In US practice, a re-examination or a reissue, resulting in changes in the claims, may give rise to intervening rights.

interview Most patent offices allow applicants and their attorneys to interview examiners, either or both telephonically and in person. This can often result in a quicker resolution of difficult points than relying purely on a written procedure.

invalidation trial Japanese procedure that replaced post-grant opposition in 2004. Can be lengthy and expensive, and new **post-grant review** proceedings are envisaged for 2015.

invention What patents are all about. Exact definition is impossible, but all countries agree that an invention is a creation that is useful in a practical sense (as opposed to, say, an aesthetic creation). At this point, it all comes apart, because many things that are considered inventions in one country are not considered inventions in another. For example, **computer programs** are patentable in the USA, but not in Europe, where a "technical effect" is required for an invention. The same is true of **business methods**.

"inventive height" (*Erfindungshöhe*) A concept encountered in German patent law. For patentability in Germany, not only must an invention be inventive, but it must also possess a minimum degree of inventiveness. Can be a major pain in the neck.

inventive step (lack of inventive step is known as "obviousness" in some countries) an essential requirement for **patentability** in most countries. It means that, to be patentable, an invention must have a certain level of inventiveness - merely to be different from what has previously been done is not enough. Thus, if an alleged invention has **novelty** (insofar as that particular thing has never been done before in that way), but the thing would have been obvious to the **person skilled in the art** using his ordinary skill, the alleged invention lacks inventive step.

inventiveness see **inventive step.**

inventor Someone who invents. Seems obvious, doesn't it? But the point is that **only** people who contributed to the inventive concept should be named as inventors. So, on the one hand, the lab technician who only does what s/he was told, no matter how well done or difficult/exotic the work, should not be named an inventor, just because s/he participated and you want to reward him or her. Nor, on the other hand, should the project head, who only supervised the project. (I know of one company in which the research director was named as inventor on every single patent application). Some say that, as inventions these days result mainly from teamwork, all members of the team should be named. This is very noble; it is also very wrong.

Inventorship is a matter of fact – you did or you didn't. Having said that, the line between invention and non-invention may not be clear, and ultimately the patent attorney who drafted the application and defined the inventive concept is the person best qualified to make the decision. If it ever came to light that inventorship was incorrect, this could invalidate any patent, on the grounds of the making of a false declaration.

inventor remuneration If the inventor is an employee, the rights to the invention generally belong to the employer and no particular compensation is payable. However, there are exceptions. In Germany and Austria, inventors must be compensated, and there are rules for calculating remuneration. Japan has had such a law requiring "reasonable compensation" for inventions for some time, but inventors have only recently started making use of it – including $US8 million awarded by the Tokyo High Court (reduced from an initial $US187 million by a lower court!) to the inventor of the blue light-

emitting diode. As a result, the Japanese are contemplating changing the law. More recently, two British inventors were compensated for an invention of "outstanding benefit".

***Inventor Rights* Act** see **US patent law revision proposals**

inventor's certificate Alternative to patents introduced by the former Socialist countries. Basically the inventor got the customary rewards of Soviet life (medals, more salary, better apartment). Some other countries, e.g., Mexico, briefly introduced similar systems. However, patents never died, even in the anti-capitalist workers' paradise, and all these systems have now passed away.

IPC See **International Patent Classification**.

IPDL (Intellectual Property Digital Library) The Japanese Patent Office's former searchable database. Now superseded by the **J-Plat Pat.**

IPR *Inter partes* review – see **USA**

IPRP See **International Preliminary Report on Patentability**.

issue preclusion Previously known as collateral estoppel, a **common law** estoppel that prevents a person from relitigating an issue. In general, once a court has decided an issue of fact or law necessary to its judgment in a case, that decision precludes relitigation of the issue in a suit on a different cause of action involving a party to the first case. However, a recent US patent decision has applied the doctrine in a case involving a different sued party.

J-Plat Pat (Japanese Platform for Patent Information) The Japanese Patent Office's searchable records database. Replaces the former **IPDL**.

Japanese patent application numbers now have a "normal" format (Gregorian calendar year followed by serial number, e.g., 2001-012345), but older applications carry a date prefix according to the Imperial reign year. In Emperor Hirohito's time (*Showa* reign), the prefix numbers were 25 years less than the Gregorian calendar year (the first year of Hirohito's reign was 1926, S-01 in Japanese terms), i.e., S55- means 1980. Emperor Akihito's first year (*Heisei* reign) was 1989 (H01-), so more recent Japanese numbers start from then. Thus, H10- is 1998. The last Heisei number was H12 (2000).

The most important Japanese number is the early-publication ***Kôkai*** (most of the Japanese documents cited in **Derwent** are *Kôkais*). The Japanese number given on application is different from the *Kôkai*, but, confusingly, has the same format. This problem continues in the new system. (When Japan had pre-grant opposition, there was a third number, the *Kokoku* (publication at acceptance for opposition), in the same format - be thankful for small mercies). The Japanese grant number is a seven-figure serial number (currently in the 4 millions).

Jepson claim Basically a US form of **characterising claim**. Typical form:

> In a process for (known art) wherein the improvement consists of (inventive matter)

joint applicants Completely OK, but can cause complications – it will involve multiple signatures , which can be a nuisance, and of course the parties can fall out. Therefore, avoid, if at all possible.

junior party See USA – *interference proceedings* and ***–derivation proceedings***

jury trial The right to a trial by jury in civil matters is guaranteed under the 7th Amendment of the US Constitution, and this applies to patent cases. Depending on circumstances, some US lawyers may

seek a jury trial if they think their chances may be improved. At one time, juries were even expected to be able to construe claims in US infringement proceedings, but this came to a stop with the advent of **Markman hearings**. Given that even learned judges often struggle with the subject-matter under discussion, jury trials can become a form of lottery, and many are wondering whether it's a good idea.

"kit of parts" claim A type of claim most often found in the pharmaceutical industry, where two or more medicaments are supplied together with instructions for their use in a particular manner (e.g. to be taken in a particular sequence or with a particular timing). The whole must present a true unity, i.e., they must combine to form a true, novel combination, and not merely be additive.

In a recent UK judgement (*Virgin Atlantic v. Delta*), it was held that the provision of a kit of parts (for an aircraft passenger seat) within the UK for assembly outside the UK into an infringing article may constitute infringement.

Kôkai An early-published (pre-examination) Japanese patent application.

Korea-Japan Patent Examination Highway Agreement by which an application granted in one of the countries is given preferential treatment in the other. This may lead to a complete unification of the patent laws of the two countries, with the patent office of PR China possibly joining.

KSR v. Teleflex In full, *KSR International Co., v. Teleflex, Inc.*US **Supreme Court** decision that has had a major effect on how obviousness is defined. Essentially it has put back in place the original standard set down in ***Graham v. John Deere*** and has stopped dead the then-growing concept that, for obviousness, there must be an indication in the art in the direction of the alleged invention (the so-called TSM (teaching-suggestion-motivation) test.

laboratory notebooks Can be used as evidence of **conception** under the **first to invent** rules of the **USA**, but they have to be signed and witnessed. Once applicable only to US records, it now applies to anywhere in the world, provided that the signing and witnessing requirements of the USA are met. Still worthwhile doing under the ***AIA***, for **grace period** purposes.

laches Legal term meaning negligence in the performance of any legal duty, delay in asserting a right, claiming a privilege or making an application for redress. Sometimes arises in patent cases, e.g., in the USA, an inventor wrongfully omitted from a patent application must take action within six years of becoming aware of the fact, or laches will apply.

lack of unity objection Formal patent office objection raised when the office considers that a patent application contains more than one invention. When an **International publication** appears without an **International Search Report**, the reason is almost invariably a lack of unity objection and the applicant being asked which invention s/he wants searched. If the applicant wants other inventions searched, the payment of further search fees will be necessary. If the objection is maintained (and it usually is), it means the filing of **divisional applications** covering the other inventions will eventually be necessary. See **unity of invention**

language, EPO filing Although the **EPO** will process applications in one of the three official languages (English, French, German), it will accept applications from **Contracting States** in the official language of that Contracting State, provided that a translation into an official language is filed within a certain time. This has the odd effect of reducing some EPO fees (those for filing, examination, opposition, appeal). Swiss applicants can get this reduction by including a single sentence (the request for examination) in Italian (an official language of Switzerland).

There is also the curious fact that the EPO will accept a European patent application in Irish, but the Irish Patent Office won't accept a national application in Irish!

language of the proceedings Official **EPO** language in which all correspondence for any given European patent application is conducted. The applicant may correspond in any EPO official language, but the EPO will only reply in the language of the proceedings. It is determined by the official language in which the application is filed and it cannot be changed.

lapse End of a patent or application through failure of the applicant or patentee to take some necessary step, e.g., failure to pay a **renewal fee** or respond to an **office action** in due time. In many circumstances **restoration** is possible. However, during the period between lapse and restoration, the patent/application didn't exist, and a third party is entitled to use it. If the patent/application is restored, the third party will generally be permitted to continue doing what s/he was doing, but no more. For example, if the patent covered A-Z and the third party started doing E between lapse and restoration, s/he would generally be allowed to continue with E, but not extend to D or F. See also **intervening rights**.

Latin A dead language, which, instead of being allowed to rest in its grave with dignity, is frequently disinterred in some odd fields of human endeavour, examples being the Swiss school system, medicine and the law, presumably as a way for some folk to show that they're **so** much cleverer than you are. Thankfully, in patent law, it is relatively rare, but it does occur. Some odd examples of this oddity:

a fortiori – "from the stronger". Denotes proof of a claim by reference to an already decided stronger claim.
a priori – "from what is before". Deductive reasoning (proceeding from causes to effects).
ab initio - "from the beginning". A revoked patent is revoked *ab initio*, that is, there was never any time at which it was valid (i.e., it was not valid up to the point at which it was held invalid).
amicus curiae – "friend of the court". Normally given to a legal brief on a point of law not from a participant in the proceedings. Such briefs are often invited on contentious matters from third parties.
certiorari – "to be searched". Writ seeking the legal review of the judgement of a lower court by a higher court.
ex nunc – "from now". Something that has effect for the future and is not retroactive. For example, the amendment of a patent application is valid only from the time that it is made.
ex parte – "from one party". Legal proceedings brought by one party and without reference to any other parties.
ex post facto – "after the fact". Often, with hindsight. *Ex post facto* analysis by patent offices is forbidden.
ex tunc – "from then". Something that has retroactive effect. A document corrected *ex tunc* is deemed always to have been in this corrected state.
in re – "in the matter of". Generally refers to a case which is not contested by third parties.
inter partes – "between parties". Legal proceedings, in which a third party has the right to make observations or otherwise intervene or be involved (e.g., opposition and infringement proceedings).
ipso facto – "by the deed itself". Often used to say that something that is contrary to law is automatically void.
locus standi – "place of standing". A right to be heard by a court in a legal matter. There are certain matters in patent law where only persons with a specific interest have the right to be heard.
mandamus – "we command". A common law writ from a higher court to a lower court or government officer requiring him/her/it to perform an action that he/she/it is required by law to do.
mens rea (state of mind) Consideration as to what was in the mind of the accused. It has become a point in questions of **inducement to infringe**, which have recently become fashionable in the USA.
mutatis mutandis – "changes changed". Often seen in relation to articles of a law, which are to be applied with any necessary changes with respect to a known article and known set of changes.
obiter dictum – "said by the way". A remark made in a judgement that is not central to the judgement, and that is therefore not legally binding.

quia timet - "because he fears". An action brought to prevent a possible future injury.
ratio decidendi – "the reason for the decision". ←What he said.
reformatio in peius – *reformatio* means "improvement" and *peius* means "worse". It refers to a decision from a court of appeal that is amended to make it worse. It surfaces in **EPO** practice, where it is forbidden in the case of a sole appellant (s/he cannot be placed in a worse position).
res judicata – "a matter [already] judged" – a legal issue that has already been decided between the parties and cannot be ruled on again by the same court (it can of course be appealed to a higher court). In an **EPO** example (T51/08), an applicant who had lost an appeal was prohibited by *res judicata* from raising the same issue with respect to a divisional application.
restitutio in integrum – "restoration to original condition". For example, a patent that is restored after the proprietor has accidentally (and excusably) allowed it to lapse, is considered never to have lapsed.
sui generis – "of its own kind". In IP matters, it refers to subjects meriting protection, but that do not fit into the usual categories. Examples include protection for integrated circuits and databases.

launching at risk The placing on the market by a **generic** company of a pharmaceutical for which it has gained marketing approval, but prior to the end of the relevant patent or **SPC**. By being the first on the market, the generic company hopes to establish a solid position, while hoping that the patent owner doesn't notice or chooses to take no action.

law of nature Laws of nature *per se* have never been patentable (so Isaac Newton could never have patented that celebrated method of apple harvesting), but applications of those laws are patentable, e.g., a gravity-operated pile-driver. The whole business has been thrown into confusion in (where else?) the USA as a result of the **Supreme Court** decision in *Mayo v. Prometheus*, which held that the application of a newly-discovered law of nature is not patentable if the application merely relies on elements already known to the art. There's more to come here, but the USPTO's interim guidance for Examiners is:

1. Is the claimed invention directed to a process, defined as an act, or series of acts or steps?

2. Does the claim focus on use of a law of nature, a natural phenomenon, or naturally-occurring relation or correlation? (Is the natural principle a limiting feature of the claim?)

3. Does the claim include additional elements/steps or a combination of elements/steps that integrate the natural principle into the claimed invention such that the natural principle is practically applied, or are sufficient to ensure that the claim amounts to significantly more than the natural principle itself? (Is it more than a law of nature + the general instruction to simply "apply it"?)

In *CLS v. Alice Corp*, the Supreme Court has extended this thinking to natural phenomena and **abstract ideas**.

learned society publication exception Some laws (e.g., old British) provided a **grace period** of 6 months for filing a patent application whose subject matter was the subject of a paper delivered to a learned society or published in its journal prior to filing the patent application. Still exists in some British Commonwealth countries and in Japan.

legalisation Authentication of patent application documents for a particular country, following **notarisation**. Many countries requiring legalisation are signatories of the Hague Convention and are satisfied with the application of the **Apostille.** However, there are others that demand legalisation at a consulate or embassy – a major trial if the country in question doesn't happen to have a consulate or embassy in the country in which the documents need to be signed. Mercifully, most major countries no longer need legalisation.

letters patent The official grant certificate of a patent. The date of this grant is the beginning of the legally-enforceable monopoly.

licence of right Provision in some patent laws in which the patent proprietor freely offers a licence to anyone who wishes one. The proprietor's **renewal** fees are generally reduced.

licensing Giving someone else the right to work a technology (not necessarily patented, but advantageously so) for a monetary return (generally a down payment and a percentage royalty based on sales). The licensor continues to own all rights to the technology.

life Patentable? A qualified "yes". In *Diamond v.* ***Chakrabarty***, the US Supreme Court held a genetically-modified (and therefore "artificial") microorganism for use in cleaning oil spills to be patentable. And since then, there's been Harvard's "onco-mouse" patent (covering a mouse with an introduced oncogene, that made it more susceptible to getting cancer). A number of patents acts forbid the patenting of human beings and the ***AIA*** forbids the patenting of a "human organism".

life cycle management Like **evergreening**, a euphemism for the pharmaceutical industry's desire to maximise revenues from a patented drug and keep **generics** at bay for as long as possible. It generally consists of patenting variations of the same product of a patent and releasing these on to the market in such a way as to extend the effective exclusivity on the patented drug beyond the usual 20 years. Typical variations include different isomer, mixture with something else, different dosing form, etc.

Lilly v. Actavis Important UK **Supreme Court** decision which addressed the **doctrine of equivalents, purposive construction** and the ***Improver*** questions. The issue was whether Lilly's claimed pemetrexed anti-cancer medicament (limited to the sodium salt) was infringed by Actavis's different salt. The court concluded that there was direct infringement, overturning the decision of the Court of Appeal, which had found only indirect infringement.

The Court reformulated the *Improver* questions as follows:

- Notwithstanding that it is not within the literal meaning of the relevant claim(s) of the patent, does the variant achieve substantially the same result in substantially the same way as the invention, ie the inventive concept revealed by the patent?

- Would it be obvious to the person skilled in the art, reading the patent at the priority date, but knowing that the variant achieves substantially the same result as the invention, that it does so in substantially the same way as the invention?

iii) Would such a reader of the patent have concluded that the patentee nonetheless intended that strict compliance with the literal meaning of the relevant claim(s) of the patent was an essential requirement of the invention?

Lipitor Decision in which the ***Bundespatentgericht*** took an entirely different line from the **EPO Boards of Appeal**, which had allowed a patent to the drug of the same name, and revoked the EP patent so far as it related to Germany. It hinged on the fact that the EPO's test for novelty is **photographic**, whereas the corresponding German interpretation isn't and allows a degree of **implicit disclosure**. (In one particular case, *Lipitor*, the BPG considered that the prior publication of a racemate disclosed the individual enantiomers, even though they weren't specifically mentioned).

London Agreement An attempt to reduce European patent costs by requiring that parties to the Agreement forgo the need to provide translations of the European patent in the national languages of the parties. In countries with an **EPO official language** as a national language, no translation is necessary. Thus, translation of any kind is no longer necessary in France, Germany, Ireland, Luxembourg, Monaco, Switzerland/Liechtenstein and the UK. In Croatia, Denmark, Iceland, Latvia, the Netherlands, Norway, Slovenia and Sweden, only claims need be translated. This group of

countries accepts English descriptions (except for Latvia and Slovenia, which don't require translated descriptions). The Agreement entered into force on 1 May 2008.

long-felt need A **secondary indication** of **inventiveness.** Can tip the balance when an invention otherwise appears obvious. In a classic Canadian case, *Pope Appliance v. Spanish River*, a paper machine was deemed to have an obvious combination of features. However, the advantage was to prevent the crushing of workers' fingers, and as workmen were still having their fingers crushed long after the combination was supposed to have become "obvious", it was held that it was clearly not obvious.

"machine-or-transformation" test US test for patentable subject matter. It states that patentable subject-matter must be tied either to a particular machine or apparatus, or transform a particular article into a different thing or state. It came into prominence with the ***Bilski*** case, when the **CAFC** held it to be the only test. The subsequent **Supreme Court** decision rejected this, saying that it was not the only test, but failing to say what was. So, US courts (and worse still, the **USPTO**) will continue to make it up as they go along.

machine translation A feature offered by some patent offices (notably the Japanese Office) that permits the translation of patents/applications from local (usually non-Latin alphabet) languages into English. Sometimes the JPO's translations seem to be meant to entertain rather than inform (e.g., the rendering of the common perfume aldehyde "lilial" as "Lily Earle"), but, let's face it, it's remarkable that it can be done at all. **Google** is working with the **EPO** to provide better machine translations.

Madrid Agreement/Protocol Agreement facilitating the international registration of trade marks by means of a single application to **WIPO** via a home office. Unlike the **PCT** in patents, it actually does produce an International registration valid in the designated countries.

main request This is a bit of German practice, that has found its way into **EPO** practice. In EPO oppositions, if you lose the main claim, you lose the lot – they don't go to the next claim to see whether that's valid, as they do in British/US practice. To prevent this, a series of "requests" are entered. Thus, the broadest of these, the "main request" may be "maintain the patent as granted". This is accompanied by one or more "auxiliary requests", with increasingly narrow sets of claims. If the main request is lost, there are still the auxiliary requests to be considered.

mandamus See **writ.** Also **Latin**

manner of manufacture In conjunction with its body of interpretative case law, the oldest and arguably the best, definition of what constitutes patentable subject matter there ever has been. It forms part of Section 6 of the UK Statute of Monopolies 1624, devised to stop the British monarch awarding monopolies to his or her buddies. As it says:

> *…letters-patent…hereafter to be made for the sole working or making of any manner of new manufacture…*

Originally subject to a very restrictive interpretation of what became known as **Morton's Rules**, its interpretation by the Australian High Court in the landmark ***NRDC*** decision made it almost infinitely elastic. It remains part of some patents acts in the British Commonwealth.

However, it has finally run up against something that it cannot easily solve – in the 2022 case *Aristocrat Technologies Australia Pty. Ltd. v. Commissioner of Patents*, the Australian High Court was split 3-3 as to whether a gaming program could be considered a "manner of manufacture" according to Section 6. This meant that the decision of the previous court (the full Federal Court) that

it wasn't a manner of manufacture stood. This introduces some uncertainty as to what are the limits of MoM.

march-in rights A controversial provision of the **Bayh-Dole Act**. It allows a funding agency, on its own initiative or at the request of a third party, effectively to ignore the exclusivity of a patent awarded under the Act and award licences to other "reasonable applicants". Grounds are limited, the most important being that the particular party is not taking effective steps to achieve practical application of the invention. Rarely encountered and, so far, never granted.

marketing approval Approval for the sale of a pharmaceutical by a regulatory authority, such as the US Food and Drug Administration. Its date determines the length of **extension of term** that will be awarded or establishes the time limit for awarding an **SPC**.

marking Nowhere of any significance requires the marking of articles or their packaging as "patented". In any case, it is unwise to do this as the abandonment or invalidation of your patent could leave you with a warehouse full of false statements, which can leave you open to legal action.

A recent **CAFC** decision held that the penalty for deliberate false marking was $US500 per falsely-marked article. As a result, there has been a rash of cases, in one of which the theoretical penalty was $US10.8 *trillion*. Fortunately for the marker, no bad intent was shown.

This problem can be overcome by "virtual patent marking", introduced by the ***AIA***. If a person puts "patented" on an article, plus an available Internet address identifying the patents, the person can then make alterations to the patent status on the website, and is absolved from having to change the marking.

Markman hearing Feature of US infringement practice. The Supreme Court's decision in *Markman v. Westview Instruments* to the effect that the interpretation of claim scope in an infringement suit was the job of the court, not a jury, changed US infringement practice fundamentally. Federal district courts now have an initial hearing (a Markman hearing) to consider the scope of the claims, prior to the trial of the substantive issues of infringement/validity. The procedure involves quite tight deadlines.

Markush claim US claim type devised in order to avoid a USPTO objection of indefiniteness as a result of using the word "or" to designate an alternative and approved by the leading US case i*n re Markush*. So, instead of saying "A or B or C", you say "selected from the group consisting of A and B and C". Beloved by chemical patent attorneys everywhere, especially in the pharmaceutical and agrochemical industries, who devise Markush claims which cover half the observable universe.

mass aggregator Simply, a person or organisation that accumulates a very large number of patents. This could be said of the telecommunications companies, who have been buying whole patent portfolios, but these are focussed on particular businesses in which they are directly involved. However, there are now coming other organisations that are collecting portfolios of tens of thousands of patents across a wide span of technologies, facilitating the trading and monetising of patents. There is the potential for giant-sized **troll**ing.

"master and servant" British **common law** principles that decide who has the right to ownership of an invention in an employer/employee situation. The basic position is that, if an employee makes an invention related to the company's business interests in company time, using company materials and it can reasonably be said that part of the employee's duties is to invent, that invention belongs to the company. The basic principles hold good in most places, but the right of the company to inventions is usually enshrined in the contract of employment.

Mayo v. Prometheus US **Supreme Court** case, which forbade the patenting of "laws of nature" in camouflaged form. The court has stretched "law of nature" beyond all reasonable bounds.

"means-plus-function" claim US term for a claim bearing the limitation "means for doing something-or-other", e.g., "means for applying pressure to an element" (i.e., covers any means that can apply the necessary pressure, be it spring of any kind, heavy weight, hydraulic or pneumatic device, etc.). They arise from paragraph 6 of 35 USC 112:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

US courts have been trying to puzzle out exactly what that means ever since.

medical treatment Generally not patentable on ethical grounds. However, the functioning of the law in some countries (Australia, USA), allows some medical treatment coverage.

MERCOSUR (*Mercado Común del Sur*) Latin American free trade organisation, member states, Argentina, Brazil, Chile, Paraguay, Uruguay. A regional patent organisation has been proposed, with the Brazilian Office acting as the central office. Nothing has ever come of it.

"mere discovery" See **discovery**

micro-entity New US category for fee reductions (75%) introduced by the ***AIA***. It includes very small organisations and tertiary institutions.

microorganism For purposes of **sufficiency**, an applicant for a patent relating to a microorganism must deposit a sample with an approved Depositary Authority. On publication of the application, samples are available to the public. The **Budapest Treaty** provides for a network of International Depositary Authorities. See also **expert option**.

Middle East A very mixed bag with respect to patenting, ranging from Israel, which has a well-organised and good-functioning European-type system, to Qatar, where "protection" is obtained by publishing cautionary notices in a local newspaper. However, interest is gradually stirring – some of the conservative monarchies have joined both the Paris Convention and the PCT, and the **GCC** (Gulf Cooperation Council) patent system is a major step forward.

Formerly, all the Arab states required the signing of the **boycott declaration** as a condition of patent grant. This has fallen into nearly complete disuse – even Syria, home of the Central Boycott Office, no longer requires it (but Iraq now does).

Mobil More correctly, EPO **Enlarged Board of Appeal** Decision G2/88, which gave the world **second non-medical use claims**. The world has been trying to figure out what they mean ever since.

MODDERN Cures Act The MODDERN (Modernizing Our Drug and Diagnostics Evaluation and Regulatory Network) Act is US legislation that was previously rejected, but which will probably reappear. The idea is to make available treatments for people with chronic diseases. These treatments, so-called "dormant therapies" are new drugs that were not commercialised (for, e.g., failure to get patent cover or failure in clinical trials). The manufacturer will receive data exclusivity, but must be willing to waive all patent rights.

modified examination A system of examination existing in some countries (notably Australia), in which the progress of examination can be accelerated by bringing the application into line with a patent granted in another jurisdiction (typically in Europe of the USA). It works, provided that the claims granted in the other jurisdiction are what you want. See also **Patent Prosecution Highway**.

There can also be the possibility of **deferred examination** until a patent is granted in the other jurisdiction. In Australia, the request for modified examination can be dropped at any time and a request of regular examination substituted.

monoclonal antibody An antibody that attaches to one particular antigen (typically a disease-causing species) and neutralises it. Widely used in medicine where they can be used to target specific antigens. They are patentable, provided they are adequately described (e.g. by detailing the amino acid sequence, the entity to which they bind and the use). There are differences in the approaches of some patent offices to their patenting, so as complete a description as possible (plus taking care to nail down the best embodiments) is essential.

Monsanto US multinational especially big in the genetically-modified seeds business, and jealously defensive of its patent position in relation to "Roundup-ready" seeds (seeds that are resistant to the Monsanto herbicide glyphosate (Roundup™). Farmers who keep seed from Monsanto GM crops for planting infringe Monsanto's patents. One farmer, a Mr. Bowman, took Monsanto to the US **Supreme Court**, arguing **exhaustion** of rights, but lost.

morality "Contrary to morality or *ordre public*" has always been a ground for denial of **patentable subject-matter**. Subject-matter generally forbidden or unpatentable on moral grounds includes methods of medical treatment (although not drugs or equipment). Some countries do allow limited medical treatment claims However, with the rise of biotechnology, in particular the ability to manipulate the stuff of life itself, for example, gene splicing techniques and **stem cell**-based technologies, the whole affair has become much more complex. .

The issue of morality recently surfaced in the **CJEU** and ***Bundesgerichtof*** in the case of *Brüstle v. Greenpeace* on the subject of the patenting of stem cells. It was held that they could not be patented, if the process involved killing the embryo. In its decision C-364/13, the CJEU held that, in order to be classified as a human embryo, a non-fertilised human ovum must have the inherent capacity to develop into a human being. Consequently, the mere fact that a parthenogenetically activated human ovum commences a process of development is insufficient for it to be regarded as a human embryo. This appears to open a door for further stem cell patenting. However, we have not heard the end of this.

Morton's Rules Guidelines devised by Mr. Justice Morton of the UK High Court to help decide what is a **manner of manufacture** under UK law. Morton considered that "a method or process is a manner of manufacture if it (a) results in the production of some vendible product or (b) improves or restores to its former condition a vendible product or (c) has the effect of preserving from deterioration some vendible product to which it is applied". Although Morton stressed that these were guidelines and not rigid rules, a succession of UK and Commonwealth courts interpreted them in a very restricted manner, until the whole artificial edifice was brought crashing down by the Australian High Court in its ***NRDC*** decision.

mosaicing The practice by patent offices during **prosecution** of combining features of several **prior art** documents to try to prove that an application lacks **inventive step**. Not permitted in **novelty** examination (although in some places (e.g., Europe) a reference in a prior art document to another document allows the combination of the documents in a novelty objection insofar as the latter document is relevant).

MPEP Manual of Patenting Examining Practice, the Bible of the Examiners of the **USPTO**. Most patent offices have similar manuals (the EPO equivalent is the **Guidelines**). Both are available publicly.

multiple priorites If two or more applications with different priority dates are combined into a single application, the various parts of the combined application will retain the priority dates of the applications in which they were included. The combined application is said to have multiple priorities.

Myriad Genetics US case in which the patentability of isolated genes was disputed. Myriad maintained that, as these do not occur in isolated form in nature, they are artificially-created states of affairs, and therefore patentable. The patent was strenuously opposed by the ACLU and others as a restriction on research activities. The US **CAFC** ruled them patentable, even after the **Supreme Court** asked the CAFC to re-hear the case in the light of its decision in ***Mayo V. Prometheus***. Finally the Supreme Court held them unpatentable, but modified genes (cDNA) as patentable.

Nagoya Protocol see **Convention on Biological Diversity**

National Phase At some point in the **PCT** procedure, the application must become a series of national applications in the countries desired. These applications then proceed as if they had been filed as normal national applications and the **International application** that gave rise to them ceases to exist. This is called "entering the National Phase" (Regional Phase, if a regional patent, such as a European patent, is sought). The "some point" is 30 months at the latest from the **priority date** (31 months allowed in some places). National Phase is not possible for some **EPC** countries, e.g., France – a French national application is not possible and the application must proceed via a **European patent**.

national security Because of national security considerations, many countries require that patent applications originating within their national boundaries be first filed with the national office or be cleared by that office prior to filing elsewhere. Countries with such requirements include the USA, China, France, Italy and Singapore. Most countries will grant a **foreign filing licence** to file outside the country. Countries with no national security provisions include Germany, Switzerland and Australia, and inventions originating there can be priority-filed anywhere in the world. Also true of UK-originating inventions, provided that the subject-matter does not fall within a list of defined national security-related categories (available on the UKIPO website).

In many **EPC** Contracting States, European filing must be made via the national patent office (e.g., France).

If the subject-matter of an application is a concern for national security, it may be the subject of a secrecy order, such that its publication and grant may be suppressed, often for many years. See p.20 and US6097812 in Appendix A for one particular example.

Native American tribes are immune from prosecution for US patent infringement, even away from reservations and tribal lands. Native American tribes enjoy the same immunity from suit enjoyed by sovereign powers and are subject to suit only where Congress has authorized the suit or the tribe has waived its immunity.

neighbouring fields Concept in **inventiveness** considerations in European patent law. The **person skilled in the art** is supposed to know not only his own technical field but also something of both "neighbouring fields", plus a grasp of areas in which the problem s/he wishes to solve could be encountered. Does a fish hook destroy the inventiveness for a similar crane hook? Is a hinge for a domestic cupboard door rendered uninventive by a similar arrangement on an aircraft hangar door? It all depends on the facts of the individual case.

US law has a similar **analogous art** doctrine..

new matter Anything added to a patent application beyond what was already there. Strictly forbidden in most places (to the extent that an addition of a specific mention of "ethyl" constitutes new matter even if "C_{1-4} alkyl" were already there). The USPTO will allow the addition of new matter in some circumstances (see **USA *continuation-in-part application*** below).

New Zealand was the last major holdout of old British-type patent practice (local novelty, prior claiming, examination only for novelty). It finally changed on 13 September 2014, some 20-odd years after first being proposed. However, good ol' **manner of manufacture** remains as the definition of "patentable invention".

newspaper advertisement Formerly in some countries, particularly in the Middle East, the only way to obtain some sort of patent protection was to place a cautionary notice in a local newspaper. This has now virtually died out, only Qatar maintaining the system.

No-Fume Classic British decision (*No-Fume Ltd. v. Frank Pitchford*) also applicable in European law. It is the basis for permitting **claiming by result**, if no other method is possible.

non-Con filing Foreign filing of a patent application without claiming **Convention priority**, usually applied to applications filed outside the priority year for reasons of late decision, etc. The **filing date** is the actual filing date in the country. There is no problem if this is done before **early publication** elsewhere at 18 months and sometimes (depending on country) later.

Non-Practising Entity (or, in American Non-Practicing Entity, which is where they occur). Otherwise known as a **patent troll**. An entity that acquires patents purely for the purpose of extracting money from other people by filing lawsuits, banking on the recipient being prepared to pay to make the NPE go away, rather than endure the time and expense of a US lawsuit. Most infringement suits in the USA are brought by NPEs. The **SHIELD** Act is one proposal for preventing this abuse.

notarisation Signing documents before a notary public, who, after receipt of identification, witnesses that the signatories are who they say they are. The necessary first step to **legalisation.** Thankfully, not necessary for most places.

novelty An essential requirement for **patentability**. Novelty simply means new in relation to what was known to or used by the art at the time of application date or **priority date**. Different considerations of "what was known or used" lead to three basic varieties of novelty existing in the various countries of the world:

> absolute novelty - anything published anywhere in the world in any language by any means (oral, use, trial, printed publication, written communication) before the application/priority date destroys novelty. Used by the European Patent Office, the individual European countries, and now many others.
>
> local novelty - only publication or availability within the country is destructive of novelty - no account whatsoever is taken of what happens elsewhere. A feature of old British-type law, now virtually extinct (the last major holdout, New Zealand, changed to absolute novelty on 13 September 2014).
>
> relative novelty - printed publication anywhere, but only local use or oral disclosure, destroys novelty. Used by, e.g., the USA, but now applies only to applications filed before the full arrival of the ***AIA*** on 26 March 2013.

In addition, there are various interpretations as to how exactly the alleged prior art describes the claimed invention. In some jurisdictions, for example, the **EPO**, novelty is "photographic", that is, the claimed invention must be there in precise detail. Thus, a claim to a particular enantiomer is not anticipated by a disclosure of a racemate of the same substance, even though that enantiomer must be present and could be provided by standard separation techniques. On the other hand, the German courts (both the ***Bundespatentgericht*** and the ***Bundesgerichtshof***) consider that a racemate inevitably discloses its components.

See also **inventive step**.

novelty; acts not constituting publication Generally there are only two of these, publication of an invention prior to application without the proprietor's permission, and presentation of the invention at an **International Exhibition**. In both cases, the proprietor must file within 6 months. Old British law allowed two further acts, presentation of a paper to a **learned society** or publication of a paper in the journal of such a society, and use in public, if such use was reasonably necessary for defining the invention. These still exist in some Commonwealth countries. Japan retains the learned society provisions.

NPE see **Non-Practising/Practicing Entity**

NRDC In full, *National Research Development Corporation's Application*. Landmark High Court of Australia decision that enormously broadened the scope of **manner of manufacture** as a definition of invention. It has been followed in all British Commonwealth countries that use the definition.

numerical limits in patent claims What exactly do they mean? If I say "1-25%", how far below that 1 does my boundary extend? Experimental error? Significant figure? In the recent UK case *Smith & Nephew v. ConvaTec*, this very case was examined. The Court of Appeal overturned the original decision that 1 could extend to 0.95, and said that, as 0.5 is rounded up to 1, the claim extends from 0.5-<25.5%. Care is needed when defining with numerical limits.

OAPI *Organisation Africaine de la Propriété Industrielle*. African Regional Office covering the countries of French-speaking Africa (Burkina Faso, Benin, Central African Republic, Chad, Congo, Côte d'Ivoire, Cameroon, Gabon, Guinea, Equatorial Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal, Togo). Can be designated in a **PCT** application. OAPI patents are unitary patents, it is not possible to select particular countries and ignore others.

"obvious to try" An **inventiveness** or **obviousness** argument that is becoming more popular. If the difference between your invention and the prior art is very small, Examiners all over the world will then say that the invention is obvious to try to the person skilled in the art. This is a particular trial with genuinely novel chemical compounds which differ only slightly from the prior art. The only real way to counter is to have evidence of the superiority of the invention.

obviousness See **inventive step**.

"obviousness-type double patenting" Uniquely US **double patenting** objection, in which there is no actual identity of subject-matter, but one is held to be an obvious derivative of the other. Curable by **terminal disclaimer**.

offensive patenting The filing of patent applications all around an important patent of a competitor to try to swamp the area and dominate it. Some US companies have made a specialty of the latter (usually pointless) practice. However, it's somehow comforting to know that, in these cost-conscious times, there are people with that much time and money to throw away.

official (or office) action The name used in the patent profession for an official correspondence from a patent office commenting on a patent application and requiring a response.

OHIM (Office for the Harmonisation of the Internal Market) see **European Union Intellectual Property Office.**

omnibus claim Claim which claims the examples (or drawings), generally of the form "A compound substantially as described with reference to any one of the examples". Allowed in UK and some Commonwealth countries.

on-sale bar Feature of pre-***AIA*** US law. If an invention were sold or offered for sale more than one year before the filing date of a patent application (i.e., outside the US **grace period**), that sale or offer invalidated that application. It only needed an offer for sale and its acceptance to constitute a commercial dealing. Not applicable to applications filed under the AIA, but will still hold for older applications.

"102(e) date" 35 USC 102 is the provision in the US patent law dealing with novelty. Subsection (e) deals with the date at which a document may be considered available to the public, and therefore whether it may be considered **prior art.** The ***AIA*** has changed considerably the US definition of what is considered prior art in the USA, and the effective filing date of a US application claiming a foreign priority date is now the foreign priority date, not the US filing date. Previously, many applicants filed US applications shortly after their own priority applications, in order to ensure as early a US effective filing date as possible. This is no longer necessary.

opposition Patent Office procedure that allows third parties to object to the grant of a patent. Cheaper and simpler than court action. Can be pre-**grant** or post-grant. In some post-grant opposition countries (e.g., UK), called **revocation**. The ***AIA*** has introduced a sort-of opposition procedure (called post-grant review (see under **USA**)), but it is really more a mini-court proceedings and will be much more expensive that other countries' oppositions (although bargain-basement in comparison with US court costs).

opting out For a **transition period**, it will be possible for proprietors of and applicants for European patents to opt out of having their patents under the jurisdiction of the **Unified Patent Court**, as opposed to the national courts as is currently the case. Whether to do so will be determined by individual circumstances.

oral disclosure (non-confidential) of an invention prior to filing a patent application. NO!!!! See **public use**. Same conditions apply.

oral proceedings The EPO's term for any sort of hearing conducted by one of its divisions. Oral proceedings are a fundamental right of all EPO applicants and will always be granted on demand. It is standard practice to request oral proceedings as a precautionary measure, in order that one cannot be surprised by a **decision**, which can only be reversed by lodging an **appeal**, which usually involves more time and money.

Orange Book Publication of the US Food and Drug Administration, official title "Approved drug products with therapeutic equivalence evaluations", available in on-line searchable form (it once was an actual orange-covered book). Its purpose is to expedite entry of **generic** drugs into the market, while simultaneously protecting the interests of drug patent owners. The Orange Book entries provide considerable data on the drugs, and it is an essential part of the **Hatch-Waxman Act** provisions that allow generic manufacturers to use original data for the filing of **ANDA**s, so that the generics will be ready for launch as soon as the drug patent expires.

ordre public See **patentable subject matter**.

overseas/dependent territories, patenting in Patents in a country often also apply to at least some of its overseas territories. Some examples:

French patent – DOMs (Overseas *Départments*) (Guadeloupe, Martinique, Réunion and French Guyana), TOMs (Overseas Territories) (French Polynesia, Wallis and Futuna, the French Austral Islands and the French Antarctic territories), in *Collectivitiés Territoriales* (St Pierre et Miquelon, Mayotte) and in New Caledonia and dependencies.
UK patent – British Indian Ocean Territory, Swaziland (see **registration**)
Dutch patent - Sint Maarten, Curaçao, Bonaire, Sint Eustatius and Saba,
USA – Guam, Puerto Rico, US Pacific Islands, US Virgin Islands.

P2P see **peer to patent**

PACE Acronym for **P**rogramme for **ac**celerated **e**xamination. **EPO** programme that allows for faster examination, if particular conditions are met. A revised PACE procedure will go into effect on 1 January 2016.

PAE Patent Assertion Entity – see **patent troll.**

PAIR (Patent Application Information Retrieval) The **USPTO**'s equivalent of **Epoline**, a system for allowing on-line access to, and downloading of, all documents relating to a US patent application while it is progress, material that formerly could be accessed only after US grant (which is still the case for the small minority of US-only applications where publication on grant is requested).

Paragraph IV certification Requirement for a generic drug manufacturer who is seeking an **ANDA** under the US **Hatch-Waxman** Act. The generic must be able to certify one of the following for each relevant patent in the **Orange Book**: (i) no patent information has been filed, (ii) the original patent has expired, (iii) the patent will expire on a specific date, or (iv) the patent is invalid or will not be infringed by the manufacture, use or sale of the generic drug. The generic manufacturer must give notice to the drug owner, with reasons why there will be no infringement or the patent is invalid, and the owner is entitled to sue for infringement within 45 days of receiving notice. This act triggers a 30-month stay of FDA approval and the ANDA. The generic applicant has a "safe harbour" in respect of its use of the patent for the purposes of obtaining regulatory approval.

parallel importation Parallel importation generally arises more in the trade marks area, but in a patent sense, it is the import into a country by someone other than the patentee or his or her agent in the country of goods covered by a patent in that country and legitimately acquired outside the country. Allowable? Generally no, but there are exceptions. In the BBS "Aluminium Wheels" case, the Japanese Supreme Court held that BBS could not stop the importation of patented BBS wheels by a non-agent.

One particular patent case arises in the **EU**, and involves the purchasing of patented goods in one EU state and reselling in another where there is an equivalent patent. In most EU countries, the equivalent patent cannot be used to stop the importation, because the patent right is deemed "exhausted" in all EU member states once a sale has been made anywhere in the EU. This is particularly prevalent in the pharmaceutical industry, in which the ease of transport of high-value drugs and the price differentials in various countries caused by national policies can make such transport and sale worthwhile.

Paris Convention 1883 treaty which regulates international industrial property affairs. One basic principle is that a foreign applicant for an industrial property right in a Convention country should receive treatment equal to that accorded to a local of that country. Part of this is the concept of

Convention priority. Current membership (May, 2013) 174 states, significant non-member, Taiwan. As of 1st. January, 2000, **PCT** recognises the priority of patent applications originating from **WTO** members that are not signatories of the Paris Convention.

Parker v. Flook See ***Diamond v. Diehr***

partial priority A patent application can have several **priority dates**. If a priority application with filing (and therefore priority) date A is augmented when the application is foreign-filed on date B, the original matter will retain A as priority date, but the new matter will have B as its priority date. Litigation can become complex if there are claims with two different priority dates.

passing off action A legal action at **common law** seeking to prevent the "passing off" of the alleged infringer's goods as genuine goods. Applicable only to non-statutory rights (trade marks, unregistered design right). For success, a court has to be satisfied that the complainant has suffered damage to his or her business and/or reputation (not always easy to do).

Patent Abuse Reduction Act 2013 proposed US legislation that seeks to curb abusive (and expensive) patent litigation and make the whole business more transparent. Early days. See also **SHIELD Act**.

PATENT Act See **Innovation Act.**

patent agent (a) Former British name for a **patent attorney**. Only practitioners who have passed the examinations of the Chartered Institute of Patent Attorneys (formerly Agents) are entitled to call themselves patent attorneys.
(b) In those countries in which an "attorney" must be qualified in law, e.g. the USA, a patent practitioner who does not have a law degree, but who has passed a patent exam. In the USA, a patent agent is restricted to activities before the USPTO; s/he cannot represent clients in court, nor can s/he draft agreements or give opinions on infringement or freedom to operate (these activities would constitute practising law without a licence). Thus, in **private practice**, it makes a big difference in pay and prestige. However, in a recent decision, the **CAFC** held that **privilege** applied to agents.

patent assertion entity See **patent troll**

patent attorney Legal professional who works in the field of patents and is entitled represent clients before a national or regional patent office, and in some cases (UK, Germany) before specialised patent courts. The name means different things in different countries. In some countries (e.g., USA, S.Africa), the title "attorney" is restricted to qualified lawyers. On the other hand, a European Patent Attorney requires a pass in the European Qualifying Examination, but no law degree. See ***Patentanwalt***

"patent box" Scheme that allows companies to apply a lower tax rate to profits earned from patented inventions and certain other innovations. Countries that operate such a scheme include China, Belgium, UK, France, Netherlands, Italy and Belgium. The US is considering it. The UK scheme will close on 30 June 2016.

patent clearance The ascertaining that a proposed new product or process (usually one for which no patent will be sought) does not infringe valid patents of third parties.

Patent Cooperation Treaty See **PCT**.

"patent dance" Procedure under the US Biosimilars Price Competition and Innovation Act in which **biosimilar** manufacturer and innovator are supposed to resolve differences by sharing information

according to a defined time schedule. So far (e.g. *Amgen v. Sandoz*) it doesn't seem to have worked very well.

Patent Law Treaty International treaty seeking to harmonise formal procedures. As of January 2014, there are 36 Contracting parties, including most major countries and the EPO.

patent linkage The communication between national regulatory authorities and Patent Offices to prevent marketing approval of **generic** drugs until after the expiration of patents covering the drug product or approved use. Generic companies seeking marketing approval must demonstrate that the pharmaceutical product for which they are applying is not protected by a valid patent. Under this kind of regulation, national regulatory authorities have an obligation to prevent registration and marketing of generic pharmaceuticals when a patent covers the product. Somewhat controversial, in that it can effectively make a Government authority the policeman of a patent, rather than the patent owner. It us a fundamental part of the US **Hatch-Waxman** legislation and variations occur in some other countries. See also **Paragraph IV certification**

patent monetization entity See **patent troll**

patent of addition See **addition, patent of**.

patent of confirmation See **revalidation**.

patent of importation See **importation**

patent of revalidation See **revalidation**.

patent pool A consortium of companies or individuals all operating in a particular area and agreeing to **cross-license** their respective patents. Such a pool can give small entities relatively large clout, and it can save patentees and licensees time and money. On the other hand, there may be **anti-trust** aspects, depending on the activities of the pool, so care in its operation is needed. A typical pool is made up of the 20 companies involved in RFID (radio frequency identification) technology.

Patent Prosecution Highway (PPH) Name given to any of a number of systems involving patent offices cooperating with each other to share search and examination results and to accept the results of the other(s), thus accelerating examination and reducing duplication and (hopefully) costs. These are becoming more important. The USPTO in particular now has a substantial number of these. The EPO has a trial programme. The catch is often that the application must be brought into exact conformity with the foreign grant (as per Australian **modified examination**), which, if undesirably narrow, is not really what you want.

Two new PPHs launched in 2014.

IP5 PPH The five largest patent offices (China, EPO, Japan, Korea, USA) will participate in this.

Global PPH This pilot programme will run alongside the IP5 PPH. The participants will be the patent offices of Australia, Canada, Denmark, Finland, Japan, Korea, Nordic Patent Institute, Norway, Portugal, Russia, Spain, UK and USA (**not** the EPO).

patent thicket Trendy name for what patentees have always done, protect important patents by filing dense and often overlapping patent applications around the critical patent.

patent troll (also known as PAE (patent assertion entity) or patent monetization entity) Trendy name for people who indulge in aggressive behaviour with respect to patents, although an exact definition is

hard to pin down. Generally it involves aggressive infringement action against third parties (often with patents purchased cheaply (e.g., from bankrupt companies)), without serious intention of ever selling products under the patents and trying to squeeze licence payments or lawsuit settlements out of the victims. The whole business has come in for considerable (and somewhat exaggerated) attention in the USA, where legislators have been proposing all sorts of legislation seeking to minimise it. See also **mass aggregator, NPE**.

Patents County Court See **Intellectual Property Enterprise Court**

patentable subject matter No satisfactory universally-accepted definition exists. Basically anything having relevance to practical affairs is patentable, but the **EPC** insists on there being a "technical effect", which reduces its ability to grant patents on e.g., the business methods and non-technical computer programs allowed by the USA. This is seen as a major disadvantage by European business, and the **EPO** will grant patents on these subjects on the flimsiest of technical justification. See also **invention**.

In the USA, the arrival of the ***AIA***, plus a number of **Supreme Court** decisions, notably ***KSR, Alice***, ***Mayo*** and ***Myriad***, has tossed an entire toolbox of spanners into the works, and the situation is currently far from clear. The USPTO and the US profession are still trying to come to grips with a mass of vague and often slightly contradictory rulings from a Court that is not only clueless about patents but often antagonistic towards them (surprising for a basically right-wing, business-friendly court). If your idea involves “laws of nature”, “natural phenomena” or “abstract ideas” (whatever they mean), advance with caution…

A recent issue in the USA is whether the lack of patentable subject matter in a granted patent is a defence against an infringement action. The US Act doesn’t explicitly say that it is, only mentioning lack of novelty and utility, and obviousness (non-inventiveness) as defences. The suspicion is that it is, but the outcome of *RMail v. Amazon.com and PayPal* will throw more light on the subject.

Patents are generally not granted on subject-matter that is perceived as contrary to law, **morality** or *ordre public*, scientific discoveries and principles without practical effect. “Contrary to law” has sometimes been extended to “natural law”, such as the second law of thermodynamics and the consequent prohibition on **perpetual motion** machines. “Contrary to *ordre public*” precludes the patenting of, for example, letter bombs and other means of terrorism, technologies capable of disrupting telecommunications or otherwise harming the general public.

patentability In order to be patentable, an invention should have the following requirements

- it should be suitable subject matter for a patent (see **patentable subject matter** and **invention**)
- it should have **novelty**
- it should have **inventive step**
- it should be **industrially applicable** (in the USA, should have **utility**)
- it should have **sufficiency**

There are also **secondary indications**, which can assist in borderline **inventive step** cases.

Patentanwalt German for **patent attorney**. In Germany, the title is used only for private practice **patent attorney.** The industry equivalent is a *Patentassessor*. The only difference is that one works in industry and the other in the private profession. Both have to do training periods in the German Patent Office, the ***Bundespatentgericht*** and private practice and do the same set of exams. Both are entitled to represent clients before the **Bundespatentgericht**. In Switzerland, as of 1 July 2011, it is a protected title, and only appropriately-qualified people on an official register can use the title.

Patentassessor See previous entry.

PatentIn Software used by a number of patent offices for the preparation of patent applications containing nucleic acid sequences.

patenting in dependent/overseas territories See **overseas/dependent territories, patenting in**

patrimoine national **(national heritage/wealth)** A concept in French patent law. An invention deemed to belong to the *patrimoine national* cannot be the subject of a **priority application** outside France. But what exactly is the *patrimoine national*? There's no definition, and it is possible that the French Ministry of Defence (which clears inventions made in France for priority filing outside France) will decide that an invention is not part of the *patrimoine national* and give permission, and a French court will later reverse the Ministry's decision.

A patent application from a French applicant must be first-filed in France. The presence of a French-domiciled inventor on an application for a non-French applicant does not oblige the applicant to first-file in France. However, due consideration of the field of the invention, and whether it could fall within the ambit of the *patrimoine national,* should be given.

"pay for delay" An agreement between a pharmaceutical company and a **generics** manufacturer in which the former pays the latter to keep its forthcoming generic product off the market, so that the company can continue profiting from it. Held to be a violation of the Sherman **Antitrust** Act in the USA and anti-competitive behaviour by the EU.

PCT (Patent Cooperation Treaty) Treaty that provides a mechanism for filing in a number of countries (155 at April 2022) of a single application. The procedure involves **International application**, **International search**, **International publication** and (optional) **International Preliminary Examination** of patent applications. Run by the **International Bureau** of **WIPO**. Expensive, but in some circumstances worth it. Major gaps in coverage, **Paris Convention** non-signatories (Taiwan), much of Latin America and the Islamic world, but as of 1st. January, 2000, PCT recognises the priority of patent applications originating from **WTO** members which are not signatories of the Paris Convention.

PCT-EASY Part-electronic filing system used by the **PCT** that allowed applications to be submitted on floppy discs (remember them?). With the advent of **PCT-SAFE** and **ePCT**, it will disappear on 1 July 2015.

PCT-SAFE ("Secure Applications Filed Electronically"). Competely electronic filing system of the PCT.

"peer to patent" (P2P) Experimental programme that seeks to improve the quality of patents by involving outside volunteer experts in the prior art searching of applications, thus making available to Examiners prior art of which the Examiners would not normally be aware. The system uses social software (Facebook-like) to permit discussion. Applicants willing to undergo P2P have their applications advanced to the head of the examination queue as a reward. Trials have been carried out by the US, UK and Australian Offices in a selected technical area (software and business methods), and the results have overall been considered successful, although the whole idea is open to various criticisms.

perpetual motion The classic crackpot invention. Perpetual motion machines may be rejected on the ground of lack of **utility**, in that such a machine, even if it could be made, would perform no useful

function. The **MPEP** of the **USPTO** specifically prohibits their patenting, but that hasn't stopped people from getting grant on camouflaged perpetual motion machines. See also **SAWS**.

person skilled in the art Sometimes known as PHOSITA ("person having ordinary skill in the art"). The person to whom a patent is addressed and whose judgement is therefore the one that matters when deciding on **novelty, inventive step** & **sufficiency**. The person is deemed to be of ordinary skill, to have access to everything disclosed on his/her particular field and to be completely unimaginative or uninventive. It is a convenient legal fiction, made inconvenient by the fact that different countries have different ideas about how much this person knows.

More recently, there has been more thought given to the fact that much important work is done and many important inventions are made by teams rather than individuals, often multidisciplinary teams. There is a tacit recognition that "person" in the singular can also refer to a team. So, how is inventiveness to be judged in the light of a team having ordinary skill in the art (THOSITA) with its greater experience and breadth of knowledge? The jury is still out on this question.

petition for review EPO procedure that allows the **Enlarged Board of Appeal** (EBA) to review decisions of the **Boards of Appeal** (BoA), but only on the basis that the petitioner has been disadvantaged by a BoA decision as the result of a substantial procedural defect made by the BoA during the appeal proceedings. Examples of such defects are that the appellant did not have sufficient opportunity to comment on grounds or evidence, or that a BoA member had a personal interest in the proceedings – there is no possibility of reviewing substantive matters such as novelty or inventiveness. Moreover, the reason for objection had to be in the BoA's written decision. If the EBA decides that the petition is allowable, it will have the BoA reopen proceedings. To date, very few such petitions have been ruled eligible.

A surprisingly large number of such requests have been filed since the provision came into force, but very few have been allowed.

petition to make special US law provision that allows accelerated examination for applicants in very poor health or over 65. It is free.

petty patent See **utility model.**

PGR. Post.grant review – see **USA**

pharmaceutical patents Because of the public health aspects of the subject, the enormous investments involved in drug research and the astronomical profits from a successful "blockbuster" drug, this aspect of patenting has taken on a life of its own, with a set of procedures and considerations quite distinct from the rest of the chemical patent world. There is a continuing struggle on the part of regulators on the one hand to allow a reasonable return on investment to encourage the development of new drugs, and on the other hand to stop the manufacturers from robbing the world blind by encouraging **generic** manufacturers. The US situation is especially complex. See also **ANDA, Bolar exception, clinical trials, data exclusivity, "evergreening", exhaustion of rights, generic, Hatch-Waxman Act, life cycle management, Orange Book, patent linkage, "pay for delay",** "**safe harbor".**

***Phillips* Standard** A US claim construction standard introduced in the **CAFC** case *Phillips v. AWH Corp.* According to the *Phillips* standard, a claim term must be given the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. This is different from the "broadest reasonable interpretation" standard used by the USPTO in examination.

It has been decided by the USPTO that it will use the *Phillips* standard in all post-grant proceedings in which the validity of a patent is challenged (see **USA**).

'phone wars Mammoth patent struggle between the goliaths of the mobile phone world, primarily Apple and Samsung, although Apple's real target is certainly Google and its Android system. The fight revolves around various patent features in the iPhone. A side-issue is Apple's attempt to stop sales of Samsung's tablet computer, partially on **design** aspects. This has had only partial success, partially (in the UK) because of Apple's clearly "cooler" design.

PHOSITA See **person skilled in the art**

photographic novelty The standard for **novelty** in many countries (e.g, the EPO), but not all (e.g. Germany). The requirement is that the novelty-destroying citation must disclose the alleged invention exactly in every detail – **implicit disclosure** is not sufficient.

photographs As illustrations in a patent application, B/W photos + relevant description are generally allowable. Colour photos are generally not necessary and are generally not allowable, although some patent offices will allow them, if you are prepared to provide all the colour photos they need. Remembering that patent offices routinely swap patents between themselves, this could be a lot.

physical parameters, definition by Some physical parameters are fine as they are, e.g., temperature (assumed, unless otherwise stated, to be measured at STP). However, others are not, e.g., polymer molecular weight (weight-average or number-average?) and viscosity (very dependent on the method of measurement). Such things should always be specified – if they're not, you may have an **indefiniteness** problem. And you can't add a method, because that would constitute **new matter**.

pioneer invention An invention covering a major technological advance, with few or no technical antecedents, and therefore able to have a particularly wide scope. Under U.S. law, the claims of a patent granted on such an invention are entitled to broader interpretation and, therefore, to cover a broader range of equivalents. However, the US case usually quoted, *Westinghouse v Boyden Power Brake Co*, was decided in 1898, and it is very doubtful whether the concept is in any way meaningful today, where most inventions are incremental improvements on known technology.

plant patent Type of US patent covering asexually-produced plant varieties. Not the same as **plant variety rights** in the USA and elsewhere.

plant variety rights (PVR) Rights granted on stable sexually-produced plant varieties. In effect, an entirely different system of protection, with different considerations. They are regulated by the UPOV (*Union Internationale pour la Protection des Obtentions Végétales*) Convention. PVR owners have a monopoly on propagating material (seeds, cuttings, tissue culture) and harvested materials (fruit, cut flowers). Duration is 20 years (25 years for trees and vines).

plants and animals Patenting of plants and animals is allowed in some countries, not in others. As mentioned above, the USA has **plant patents**. In Europe, the **Enlarged Board of Appeal** decisions G2/12 and G2/13 (known as *Tomatoes* and *Broccoli*) allowing patent protection for plants (and animals) produced by "essentially biological processes" were overturned by G3/19 (*Pepper*). This brings the EPO into compliance with the European Commission's Notice 2016/C 411/03, which states that such things should not be patentable.

plausibility The requirement that an invention in a patent application be plausible, i.e. that what's claimed can be reasonably assessed to be true across the entire breadth of the claimed scope, is present in nobody's patent law, but has arisen in both the EPO and the UK. It arose in areas in which a chemical compound interacts with a natural system, e.g. a pharmaceutical or an agrochemical, and

whether the often very broad **Markush** claims in such applications are plausible in the light of the description/examples provided, i.e. do all of the claimed compounds provide the desired effect?

The general feeling is that the application as filed should at least contain sufficient reason as to whether an invention is plausible, without the need to rely exclusively on **post-published data**.

PME Patent monetization entity – see **patent troll**

"poisonous divisional" A postulation that, in some cases in the filing of a divisional of an **EPO** application, the divisional may lack the right to **priority** and therefore be anticipated by the parent. In some other cases, it might be the reverse, that the divisional anticipates the patent. It arises in the case of partial or multiple priorities. It now seems also to have surfaced in Australia.

As a result of EPO case T557/13, the question was referred to the **Enlarged Board of Appeal**, which, in G1/15, ruled against it. RIP (or rather, good riddance).

"poisonous priority" A particular interpretation of the **EPO**'s law on **partial priority**, and in particular **Enlarged Board of Appeal** decision G2/98, leads to the rather odd circumstance that a patent application might be anticipated by its own priority document. There has been much speculation as to what it all means. The Enlarged Board of Appeal dealt with it in G1/15 (see previous entry).

post-grant review (PGR) US proceedings introduced under the **AIA. (**See **USA**)**.** Japan is introducing a similar procedure, to avoid the current complexity of an **invalidation trial**. Questions have been raised as to the constitutionality of the US proceedings.

post-published data Data seeking to prove the efficacy of a pharmaceutical/agrochemical after the filing of the application. Most of such applications are filed without knowing what actually works (e.g. clinical trials of a pharmaceutical candidate are generally nowhere near complete, and even the lead compound my not be known). Allowable under which circumstances? The EPO **Enlarged Board** is currently considering the question as case G2/21.

postal problems Patent Offices have procedures for dealing with documents lost in the post, but only for things sent by registered mail. A good feature of US practice is that an application is deemed filed as of the moment it is presented to and stamped by the US Postal Service, for delivery by registered mail. In the case of wider postal disruption, e.g., strikes or natural disasters, patent offices can extend periods for lodging applications or other documents. These are usually gazetted.

poster Does a poster at a scientific conference constitute a publication for the purposes of **novelty**? A recent US ***inter-partes review*** case (*Coalition for Affordable Drugs v. Acorda*) suggests that it doesn't always. Relevant considerations, following **CAFC** precedent, were whether the poster had been on view for long, expertise of the audience, whether it could be copied and ease of copying. Without evidence of these, it could not be accepted as a publication.

PPH see **Patent Prosecution Highway**

pre-issuance submissions See **USA**.

precedent A previous legal instance which is taken as an example or a rule in a similar case. Especially important in **common law** juristictions, in which a lower court will only deviate from a ruling of a higher court if the facts are appreciably different.

preliminary injunction Injunction allowing rapid stop of alleged infringement. For award of such an injunction, plaintiff must establish that s/he is likely to succeed on the merits, that s/he is likely to suffer irreparable harm in the absence of preliminary relief, that the balance of equities tips in his/her favor, and that an injunction is in the public interest

presumption of validity A patent is presumed valid unless it is shown otherwise. When giants clash in courts on a matter of patent **infringement**, the presumed infringer often attacks the validity of the patent – if the patent is invalid, there's nothing to infringe. The question that has arisen in the USA is the standard of proof required to show patent invalidity. The US traditionally requires "clear and convincing evidence" of invalidity, and the US **Supreme Court** confirmed that this standard, not preponderance of evidence, applies to prior art that wasn't considered during the grant procedure (*Microsoft v. i4i*).

prior art A term covering everything known and used in the technical field of a patent application at the application or **priority** date of the application. Used primarily for written material (patent specifications, textbooks, journals, etc.), but also includes oral disclosure and use in public. The texts of patent applications filed before, but published after, your application, and about which you couldn't possibly have known, are citable in sensible countries only as **novelty** citations – they cannot be combined with anything else to provide an **inventiveness** (**obviousness**) argument. Non-sensible countries (e.g., the USA) can use them in obviousness objections. (see **USA *secret prior art***).
If the prior art is all really old, this could be a **secondary indication of inventiveness.**

The US definition of what constituted prior art was always somewhat different, but this has changed with the ***AIA*** (see **USA** *Hilmer Doctrine*).

prior art in patent applications Patent applications with long dissertations on the prior art can often be seen. This is not always a good idea as you can actually make something that isn't state of the art into state of the art. The **EPO** requires only the closest art.

prior art search Before filing a patent application, it is essential to know (as well as you can) what is already out there, so a prior art search is an essential first step. Easily arranged.

prior claiming The idea that **novelty** could only be destroyed if the prior document had a valid claim that covered the same subject-matter. This was old British law and was also used by many Commonwealth countries. The primacy of the claims was famously stated in *EMI v. Lissen* – "the forbidden field is to be found in the claims and nowhere else – what is not claimed is disclaimed". One way out was to show that the later application covered a valid **selection**. Now largely superseded by the **whole contents** approach, although recent case law in Australia shows that the two approaches are closer than anyone thought.

prior commercial use In everywhere but the USA, this was regarded as proof against patent infringement, and even as prior art against any such patent. It previously applied in the USA only to business method patents. The ***AIA*** has extended this to all technologies.

prior user rights See **USA**

priority Should two people independently come up with the same invention, the invention is deemed to belong to the person who got there first; he is said to have "priority". The definition of "got there first" recognised by most of the world is the earlier date of filing of a patent application (the "first to file" system). Previously, the USA used an entirely different system, the "first to invent" system (see **USA *first to invent*** below), but this ended with the ***AIA***. First-to-invent still applies to many applications filed before 16 March 2013 (date of the full coming-into-force of the AIA).

Under the provisions of the **Paris Convention**, priority may be recognised internationally (see next item). As of 1st. January, 2000, PCT recognises the priority of patent applications originating from **WTO** members which are not signatories of the Paris Convention. This will allow priority to be claimed from, e.g., a Pakistani application.

priority, Convention See **Convention priority.**

priority application A first application whose filing date is claimed as **priority date** in a subsequent filing, most often in a **foreign filing** situation .

priority date The date of filing of a **priority application**. In a **Convention application**, this date is regarded as the date of filing in another Convention country, provided that the filing is made within one year of the priority date and priority is claimed.

priority document First application from which priority is claimed. Certified copy must be lodged in order to claim priority in a **foreign filing** application.

priority right Simply, the right to claim priority, which is part of filing a patent application under the **Paris Convention**. As most inventors are employees, the right passes to the employer either as part of the employee's employment contract, or by means of **assignment**. If an inventor is not an employee (e.g., a consultant or a contractor) the right to file a patent application must be obtained from him or her by assignment. This must be done prior to filing a **Convention application**. If it is not done, the applicant may lack right of priority for that inventor's contribution.

priority year The year which starts on the date of first application and the end of which is the deadline for filing foreign **Convention** applications, if **Convention priority** is to be claimed.

prioritized examination US version of **expedited examination** See **Track 1 prioritized examination**

private practice One or more patent attorneys operating independently and able to work for a variety of clients. In French and German, the private profession is called the "free profession". Nothing could be further from the truth…

private use of invention Infringement? If completely non-commercial, generally not.

privilege In many (but not all) countries in which patent attorneys are not lawyers, communications between patent attorney and client are considered privileged (not subject to being produced in a court of law to the detriment of the client) to the same extent as are communications between solicitor/lawyer and client. However, this is not universally applicable, and in cases of doubt, expert opinion should be sought. A recent **CAFC** case has extended privilege to US **patent agents**.

problem and solution Concept used by the **EPO** to evaluate **inventiveness** in an application. Basically, one identifies the problem in the art, which the application under examination seeks to solve and then one sees whether the **prior art** provides the solution with the application of the ordinary skill of the art by (who else?) that **person skilled in the art**. At one point it was taken to absurd extremes as an infallible objective guide to inventiveness, but it has now calmed down to more reasonable levels. The method is (a) identify the problem to be solved, (b) identify the nearest piece of prior art (the one that contains the most features of the patent/application under investigation); (c) identify the feature(s) of the patent/application lacking in this prior art, and (d) see whether this/these features are disclosed in the art in a fashion that would make it obvious to add them to the nearest art.

process claim A claim to a process. Not so strong or desirable as a **product claim**. Infringement can be difficult to prove as process is not often worked in public.

product claim Most desirable type of claim to have. A product claim dominates every way of making or using the product, and even someone who comes up with a vastly superior method of producing the product or an entirely different and novel use infringes and must come to terms with the owner of the product patent. **Infringement** is usually easily detected by examination of product.

"product of nature" A term that has resurfaced in relation to the ***Mayo*** case in the USA, although it did also appear in the earlier ***Chakrabarty*** case. The question is whether isolated DNA sequences are products of nature. So far, all the answers have been no, as the isolated sequences are artificially-created states of affairs, which don't occur in nature, but the Supreme Court is going to weigh in on the subject.

"product hopping" The practice by drug manufacturers of seeking to delay the entrance of **generic** copies by changing the formulation of an officially-approved drug just before a generic comes on the market. The changes are usually minor and non-therapeutic (e.g., dosage, or from capsule form to tablet form). It has recently been suggested (and the US Federal Trade Commission agrees) that this is anti-competitive activity and prohibited under **anti-trust** legislation. A definitive answer from the courts is awaited.

"prophetic" example A patent example that was not actually performed, but was at least partially synthesised from someone's imagination. Sometimes referred to as an "armchair example", signifying the nature of the laboratory in which it was created. If a skilled person did the job, s/he can generally predict what will actually work, and with luck it'll really be prophetic. The usual give-away is that it's written in the present tense. Some applicants write all of their examples in the present tense, to make it impossible to tell whether the examples are prophetic or not.

prosecution The effort to persuade a Patent Office to grant a patent on an application. (See **examination**).

prosecution history estoppel See **file wrapper estoppel**.

PROSUR Proposed regional patent cooperation project in Latin America, assisted by **WIPO**. The object is to standardise procedures and share examination results among the members (currently Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Suriname and Uruguay).

protective letter A counter-claim of patent invalidity lodged with a court in advance, if the provider believes that they could be the subject of a patent infringement suit, with the potential for a seizure order. Possible in a number of European jurisdictions (e.g. Netherlands, Germany, Switzerland) and also will be available in the **UPC**.

Protocol on Centralisation Part of the **EPC** that requires EPC **Contracting States** filing **PCT** applications to use the **EPO** and **International Searching Authority** and **International Preliminary Examining Authority**.

Protocol to Article 69 Provision in the **EPC** that seeks (not altogether successfully) to ensure that claim interpretation in Europe shall not be British (literal interpretation of the words on the page) or German (claims are only a guide to the inventive concept) but somewhere in between. The revised version in **EPC2000** incorporates the concept of **Doctrine of Equivalents**.

provisional application In some countries, it is possible to file an initial and relatively cheap (provisional) application without **claims** and follow this with a substantive application within the

priority year. A feature of old British-type law which still continues in some Commonwealth countries - the UK continues to use a slightly disguised version of the system. The USA inaugurated a provisional system in 1995. A provisional exists only to claim priority and is not examined – it must be followed by a substantive application. The old British practice of drafting "provs" in vague generalities and adding specifics at foreign filing time when you know more is no longer possible in most places. The USA is contemplating effectively extending the provisional – regular filing period from 12 to 24 months by means of extending to 12 months a deadline for a subsequent non-provisional application, which currently is only 2 months, and making this extension very cheap. A US provisional may be filed in any language.

provisional protection (not to be confused with the previous entry) Although you have no property (and cannot sue for infringement) before you get your granted patent, publication of a patent application is considered to offer some protection, called "provisional protection", insofar as someone who is doing something that falls within the scope of the published claim is put on notice that s/he could infringe when a patent is finally granted. Such an infringer can be sued for infringement back to the time when s/he was notified of the existence of the patent application, not merely from the grant date. To make sure, the infringer should be notified of the existence of the patent application, preferably by sending a copy. In some Contracting States of the **EPC**, provisional protection does not apply unless the claims are translated into the language of the Contracting State concerned and provided either to the alleged infringer or to the national patent office.

PTAB See **Board of Appeal**.

public use of an invention prior to filing a patent application Not recommended unless you intend to file only in countries with a **grace period**. In absolute novelty countries, such as the European countries, this is **novelty**-destroying. Ditto non-confidential oral disclosure.

publication This word is used in three senses with respect to patents:

(a) The publication of a patent or patent application by a patent office. This is usually **early publication** of an unexamined application at 18 months from application/**priority**, publication on **acceptance** for purposes of pre-grant **opposition** (now relatively rare), or publication on **grant**. For the suffix codes used to identify various publications, see under **publication codes**.

(b) The public availability of **prior art** for use against a patent or patent application in any attempt to invalidate it. There is much case law on what exactly constitutes such a publication, but the general rule is that, if a reference is available to a single member of the public without any expressed or implied secrecy requirement, this is publication. Publication requirements vary from country to country (see **novelty**).

(c) The disclosure of your invention to the public in such a way that **novelty** is destroyed and you can no longer patent it. The same criteria as in (b) apply here. Ideally, the patent application should be on file before any kind of disclosure to anyone is made.

Some things not regarded as novelty-destroying publications in various countries are:

- exhibiting at a certified international exhibition - application to be filed within 6 months of the opening of the exhibition (universal);

- disclosure of the invention by a third party in contravention of the rights of the applicant - application to be filed within 6 months of the publication (universal);

- presentation of a paper before a **learned society** and/or published in a learned society journal - application to be filed within 6 months (old British, now rare);

- use in public for purposes of reasonable trial, where that use was unavoidably in public - application to be filed within one year of trial (old British, now rare).

publication codes Alphanumeric suffix codes which indicate the nature of a patent publication. Nice idea, but often confusing, because of different practices in different patent offices. The only common feature is that "A" represents a first publication and "B" a second publication. Thus, a country that publishes for the first time before examination and one that publishes only on grant will both designate these two very different publications as "A". In other words, in order for the codes to make sense, you have to know the practice in the particular country. However, as there are now few publish-on-grant countries, the codes as used by the EPO are a good general guide. These are:

A1 - pre-examination publication with search report

A2 - pre-examination publication without search report

A3 - publication of search report only

B1 - publication on grant

B2 - publication on grant (post-opposition).

Some EPO Contracting States designate European Patents validated there as "E" (e.g. Austria) or "T" (e.g., Germany and Spain).

QC Queen's Counsel – see **barrister**.

QPIDS See **USA**

"Raising the bar" Australian revision to IP laws, entering into force on 15 April 2013. It seeks to make Australian standards compatible with generally-recognised International ones. Examples of patent changes include:

- broadens what can be used as prior art
- removes the "old British law" approach that allowed the **provisional** to be a chatty little document, and makes it comply with the same standards of disclosure as the **complete**/foreign filing document
- replaces the old **"fairly based"** requirement for claims by the requirement that the claims must be supported by the description
- restricts what kinds of amendments are allowable
- grants a broad **experimental exception** to anyone using patented subject matter for research or for testing an invention with a view to improve on it.

RAND See **FRAND**

RCE Request for Continued Examination – see **USA**.

"reach-through" claim A form of **free beer claim** that seeks to cover substances that are not specifically described in the accompanying patent application but that could be discovered or identified by a particular method (typically a screening assay or **research tool**), which is the main subject of the application. Typical form, "a chemical compound identified by an assay according to claim 1". Generally not allowable anywhere. Some were granted in the USA when the type first

appeared, but the courts have since got wise to them, and the early granted ones are of doubtful validity, especially after the US District Court decision in *Univ. of Rochester v. Searle*, which held that they failed adequately to disclose the alleged invention. The EPO has also held them invalid (T1063/06).

"reach-through" royalty If you are licensing someone's screening method, such as an assay method for pharmaceutical material, the potential licensor may want a royalty on any active compounds discovered by the assay. This is a "reach-through" royalty. Whether you pay depends on how badly you want the assay.

"recapture of subject-matter" See **USA** *reissue.*

Receiving office In the **PCT** system, a patent office which has the responsibility of receiving **International applications** for particular countries and checking the applications for formal correctness.

reduction to practice One of the criteria in deciding who has the right to an invention under the "first to invent" principles of the USA. See **USA *first to invent*** below. It is not sufficient merely to conceive of an invention, the inventor must reduce it to practice by, e.g., making a working model or filing a patent application. Whether it still has any relevance with the end of **first-to-invent** under the ***AIA*** remains to be seen.

re-examination Procedure possible in some countries (notably the USA) for examining a granted patent again in the light of newly-discovered **prior art**. An absolute must in the USA if you have discovered new art and you may want to litigate on the patent.

refiling Possible and often done during **prosecution** in the **USA** when things get difficult. The application is refiled either as a **request for continued examination (RCE)** (formerly known as a "continuation prosecution application" (CPA)) or as a **continuation-in-part (C-I-P) application**. Priority is maintained, except for **new matter** in a C-I-P. See **USA** below.

reformatio in peius (being placed in a worse position as the result of an appeal) is NOT allowed in the **EPO Boards of Appeal** in the case of a single appellant**.** Thus, if the single party has been granted a reduced scope in an opposition and appeals, seeking a broader scope, that reduced scope cannot be further reduced. Enshrined in **Enlarged Board of Appeal** Decision G4/93.

regional patent A patent covering a region rather than a country. Present systems are the **European patent**, the ***Eurasian patent***, the **ARIPO** patent, the ***OAPI*** patent and the ***GCC*** patent. Those in italics are unitary systems – it is not possible to omit member countries.

Regional Phase In the **PCT** procedure, the period in which Regional patent offices (**EPO**, **OAPI**, **ARIPO**, **Eurasian Patent Office**) designated in the **International application** take over the application and proceed with it as if it were a normal application filed directly with them. See **National Phase**.

registration The validation of a granted patent in a dependent state or territory. Major example is the UK, China and **Hong Kong** (patent protection by registration of a granted Chinese patent, a granted British patent or a granted European patent which designates the UK - also applicable to PCT applications designating China, UK or EP/UK). It remains possible to register British patents in many minor overseas dependencies. So, if you really must have a patent in Anguilla, Bermuda, British Virgin Islands, Brunei Darussalam, Cayman Islands, Falkland Islands/Islas Malvinas, Fiji, Gibraltar, Grenada, Guernsey, Guyana, Jersey, Kiribati, Montserrat, Nauru, Samoa, Seychelles, Sierra Leone, Solomon Islands, St. Helena (includes Ascension and Tristan da Cunha), St. Lucia, Turks and Caicos

Islands, Tuvalu or Vanuatu, this might be for you. (UK patents automatically apply to British Indian Ocean Territory and Swaziland).

reissue See **USA**.

rejoinder Feature of US **restriction** practice. If a claim to non-elected subject-matter contains all the features of an allowed elected claim, it may be rejoined to the elected claim and be granted with it.

renewal fee Fee, usually annual (therefore sometimes known as "annuities"), required to keep a patent in force. The **Paris Convention** provides a 6-month **grace period** for their late payment (usually with extra fees).

repairing of patented article Infringement? Generally not, but it depends as to how far the "repair" has gone. If it crosses the (vague) borderline into "reconstruction" it may constitute infringement. It depends very much on the circumstances of the case.

request (PCT) The official name for an **International Application** under the **PCT**.

Request for Continued Examination (RCE) See **USA**.

Research Disclosure A commercial defensive publication service whose function is solely to make technology voluntarily state of the art. Publication of submitted technology is very quick and ensures that nobody will be able to patent it. RD is searched by all major patent offices.

research exemption See **"safe harbour"**

research tool A name usually used to describe means of identifying substances useful for, e.g., pharmaceutical use. Some patentees of such tools have tried to cover also the substances identified by such tools in "**reach-through claims"**. These have been rejected on the basis that the substance involved has not been adequately defined. Quite right too.

restitutio in integrum Fancy name for the next entry.

restitution of patents Another name for restoration of patents/applications that have inadvertently been allowed to lapse. See next entry.

restoration of patents Patents or applications that have been inadvertently allowed to lapse can be restored. However, the hurdles to be jumped are very high. The applicant for restoration must show that (a) lapse was not intended (not a decision to allow to lapse, followed by a change of mind), and (b) lapse came about as the result of an inadvertent error in an otherwise well-functioning system of patent deadline oversight. Restoration can usually be obtained only for a certain time after lapse.

Restoring America's Leadership in Innovation Act See **US patent law revision proposals**

restriction requirement see **USA *restriction requirement***

revalidation, patent of The revalidation (or confirmation) of a patent already granted in another country. Still exists in a few places, e.g., some Latin American states, **GCC**, Saudi Arabia.

reverse payment Sometimes called "pay-for-delay", the practice of the US pharmaceutical industry to pay **generic** manufacturers to keep their products off the market for a period of time. In *FTC v. Actavis*, the US Supreme Court ruled that, in some circumstances, such payments may violate US

federal antitrust laws, and that the **rule of reason** should apply. Now it's up to lower courts to figure out exactly what that means.

revocation The cancellation of a patent after legal action seeking its invalidation. Generally this is as a result of court action, but in some post-grant **opposition** countries (e.g, the UK), an opposition before the Patent Office is called revocation. Revocation is possible (but rare) for non-**working**.

"rocket docket" US court proceedings that proceed to completion very quickly, usually by strict adherence to filing deadlines. In patent matters, the US District Court for the Eastern District of Texas established a reputation for quickly bringing matters to trial and having a plaintiff-friendly percentage much higher than the national average. One of the major cases held there was *Microsoft v. i4i*, over the use of XML documents in Microsoft Office.

rule of reason A consideration in US **antitrust** cases. It holds that only combinations and contracts unreasonably restraining trade are subject to provisions under antitrust law. Possession of monopoly power is not in itself illegal. The doctrine was developed by the US Supreme Court in applying the Sherman Antitrust Act in the famous case of *Standard Oil v. USA*, which broke up the Rockefeller Standard Oil empire.

"safe harbor" (aka **"**research exemption**" and "Hatch-Waxman** exemption**")** Name given to the provisions of US patent law (35 USC 271(e)(1)) that permit **experimental use** of patented pharmaceuticals for the purposes of registration of **generics** during the life of the patent, without this being considered **infringement** of the patent. A recent Supreme Court decision extended the provision to any substance subject to FDA approval, not just pharmaceuticals. See **Bolar exception**

The term is also used in connection with 35 USC 121, which does not allow the use of a patent resulting from a restriction requirement (see under **USA *restriction requirement***) against another application in the same family.

saisie-contrefaçon French method of obtaining proof of infringement. It permits the holder of an intellectual property right, upon receiving the authorisation of a judge, to call upon a bailiff (in certain cases, a police commissioner or a judge) to record an infringement. The order authorises the requesting party to dispatch the bailiff of its choice, possibly accompanied by an expert of its choice or by a member of the police force, to any place where proof of the infringement might be found, to make either a detailed description of alleged infringements or a physical seizure of them. The bailiff records the operations performed. Frequently used.

Sarbanes-Oxley Act In full, the *Public Company Accounting Reform and Investor Protection Act*. US legislation enacted in the wake of a series of US corporate and accounting scandals, most notoriously the Enron affair. It sets new standards in accounting practices for public companies. Among other requirements, the Act requires a public company to provide enhanced disclosure in its filings with the U.S. Securities and Exchange Commission of matters that materially affect, or are likely to have a material impact on, its business and financial performance. This includes IP assets, such as patents, whose values should realistically be assessed. As **business method** patents are allowed in the USA, there has naturally been a series of Sarbanes-Oxley compliance patent applications, e.g.,
US 7505933.

SAWS Acronym for Special Application Warning System. A former secret **USPTO** system, now abandoned, that marked out potentially disruptive inventions in specific fields for special attention. These included anything that would violate the known laws of physics (perpetual motion machines, cold fusion, anti-gravity machines, free energy, faster-than-light devices), room temperature superconductivity and "anything that would generate unfavourable publicity for the USPTO". The

progress of such applications through the USPTO could be stalled indefinitely. The program is apparently to be discontinued.

scientific discoveries and principles are unpatentable, but practical embodiments utilising them are. You can't patent the photoelectric effect, but you can certainly patent an automatic door opener utilising the principle.

search report Report produced by a patent office, giving details of the **prior art** found by the office and on which the office will rely during **prosecution**. Many offices now demand to see search reports of other offices.

second medical use claim Often known as a "Swiss"-style claim. A claim allowing the claiming of a medical use for a compound already known for a different medical use. It has the form "use of compound X for the preparation of an agent for the treatment of disease Y". (See **first medical use claim**). Used principally in Europe, but also recognised in some other countries. **EPC2000** changes remove most of the need for such claims.

second non-medical use claim European claim claiming the use of a material for a new use, even if that use were inherent in a previous use. They were established by the **Enlarged Board of Appeal** decision G2/88 ***Mobil***, where the use of a chemical as a corrosion inhibitor in car radiator water was approved, even though the same chemical was known in radiator water in the same proportion as a lubricant. What these claims mean in practice is anyone's guess.

secondary indications of inventiveness In apparently borderline cases of **inventiveness** in the **EPO**, non-technical factors may contribute to the inventiveness argument. These include commercial success, fulfilment of long-felt need, the fact that all the prior art is positively ancient, strong circumstantial evidence pointing away from obviousness, and prejudice in the art against the particular solution. However, in a recent US **CAFC** case, *Transocean v. Maersk*, secondary indications actually overruled a prima facie finding of obviousness. The court did stress that such a finding will be rare, i.e., that not any old secondary indication would do.

secrecy In most countries, it is essential that secrecy or confidentiality be maintained prior to the application for a patent, as prior **publication** may invalidate any patent granted (see **oral disclosure**, **public use**, **grace period**). If working, e.g. commercial trials, has to take place before third parties, a secrecy agreement should be obtained. The USA is (naturally) an exception (see under **USA, *grace period*** below).

secrecy order see **national security.**

secret use This can be a viable alternative to patenting if your invention cannot be easily analysed or if it would be difficult to detect infringement of the invention. If nobody else can find out what you've done, you have, in effect, a perpetual monopoly. It has the disadvantage that, if someone else comes up with the same invention, either independently or by reverse engineering yours, there's nothing you can do about it.

And if that someone else patents the invention? In general, you cannot be prevented from doing what you have been doing prior to the priority date of the patent, even if you have only been making serious preparations for commercialisation, without actual commercialisation. However, you may be limited to exactly what you have been doing. In addition, in (where else?) the USA, a patent proprietor will be given preference over a prior secret user of the same invention. See further under **USA *secret use*** below.

seeds Genetically-engineered seeds are patentable, but the question is, can a farmer save and freely use the seeds derived from the resulting plants, having bought the original seeds? Answer, no. This has mainly concerned seed giant Monsanto and its "Roundup-ready" seeds. A US farmer is taking Monsanto to the Supreme Court largely on an **exhaustion** argument.

seizure of infringing goods In some countries, it is possible, on presentation of suitable evidence, to get a court order to seize infringing goods. The seizure may be enacted by the police or, in the case of imported infringing goods, Customs officers.

selection patent A patent whose claimed scope falls within the claims of an earlier patent, but which discloses that certain embodiments not specifically described in the earlier patent have unexpectedly good properties also not described in the earlier patent. It is dominated by the earlier patent and cannot be worked without the permission of the earlier patentee, but the earlier patent is not considered to cover the invention in the later patent, and the earlier patentee cannot work the selection. (See p.96). See also **cross-licensing**.

"self-collision" See **poisonous divisional**

senior party See USA – *interference proceedings* and ***–derivation proceedings***

SEP See **standard-essential patent**.

"71(3)" In full, Communication pursuant to Article 71(3) EPC. The notification that the EPO is willing to grant a patent on a particular description and claims, known as the ***Druckexemplar*** (printing version). Within four months, the applicant must approve the text, pay the grant and printing fees and file translations of the claims in the two other official languages .

SHIELD Act Proposed (and controversial) US legislation. SHIELD is an acronym of **S**aving **H**i Tech **I**nnovators from **E**gregious **L**egal **D**isputes Act. This originally related specifically to computer software and hardware and seeks to prevent **NPE**s (aka patent **trolls**) by awarding all costs against a party bringing a lawsuit without a reasonable chance of succeeding. The initial law failed to pass, but a new version has been introduced. This one is not restricted to a specific industry. Moreover it requires the NPE to post a bond early in the case to cover the recovery of the "full costs to any prevailing party asserting invalidity or non-infringement, including reasonable attorney's fees". This is intended to prevent frivolous lawsuits, filed with the intent only to make the recipient pay to make them go away.

Some commentators have commented very unfavourably on the proposed legislation, stating that it is based on flawed assumptions (i.e., that **patent trolls** cost US technology companies an inordinate amount of money)

showing A demonstration of unexpected results (and therefore inventiveness) to a patent office. Often required by the **USPTO**, to whom it must be presented as a formal declaration.

SIS see **supplementary international search**

"skinny labelling" There can be problems for original pharmaceutical manufacturers where a pharmaceutical has several indications (i.e., is usable for treatment of different aliments), and that, in addition to the pharmaceutical itself, these are covered by different method of use patents expiring at different times. A **generic** manufacturer can then market the drug with a "skinny label", i.e., a label from which all-patent protected uses have been deleted, ostensibly for the use that is no longer patented, thus satisfying the legal requirements. However, the cheaper generic is often then substituted

for the original drug for all indications, thus costing the original manufacturer a fortune. A particular problem for original drug manufacturers in the USA.

small entity status In some countries (e.g., Canada, USA), individuals, non-profit organisations and for-profit companies having fewer than a specified low number of employees (500 in the USA) are classified as small entities and qualify for reductions in some official fees (50% in the case of some fees). However, as small entities are the people least likely to have in-house patent counsel, they will need private attorneys who generally charge everyone the same, so the small entity status may not help much. The ***AIA*** has introduced a further **micro-entity** category, eligible for a 75% reduction.

The EPO now allows reduced filing and examination fees (30%) for applicants that comply with two requirements:

- they are one of (i) a small- and medium-sized enterprise, (ii) a natural person, (iii) a non-profit organisation, (iv) a university and (v) a public research organisation; **and**
- they have their principal place of business in an EPC Contracting state that has an official language that is not English, French of German.

solicitor In British-type legal systems, a lawyer who engages in general legal work and who prepares cases for court, but provides them to a **barrister** for presentation in court.

SPC – see **Supplementary Protection Certificate**.

specification See **description**.

specification, conformity with claims on grant See **description, conformity with claims on grant**

"springboarding" Experimental and other preparations directly relevant to the commercialisation of the patent of a third party while that patent is still in force. Generally forbidden, but allowable in some circumstances, e.g., in some countries, work done by generic pharmaceutical manufacturers during the period of extension of a patent (and in the USA, even during the normal term).

standard-essential patent (SEP). A patent that claims an invention that must be used to comply with a standard. Standards-setting organisations generally require their members to grant licences to other members. In a recent case *Huawei v. ZTE*, the **CJEU** held that the bringing of an injunction relating to such a patent when the alleged infringer has expressed willingness to accept **FRAND** terms may constitute an abuse of a dominant position. See **FRAND**.

statement of purpose, and its role in defining an invention See **"for".**

statute law Law enacted by a legislature. This generally covers patent law, but issues at **equity** can arise in **common law** countries.

Statute of Monopolies 1624 English law provision that ended the practice of patents as Royal grants of privilege. It was triggered by a proposed monopoly on playing cards in England for a Royal favourite. Its enduring legacy is Section 6, which defines the subject of letters patent as "any manner of new manufacture". This definition of **invention**, backed by a substantial body of case law, particularly the outstanding ***NRDC*** decision, remains the best definition of "invention" ever devised. It remains the definition of invention in some British Commonwealth countries, notably Australia.

statutory bar US legal term for a specific act that will bar an inventor from obtaining a patent on an invention. Acts include the **publication** of the invention or its use or placing on sale more than one year before the US filing (the US **grace period** is the reason for the year).

statutory invention registration US patent publication in which the applicant waives the right to a patent (i.e., there are no enforceable rights). Such publications carry an H number. The general idea was to dedicate inventions to the public (usually those in which the applicant realised that s/he wasn't going to get a patent and was making sure that neither would anyone else). Still possible, but now largely superseded by the US **early publication** system.

stem cells Cells that can become any other type of cell and which offer the possibility of cures for many ailments. To date, a major source has been **human embryos**, which otherwise would be discarded. This raises considerable moral dilemmas for many. Recent cases in the **CJEU** and ***Bundesgerichtof*** in the case of *Brüstle v. Greenpeace* held that stem cells could not be patented, if the process involved killing the embryo. A recent EPO Boards of Appeal decision held that human embryonic stem cell inventions are not patentable under Article 53(a) of the EPC. However, the CJEU, in Decision C-364/13, ruled that unfertilized human eggs that have been stimulated to divide in the absence of sperm (so-called parthenotes), notwithstanding that they lack any paternal DNA, are not "human embryos" within the meaning of the EC Biotech Directive. As a result, they should not be excluded from patentability. This potentially opens the door for more stem cell patenting. We certainly haven't heard the last of this issue.

STRONG Patents Act See **US patent law revision proposals**

STRONGER Patents Act US patent law revision proposals

subject matter, patentable See **patentable subject matter** above.

"submarine patent" A patent granted on an application which was kept secret by abandoning and refiling, and allowed to proceed to grant and publication only when its existence could cause major embarrassment and/or expense to competitors. It only works in legal systems in which (a) it is possible to abandon and refile without losing the original priority date, and (b) publication occurs only on grant. This restricts it to the USA, and it was once a major feature of US practice. The US adoption of **early publication** considerably reduced its effectiveness – publication only on grant is still possible in the USA, but only for applications filed solely in the USA, and it has to be requested, otherwise the USPTO will publish.

In the case of US-only inventions, it can be a defensive alternative to **secret use** – you can keep your US patent application pending while continuing to work the invention, and if anyone tries to patent the same thing, you can then let it go to grant.

substantial procedural violation What an EPO body (Receiving Section, Search, Examining or Opposition Division) may be guilty of when it makes an error related to formal aspects of a European application, necessitating an **appeal** to correct it. If the Board of Appeal finds that a substantial procedural violation has been committed, the appeal fee is reimbursed. This applies even if there are non-formal aspects to the appeal.

SUCCESS Act The Study of Underrepresented Classes Chasing Engineering and Science Success Act of 2018, one of the more contrived acronyms, is a US Act seeking to increase the number of women, minorities, and veterans who participate in entrepreneurial activities and apply for patents. The USPTO is required to provide legislative proposals to enhance the numbers of such folk applying for patents. We await further developments.

sufficiency A patent application is required to describe an invention to the extent that a **person skilled in the art** can carry it out without having to reinvent it. It does not mean that this person need not have to do some experiments to establish the best way of doing something, provided these can be considered to be reasonably within the skill of the art. US sufficiency requirements are particularly strict.

suffix letters on patents, meaning – see **publication codes** above.

summary judgement Judgement (usually in a **common law** country) given by a judge for one party against another without resorting to a full trial. It may be on the complete case or on discrete issues in the case. Rare in patent cases, but can happen, if a judge thinks s/he has sufficient material (as in *Virgin Atlantic v. Delta*)

supplementary international search (SIS) Optional additional **PCT** search performed during the **International Phase**, in addition to the usual **International Search** performed by the applicant's usual **International Searching Authority**. The idea is to improve the chances of finding relevant prior art. At the moment, offered only by the Russian and Swedish Patent Offices and the Nordic Patent Institute, but other offices are expected to come on board.

supplemental examination See **USA**

Supplementary Protection Certificate (SPC) A common method of **extension** of patent **term** for pharmaceuticals. A typical term (UK) is 5 years, provided that this does not exceed 15 years from **marketing approval**. An SPC is normally granted only for the particular drug which has received regulatory approval, not for the entire scope of the patent claim.

However, what was supposed to be a relatively straightforward administrative procedure is turning into a major nightmare, with a number of referrals to the **CJEU** trying to decide exactly what is meant, and said CJEU not making any sense. There is also the fact that the forthcoming **EU Patent**, does not mention SPCs at all, which would be a big turn off for the industries involved. This is apparently now being addressed seriously.

Supreme Court The highest court of a country and the ultimate interpreter of national patent law. Its judgements are binding on all lower courts. In the US in particular, the ability of Supreme Courts to pass sensible judgements on matters of patent law has been called into question – at least one of the US Supreme Court judges is openly contemptuous of patent law, an extraordinary position for a country where patents are actually written into the Constitution:

The Congress shall have the power…to promote the progress of science and the useful arts, by securing for limited times for authors and inventors the exclusive right to their inventions and discoveries
(Article 1, Section 8, Clause 8)

Swakopmund Protocol Regional Protocol under **ARIPO** on the protection of traditional knowledge and expressions of folklore.

"swearing behind"/"swearing back" See **USA.**

"Swiss"-style claim See **Second medical use claim**

Switzerland Designation of Switzerland in a **European patent** application automatically also designates Liechtenstein.

Taiwan The major non-member of the **Paris Convention**. Initially, this suited the Taiwanese, because it allowed them to make fake Rolex® watches and Louis Vuitton® handbags to their hearts' content. However, Taiwan is now a respectable major economy in its own right, but it is careful not to do anything which could look like a declaration of independence to Another Large Chinese-Speaking Country not a million miles away. Taiwan has bilateral treaties with some countries (e.g., USA,

Australia, Germany, UK, Switzerland), wherein there is mutual recognition of each other's filings for **priority** purposes, and Taiwan now has a **PPH** arrangement with the **USPTO**. As a result, the consequences of Taiwan's becoming a **WTO** member (in January, 2002) are currently not noticeable, but that may change with time.

Although there have been a number of agreements between Taiwan and That Other Large Chinese-speaking country on IPR protection, it is not possible (yet?) to claim a Taiwanese priority date in a PCT application if CNIPO is the **Receiving Office**. If the Receiving Office is not the CNIPO, Taiwanese priority may be claimed.

technical effect An invention under the EPC must perform some technical function. Although not actually defined anywhere in the **EPC** (it's not even in the Convention but in the Rules – "The description shall…disclose the invention…in such terms that the technical problem…and its solution can be understood…(R.42(1)(c)EPC)), it has become a major factor in defining what is and isn't an invention. Lack of a technical effect is the reason why so many computer-implemented inventions are ineligible for patent protection in the **EPO**.

technical preparations for publication Generally the preparation of an official publication in which patent applications will be subject to **early publication**. This chiefly concerns the PCT Gazette and the European Patent Bulletin. If you decide to withdraw an application so that publication is avoided, you have to do this before the technical preparations are complete. In the case of the PCT, this must be done at least 15 days before the publication date (always a Thursday). However, in the case of a European application, the time is 5 weeks before publication. After these dates, the respective organisations cannot guarantee withdrawal of publication.

technological inventions See **covered business method patents.**

temporary import of patented invention The patent of an invention in a particular country is not infringed by the temporary entry into the country of the invention on a vehicle, ship or aircraft from a second country in which the use is legitimate (e.g., there is no patent or the patent is owned by someone else who has permitted the use).

"ten-day rule" The EPC's rule regarding when notification was received (R126(2)) – it is considered received 10 days from the date on the notification. This fiction saves the EPO the job of establishing the actual date of receipt. This has been a life-saver for many attorneys running late, and a perennial favourite in the **EQE**. However, it was devised at a time when most communications were by letter, and the world has substantially changed to electronic communications. As a result, as of 1 November 2023, the ten-day rule will cease to exist, and the revised R126(2) and 127(2) consider notification to have occurred on the date of the communication. There are safeguards for procedural irregularities.

term The length of time for which a patent lasts, usually dated from application date. Most places now have a term of 20 years. A few countries still have shorter terms. **Utility models** also have shorter terms. See also under **USA**.

terminal disclaimer Feature of US patent law invoked when a prior patent of the applicant constitutes **prior art** against the later application and the **USPTO** considers this to be close enough in substance to constitute an attempt at **double patenting**. In order to get a patent for the application, the applicant may have to disclaim that portion of the **term** of the patent granted on the application which extends beyond the term of the prior patent, i.e., both patents expire on the same day.

theft of patents If someone expropriates your idea and files a patent application covering it, you can have the application or patent assigned to you. This can be done even if the thief has allowed the

patent on the expropriated idea to lapse. Moreover, publication of the stolen application will be considered never to have occurred, so it is not novelty-destroying.

third party observations Many countries allow third parties to supply **prior art** relevant to the application to the patent office during **examination** of a competitor's patent application. This is generally done anonymously. The supplier does not became a party to the proceedings, which remain strictly between patent office and applicant, and has no say over how (or if) the patent office uses the supplied prior art. Called pre-issuance submissions in the USA.

THOSITA See **person skilled in the art**

threats To be avoided when writing to alleged infringers. Use of unjustified threats can allow the alleged infringer to sue you.

"Three-Track Program" See **Track 1 prioritized examination**

tort A civil wrong in **common law**. A person committing a tortious act is a tortfeasor. Causing loss or harm in a patent matter is a tort, but it is generally governed by **statute law**. In the relatively few cases where this doesn't apply, the tort is actionable at common law, like any other.

Track 1 prioritized examination New **USPTO** that makes possible go (application) to whoa (allowance or rejection) within 12 months. Fee is $US4800 ($2400 for small entities). It is Track 1 of the proposed **Three-Track Program** (Track 2 = normal examination, Track 3 = delayed examination)

trade mark Type of **intellectual property** covering words and symbols that are the exclusive property of the trade mark proprietor. They are renewable every 10 years and last forever, if properly cared for.

trade secret The keeping of something secret, rather than patenting (and therefore ultimately publishing) it, especially in the USA, where it is currently governed under State law. You don't apply to have something declared a trade secret, but you must take all necessary precautions to see that it is maintained secret (telling employees, stamping documents, etc.). For small companies, trade secrets are often more important than patents, in that they may confer a near-perpetual monopoly (think Coca-Cola). Special care should be taken (so far as possible) to ensure that employees departing to competitors do not pass on such trade secrets.

The EU Parliament has voted to enact a Trade Secrets Directive to harmonize the current patchwork of national laws, making available a uniform system of redress for misappropriation of trade secrets across the EU. The US has passed a Federal Trade Secrets law, the *Defend Trade Secrets Act*.

traditional knowledge, genetic resources and traditional cultural expressions/folklore (TK) Knowledge that has arisen within and that is a part of particular communities, especially of indigenous peoples. Prior to the recognition of the existence of this knowledge, it was all too easy for more "advanced" societies and organisations to misappropriate such knowledge, for example, to isolate the working principle of a traditional medicine known for generations and patent it. The concept of TK as **intellectual property** is in its infancy and there is as yet no universal legal framework for registration and/or protection (China grants patents for traditional medicines). However, **WIPO** is heading efforts to protect TK, to see that its owners are rewarded and to place it in the hands of patent offices as **prior art** (in one case, ancient Sanskrit texts were used in the invalidation of a US patent claiming the use of turmeric for wound healing).

Recently, it has been suggested that the importance of TK has been greatly exaggerated, and perhaps even exploited – see, for example:

http://ipkitten.blogspot.be/2015/07/indias-claims-to-traditional-knowledge.html

transition period When a new law is brought in, there will generally be a period where the old law still applies wholly or partially to patents existing at the change. Special provisions are often made to regulate certain matters in this period (se next entry).

transition provisions Provisions in a new law that provide special exceptions for cases pending under the old law, which might otherwise be disadvantaged. In the case of patent legislation, they typically provide that the conditions of the old law will continue to apply to pending patent applications, at least to some extent. For example, the USA once had a patent term of 17 years from grant. When a new law giving 20 years from application came in, applications pending under the old law were given a term of the longer of 17 years from grant and 20 years from application.

Trans-Pacific Partnership (TPP) Proposed **c**ontroversial trade agreement between 12 Pacific Rim countries, seeking to lower trade barriers and establish common frameworks in certain laws, among them intellectual property. This was published by the New Zealand Government:

http://www.mfat.govt.nz/Treaties-and-International-Law/01-Treaties-for-which-NZ-is-Depositary/0-Trans-Pacific-Partnership-Text.php

It is seen by some as a US attempt to counter the growing power and influence of China in the region. Much of the negotiation was conducted in secret. The IP provisions have been especially controversial, with the US appearing to be potentially the big beneficiary. Poorer countries, as always, appear to get the short end of the stick. However, the newly-inaugurated Trump Administration's decision not to participate killed off the original proposal. The remaining countries are seeking to provide a reworked version, called the CPTPP (Comprehensive and Progressive Agreement for Trans-Pacific Partnership).

trans-Tasman patent It has often been suggested that near (well, sort-of) neighbours and fellow Anglophone and friendly (except during Bledisloe Cup and Rugby World Cup time) Australia and New Zealand should have a common patent. However, the law has taken different courses in both countries. Both started with versions of the UK 1949 Act, but Australia substantially modified its Act in 1990 and has recently done so again in the recent **Raising the Bar** Act. On the other hand, the NZ law remained firmly UK 1949, but finally changed to a UK 1977-style Act in September 2014 (having started to think about it in the 1980s!). Even with this change, the two laws are sufficiently different to make a common approach problematic, and specific measures will need to be enacted to make it possible.

This may now be about to happen. Australia's *Intellectual Property Laws Amendment Act 2015* introduced a single trans-Tasman patent application/examination system and patent attorney regime. Equivalent legislation is needed on the NZ side to make it come about. This is currently under study.

travaux préparatoires Literally, "preparatory works". The preparatory papers setting out positions prior to a diplomatic conference leading to the creation or the modification of an International Convention. Continental jurisprudence often goes back to them, to find out what was originally intended, in contrast to British/US-type law, which interprets the words of an article or rule according to their ordinary meanings as they sit on the page.

Treaty of Rome Treaty that is the founding document of the **European Union**. Its basic principle of free movement of goods and services across national borders raises an inherent conflict with patent rights, which seek to impose national monopolies. As a result, where patent rights conflict with the

Treaty, especially where they are seen to distort free trade, they cannot be exercised. In the particular case of patent licence agreements, which are theoretically in breach of Art.81, those that meet certain conditions and that lack certain specific objectionable clauses are permitted under a so-called "block exemption", that is, they need not be notified to the EU authorities for permission.

troll see **patent troll**

Unified Patent Court (UPC) Proposed central court that hears cases arising under the European **Unitary patent**. Ultimately, after a transition period, it will be responsible for all European patents, whether unitary or not (see **opting out**). The main court (Central Division) is located in Paris with a regional office in Munich (mechanical engineering cases (IPC Section F)). The proposed regional office in London (chemistry cases, including pharmaceuticals, and human necessities (**IPC** Sections A and C)) was scrapped after **Brexit** and its place was taken by Milan.

The proposed structure is complex, with the Central Division being augmented by Local Divisions in various countries. The European **unitary patent** (see next entry) will simultaneously come into existence.

The UPC opened its doors for business on 1 June 2023.

See Appendix N above for more details.

unitary patent Single patent covering a group of independent countries, where it is not possible to drop unwanted countries as per the **European patent**. Examples include the **Eurasian** patent and **OAPI** patent. The **EPC** provides that "Any group of Contracting States, which has provided by a special agreement that a European patent granted for those States has a unitary character throughout their territories, may provide that a European patent may only be granted jointly in respect of all those States" (Art.142(1) EPC). The **European Unitary patent** is such a patent.

See also **Unified Patent Court**.

unity of invention Patents should be for one invention only. This means different things in different places. In Europe, claims to, say, a compound, a process for making the compound, use of the compound and a product containing the compound are all considered part of a single inventive concept and therefore can be covered in a single patent application. On the other hand, the USPTO takes a much stricter view of what constitutes one invention, and often raises a **lack of unity objection**. Generally this means that **divisional applications** are going to be needed to cover the invention completely.

unpatentable subject matter See **patentable subject matter** above.

UPC see **Unified Patent Court**

USA A country whose patent laws differ in major respects from those of the rest of the planet – in many cases, as J.B.S. Haldane said of the universe, they are not only stranger than you imagine but stranger than you can imagine. However, the miracle that most of us thought we'd never live to see has happened; a major overhaul of the US system, enshrined in the so-called *America invents* Act (***AIA***), came into force completely on 16 March 2013. The more significant changes have been marked in blue below (see also Appendix M above). Some of the provisions of the old law will continue to apply to currently pending applications. However, note the entry on the **US Inventor Act**, a proposed legislation that would reverse many of these changes. And the US patent system remains stranger than you can imagine – it's easy to see why a US patent attorney described it as the "US Patent Attorney Full Employment Act."

Some of the more important US differences are

- ***Administrative Trial Provisions*** These provisions of the ***AIA*** went into force on 16 September 2012. They include *inter-partes review*, *post-grant review* and a transitional program for covered **business method** patents.
- ***CIP*** - see ***continuation-in-part application*** below.
- ***continuation application*** - sometimes known as a refile. The same application is filed again, it receives a new application number and off you go again. Priority is maintained.
- ***continuing prosecution application*** – see ***Request for Continued Examination (RCE)*** below
- ***continuation-in-part application***, usually "CIP" - same as a ***continuation application***, except that **new matter** has been added, usually to counter **prior art** cited in the **prosecution** of the application. The filing/**priority** date of the new matter is the date of filing of the CIP; the original matter retains the filing/priority date of the original application.
- ***derivation proceedings*** Proceedings that will replace **interference** (see below) proceedings. This will allow the USPTO to ensure that the inventor of a first-filed application did not derive the invention from the inventor of a later-filed application. The inventor of the later-filed application will have to instigate the proceedings with the USPTO. The petition must be filed within one year from the first publication date of a claim that is the same or substantially the same as a claim in the first-filed application. In the case of a granted patent, the owner of a later-filed patent may bring a civil action against the owner of an earlier-filed patent with one year of the issuance of the first-filed patent. The "senior party" and "junior party" considerations from interference will also apply here.
  It has been argued that these proceedings, coupled with changes to the US novelty provisions, allow the patenting of minor variations of ideas obtained from the original inventor.
- ***ex parte re-examination*** It is possible to have a patent re-examined on a narrow number of grounds. In the (cheaper) *ex parte* system, the applicant for examination takes no further part in proceedings, and can remain anonymous (see *inter partes re-examination* below)
- ***first to invent*** - the cause of more heartache/friction between the USA and the rest of the patenting world than any other issue, but about to be replaced by a first inventor-to-file system. (Some folk are questioning the Constitutionality of the measure, as the Constitution speaks of "inventors", not "applicants", and may try to get an injunction to stop it). In a dispute as to who has the right to an invention, the criterion used by the world at large is "first to file", i.e., the person with the earlier filing/priority date has the right to a patent, but the USA has "first to invent". The basic criteria in deciding who is the first to invent are
  - conception (who thought of it first)
  - reduction to practice (who presented it first as a practical proposition)
  - due diligence (who made the greatest efforts to place it at the disposal of the public).

  One of the problems arising from the first to invent philosophy is that **secret use** of a US-originating invention may be detrimental – an inventor who invents second and patents the invention may be held to be the true and first inventor under US law and be able to stop a prior inventor who worked it secretly. See also ***interference proceedings***, ***swearing back*** below.
- ***flagging newly-claimed matter*** This applies only to applications with effective dates earlier than, and US/PCT filing dates later than, 16 March 2013. If a new claim is added to the US/PCT application, this must be notified, or "flagged" to the USPTO. The penalty for not doing this is loss of priority. Moreover, such a claim has the effect of bring the whole application under the AIA, not just the new part. This can be disadvantageous (wider prior art possibilities), but also can be used as a stratagem.
- ***grace period*** - not unique to the USA, but arises in connection with the USA more often than anywhere else. An invention can be published (e.g., by use or in print) in the USA prior to filing a patent application without destroying **novelty**, provided that the application is filed within one year of that publication. Frequent trap for US inventors, who often assume that the rest of the world works the same way (see under **novelty**). Failure to file a patent application within the grace period year after first use leads to forfeiture of the right to file a patent

application. The AIA grace period is less generous than the old one, being restricted to the inventor's own publications or publications derived from him or her. A third party, who has invented the invention independently, can publish and this publication will constitute prior art against the inventor's subsequent application. There is now a *Grace Period Restoration Act* (2015), seeking to restore something like the old one. How it will fare remains to be seen.

- ***Hilmer Doctrine*** US practice principle from two cases *in re Hilmer* and now ceased under the ***AIA***. Basically, it provided that a foreign priority document does not give a resulting US patent application an effective date as a prior art reference; this can only be established by filing in the USA. Moreover, a foreign priority could only be used as a "shield" to defend against attack by third parties, but not a "sword" to attack third parties. As a result, some foreign applicants file US provisionals at the same time as, or as close as possible to, their priority applications in the home country. The end of Hilmer will make many foreign applications prior art in the USA up to one year earlier than is currently the case.
- ***inter partes review*** (IPR) Replaces the former *inter partes* re-examination provisions, and is applicable to any patent issued on or after 16 September 2012. A request for review can be brought by a third party. The third party is a party to the proceedings, but the objection can only be based on existing prior art. It is not cheap ($US27,200), but is a whole lot cheaper than US court proceedings. Only prior art that raises a substantial new question of patentability will be considered.

  In a January 2015 development, a company has launched a Constitutional challenge to *inter partes* review as a violation of the US Constitution's Seventh Amendment (right to a jury trial). This failed. However, it has been claimed that IPR is costing the US economy dearly and that the procedure should be reined in by Congress before it does any more damage. The argument continues.

  IPRs have recently gained notoriety because of their use by hedge funds (notably those of Kyle Bass) to attack pharmaceutical patents and drive down the share prices of the pharmaceutical companies they're shorting. So far, attempts to hold this an abuse of process have failed (according to the Patent Trial Appeal Board of the USPTO, "an economic motive for challenging a patent claim does not itself raise abuse of process issues." More to come on this…
- ***interference proceedings*** - a procedure which comes into play when the USPTO discovers or is informed of the existence of several patent applications with overlapping subject matter - it determines who has the right to which invention or which part of which invention. In such proceedings, applicants can prove their right to an invention by ***swearing back*** to the date of conception of an invention on the ***first to invent*** principle. The first thing for the Patent Office was to decide on the "senior party" (i.e., the party with the earliest effective date of invention), the other party/ies being the junior party/ies. The senior party was generally in pole position to win, unless the junior party/ies could produce evidence to unseat it. Could be staggeringly complex and expensive, i.e., lucrative for those US attorneys who specialise in it, which is the real reason why many US attorneys sought to retain "first to invent". This has disappeared with first-to-invent, and has been replaced by derivation proceedings (see above).
- ***post-grant review*** (PGR) This came into force on 16 September 2012, but is available only for patents with application dates on or after 16 March 2013, when the ***AIA*** came fully into force. This is sort-of the USPTO equivalent to opposition procedures. Previously, re-examination approximated to an opposition procedure, otherwise, an expensive court case was the only possibility. Post-grant review has the same deadline as the EPO opposition (9 months from grant). However, it will be much more expensive than the EPO procedure (at least $US27,200 in official fees alone (EPO €705)).This is because the post-grant review will be essentially a judicial proceedings, with a judge and discovery and estoppels.

  There has been considerable unhappiness in some quarters with the procedure, largely because of the high rejection rate of patents subject to PGR. It was constitutionally challenged at the US Supreme Court on the ground that the USPTO, as a US Government agency, violates Article III of the Constitution by its assertion of judicial power to cancel private property

rights, rather than merely issue an advisory opinion as an adjunct to a trial court. This was rejected, but there remains the possibility of a further case relying on a patent as property right, on which an administrative body, such as the USPTO, as opposed to a court of law, is not entitled to judge.

To try to placate the opponents of PGR, the USPTO has introduced the ***Phillips* Standard** of claim construction.

- ***pre-issuance submissions*** US version of **third party observations** under the ***AIA*.** The submitter must supply the documents and an explanation of their relevance.
- ***prior art*** Under current US law, what was considered as prior art was considerably less than what is considered as prior art elsewhere – the *grace period* and the *Hilmer Doctrine* act to restrict what can be considered prior art. In addition, prior use and prior sale anticipations only counted if they had taken place in the USA.

  However, under the ***AIA***, prior use or sale anywhere is now prior art. Moreover, the Hilmer Doctrine has gone and the grace period provisions have been changed. What these certainly will mean is that much that would not previously have been considered prior art is now prior art (e.g., US applications claiming priority from foreign applications will become prior art as of their priority dates, not their US filing dates). It will therefore probably be worthwhile for a US inventor to get as early a filing date as possible.
- ***prior commercial use*** A defence against a charge of infringement against a business method patent is that the alleged infringer had used the alleged invention in public for at least one year prior to the patent filing. The ***AIA*** has expanded prior rights to all technologies, but with some limitations.
- ***prioritized examination*** Introduced by the **AIA**. It is possible (in theory) to have a patent granted within one year, provided certain criteria are met. It costs more (naturally). Only 10,000 such examinations per year will be undertaken.
- ***QPIDS*** (Quick Path Information Disclosure Statement) pilot program in the USPTO, seeking to shorten the examination. Normally if art is declared to the USPTO after payment of the issue fee, the only way to have it considered in by an **RCE** (see below). This all adds to the time and expense, QPIDS allows the supply of an IDS to the Examiner, and s/he will then consider whether prosecution should be reopened. If it doesn't, the application will return to issue and no further application need be filed.
- ***reissue*** US patent modified to take account of close prior art discovered after grant or to amend errors. Reissues receive a new number starting with Re. If it is intended to litigate on the patent and there are errors or close prior art, it is essential to reissue prior to taking action. A reissue can involve broadening as well as narrowing, but broadening (or "recapture of subject-matter") is only allowed under tightly-defined circumstances, and a broadening reissue must be filed within 2 years of grant.

  The nature of what exactly constitutes "error" was examined by the **CAFC** in *Hoyt Fleming v. Escort*. There it was held that errors include both slips-of-the-pen errors as well as those arising from a deficient understanding of law or fact. In this case, broadening of the scope of the claims to include later developments that were disclosed in the description was permitted.
- ***Request for Continued Examination (RCE)*** - if a US application receives a final rejection, it is possible to remove this and have another full examination. This is done by submitting an RCE (replacing the similar "continuing prosecution application" (CPA)). The application retains the original serial number and, for better or for worse, the same Examiner. It is essentially the payment of an extra fee for another full examination.
- ***restriction requirement*** – action required by the USPTO when it considers that an application contains more than one invention. One invention is chosen and the others can only be pursued in **divisional** applications. The USPTO has the addition quirk of "election of species", where it considers that the invention going forward for examination has multiple variants. One variant must be "elected" to be examined. The others will usually also be allowed if the elected species is allowed.

This also involves the judicially created consonance concept, derived from the safe harbor provisions of 35 USC 121. This specifies that the line of demarcation between the independent and distinct inventions that prompted the restriction requirement be maintained.

- ***secret prior art*** In most countries, other people's patent applications that are still within the 18 months between filing and official publication when your application was filed and about which you couldn't possibly have known, are **prior art** only for **novelty** purposes, that is, they must contain the whole alleged invention and cannot be combined with other documents to provide an **obviousness** objection. **Not in the USA.** In addition, recent US decisions have decided that this applies also to US **provisional** applications, provided that the subject-matter of the US regular filing is in the prov. This extends the "secret prior art" one year further back. The ***AIA*** has now extended this to include foreign priority filings, regardless of language.
- ***secret use*** In most places, a granted patent cannot prevent from doing what s/he has always been doing. This can apply even if s/he had only made a prior secret user of an invention serious preparations for commercial production. **Not in the USA.** US law regards the patentee, who put the invention at the disposal of the public by patenting and therefore publishing, as the true and first inventor under the "first to invent" rules, and this inventor can in some circumstances stop the secret user. There is much complication as to what constitutes "secret use" and it can only be decided in the light of the circumstances of the particular case. It is not yet known how the secret use will be interpreted under the ***AIA***. The USA does allow an invention to be held a **trade secret** under State law (and now Federal law).
- ***supplemental examination*** This came into existence on 16 September 2012. Patent owners will be able to ask the U.S. Patent and Trademark Office "to consider, reconsider or correct" information that was not considered (or was inadequately considered) during a prior prosecution. Much remains unknown until the rules are formulated, but it appears that it will provide an opportunity for the patentee to correct the patent from any taint resulting from misconduct in its procurement, and which would previously have left the patentee open to a charge of fraud. This could remove completely the possibility of **inequitable conduct** charges.
- ***swearing back/swearing behind*** – this provision of the first-to-invent principle ended with the ***AIA***. It involved showing that you came up with the idea first by lodging a declaration to show that your invention date preceded something that could otherwise disadvantage you. This could arise in ***interference proceedings*** where two parties have invented the same thing, by referring to records made prior to patent application. It could also be used during prosecution, to eliminate a troublesome citation from consideration. For this, meticulous, witnessed records are needed (US firms routinely have laboratory notebooks, etc., witnessed and stamped weekly).
- ***term*** - 20 years from application date, but law changes guarantee a 17-year term from grant if the applicant is diligent. If the USPTO is not diligent, there is added to the term the number of days by which the USPTO is considered to have held up grant. From this number of days is subtracted the number of days by which the applicant is deemed not to have been diligent. Result; if you want to know the term of a US patent, you have to look up the patent itself – it will usually be 20 years from application date, but you never can tell.

  In 2010, in the aftermath of a court case, *Wyeth v. Kappos*, there was a major hoo-hah that the USPTO has undercalculated all of these terms, and that patentees have been cheated out of patent term (in the case of pharmaceuticals, the loss of a few days can translate into millions in lost revenue in any currency you care to name). Patentees could (and did) petition for recalculation.

US patent eligibility What is and isn't patentable in the USA has become increasingly confused, courtesy of a number of US **Supreme Court** decisions that seem to depart further and further from reality, leaving the USPTO and the lower courts, which have to apply the rulings, in total confusion and the US patent profession in various degrees of despair.

US patent law revision proposals A necessarily incomplete version of the never-ending story of the USA trying to restore US innovation to some perhaps mythical golden age. Most seem to have gone nowhere very rapidly. However, they do demonstrate a remarkable innovation in the devising of acronyms.

- **American IDEA (IP Defense and Enforcement Advancement) Act** 2023 bill proposing to to fund law enforcement agencies to improve IP enforcement, to direct studies on how to protect U.S. IP, and to support legal aid programs to assist small businesses in protecting their intellectual property. Additionally, the Act would strengthen existing laws, in part by reauthorizing certain provisions of the 2008 PRO-IP Act, which enhanced remedies for violations of intellectual property laws.
- **Grace Period Restoration Act** 2015 US proposed legislation that seeks to restore something like the conditions that existed under the old pre-**AIA grace period** legislation. Its future remains to be seen.
- **Innovation Act** Dissatisfaction with the US patent system, especially the high cost of litigation and the alleged depredations of **patent trolls** has led to a whole battery of proposed legislation, which proves, if nothing else, that the US market for crazy acronyms is alive and well. This was a complex 2013 US bill that proposed a variety of measures such as limiting discovery, USPTO claim construction and covered **business method patent** review. In keeping with the current US fixation with **patent trolls**, it also seeks to reduce "abusive patent litigation". It passed the US House of Representatives in December 2013.
- ***Inventor Rights* Act** Legislation introduced in the US House of Representatives in December 2019. Its object is to make things easier for inventors who own their own patents (as opposed to inventors who assign their rights to their employers), they being the ones least able to afford the substantial costs to defend them and thus to be worn down by a deep-pocketed infringer. Measures proposed include:
- USPTO may not conduct an ***inter partes* review** of an issued patent without consent of the inventor – infringement will be heard by a court;
- infringers must not profit by using an invention without permission – no longer "reasonable royalty" but the entire profit;
- injunctions to prohibit unauthorized use of the invention;
- the right to file suit in their home district;
- recovery of attorney fees that substantially exceed the amount of damages awarded.

  Too early to tell what will happen to this one.
- **PATENT Act** stands for PATENT (Protecting American Talent and Entrepreneurship) Act. It seeks to overcome some of the perceived deficiencies of the Innovation Act.
- **Patent Eligibility Restoration Act** A 2023 proposal (revising a 2022 proposal) seeking to return eligibility doctrine back to the mid-2000s (pre-***Mayo*** and ***Alice***) when almost any useful advance was probably patent-eligible.
- **Prioritizing Resources and Organization for Intellectual Property Act ("PRO-IP Act")** 2008 legislation that made changes to prior intellectual property law in the areas of civil enforcement, criminal enforcement, coordination of federal intellectual property efforts and funding and resources of the Department of Justice intellectual property programs
- **PREVAIL** (**P**romoting and **R**especting **E**conomically **V**ital **A**merican **I**nnovation **L**eadership) Act (you have to admit that, when it comes to devising acronyms, the US has no equal). A 2023 proposal that builds on the STRONGER Act below, and seeks to reform the much-unloved **PTAB**.
- **Pride in Patent Ownership Act** (PPOA) proposed 2021 legislation seeking to ensure that the public has access to information about the true ownership of a patent.
- **Restoring America's Leadership in Innovation Act** A 2021 proposal that would turn the clock all the way back to pre-AIA days, including
    - Restoring a first-to-invent system and one-year grace period - includes substantial reversion of Section 102 to its pre-AIA status.
    - Abolishing Inter Partes Review and PGR:

- Abrogating ***Alice***, ***Mayo***, ***Bilski***, and ***Myriad*** "to ensure that life sciences discoveries, computer software, and similar inventions and discoveries are patentable, and that those patents are enforceable." This includes statutory revision of Section 101.
- Expressly establishing a patent as a private property right:
- Ending automatic publication of patent applications.

Early days…

- **STRONG Patents Act** believe it or not, it stands for the Support Technology and Research for Our Nations Growth Patents Act. A US pro-patentee and -innovator Act and rival to the abovementioned Innovation Act, introduced into the US Senate in March 2014. Strongly supported by the biotech industry and several major university groups. This has now morphed into the (no kidding)…
- **STRONGER Patents Act** The ER bit stands for "Economic Resilience". A 2019 follow-on from the previous item, which never went anywhere. This recently-introduced US bipartisan bill seeks to rectify what are perceived to be problems caused by the ***AIA*** and various Supreme Court decisions. The latest incarnation is based on the perception widely held in US patent circles that post-grant review and *inter partes* review (see **USA**) instituted by the AIA have had a deleterious effect on the US patent system, and therefore on US innovation and productivity. The Act seeks to make these possibilities less attractive, by creating higher bars for their institution. It would essentially eliminate post-grant proceedings as a means of obtaining an early and rapid adjudication of validity before product launch. Even after product launch, it would establish so many hurdles to effective review that it would make seeking **PTAB** review far less attractive than before, and likely less attractive than court litigation.
- **Unleashing American Innovators Act** (UAIA) 2021 proposed legislation aimed at helping small inventors. It would establish a satellite office in the SE of the USA, with the possibility oof establishing further satellite offices. It would also establish community outreach programs.
- **US Inventor Act** Proposed US legislation that would take the USA back to Paradise Lost/the Stone Age, depending on your point of view. It seeks the reversal of many of the features introduced by the ***AIA***, for example, the return of **first-to-invent**, fundamental changes to the law regarding patentable subject-matter (e.g., dumping of the **abstract idea** concept), return to pre-***KSR v. Teleflex*** obviousness law). More details here:

use claim A claim for the use of an old product for a new purpose. Regarded in some countries as a disguised process claim and rejected. However, in the **EPO**, a considerable body of case law has built up around the allowability of so-called "second non-medical use claims". There remains some considerable doubt as to what they actually protect.

use in public of an invention See **public use of an invention prior to filing a patent application**

USPTO The United States Patent and Trademark Office, one of the world's toughest to get past, especially, it seems, when you have something worth patenting – on the other hand, rubbish seems to get through quite easily. The unfortunate combination of often complete unreasonableness, poor (and declining) examination standards and sometimes downright dishonesty doesn't help.

utility The US equivalent requirement to **industrial applicability** for **patentability**. It allows for a broader spectrum of inventive activity (some medical methods, business methods, computer programs).

utility model Relatively quick and cheap form of patent protection possible in many countries. Also called "petty patents" (in German *Gebrauchsmuster*) and **innovation patents** (Australia). **Term** varies from country to country, but is shorter than that of a patent. A European Union utility model is likely in the future.

validation When a **European Patent** is granted, the patentee must then decide in which of the countries on the original application is patent cover desired. The patent must then be validated in those countries – this involves filing an application in the national office, with translation in many places (The **London Agreement** has reduced the number of countries needing translation). This must be done within 3 months of grant (Ireland, 6 months).

validity By definition, you cannot infringe a patent that is not valid, because there is nothing there to infringe. You may know **prior art** that wasn't found in an examination and that allows you to ignore a patent. Naturally the patent proprietor might not see it this way… However, it can often happen that the two parties come to an agreement – the patent proprietor gives us a free licence to work under the patent and we shut up about its invalidity. That way, only two people can work it, instead of the whole world. Not very public-spirited I agree, but eminently practical.

Visegrad Group Group of countries consisting of Czech Republic, Hungary, Poland and Slovakia, which intend to establish a joint Patent Institute. The envisaged advantages are that (a) applicants could communicate in their own languages, (b) reduced fees, and (c) encouragement to local businesses to use of the patent system. It is envisaged that the institute would do **PCT** International Searches and International Preliminary Examination, but this will require approval by **WIPO**.

war loss Old British-type law ground of **extension of term**. Now extinct.

"white space" An area of technology in which there are few or no patents, and in which patent applications can therefore be filed with minimal risk. Many professional searching companies now offer "white space analysis", complete with fancy diagrams and patent density charts, great for impressing upper management, but little else. While this kind of analysis is an understandable endeavour for avoiding competitors, it does not overcome the fact that, to get a patent in the white space, one still has to go out and actually invent something, i.e. something that works, as opposed to something applied for on the sole ground that it is located in an empty space in which nobody else has patents. It should never be forgotten that the space might be white because there isn't anything useful there. And while setting sail in the expectation of a miracle may have been sufficient grounds for the Spanish Armada setting forth, patent applications in more straitened times should be more firmly based.

"White space" frequently puts the cart before the horse by filing patents on exactly this basis. Indeed, some companies actually file purely with the intention of blocking other parties and benefiting from the uncertainty arising from the fact that it will be a long time before anyone knows whether a patent will be granted, and if so, what (you know who you are…). Often entirely spurious patent applications are concocted with no commercial goal in sight, apart from causing major inconvenience to others.

whole [of] contents The approach taken by many patent offices to ascertaining whether a reference is **novelty**-destroying. The entire text of the application is taken as representing the state of the art, not just the claims (see **prior claiming**).

WIPO World Intellectual Property Organisation, specialised UN agency dealing with all aspects of intellectual property (patents, trade marks, designs, copyright, circuit layouts, software protection, confidential information, traditional knowledge), headquarters Geneva. Custodian of the **Paris Convention** and operator of the **PCT**.

withdrawal of application An application withdrawn prior to **early publication** will never be published. However, the Patent Office concerned must be allowed sufficient time, or it may not be able to stop the publication. See **technical preparations for publication**

witnessing of lab notebooks Part of the **first-to-invent** principles in the USA was the witnessing and signing of lab notebooks on a regular basis, in order to show **conception**. Still relevant under the ***AIA*** for grace period purposes.

working In order to remain valid, a patent should be worked in the country in which it is patented. The **Paris Convention** provides penalties for non-working (**compulsory licensing**, then **revocation**) which are rarely invoked. Some Third World countries (e.g. India) have stiffer requirements, which require the applicant to file annual working statements, giving details of working, or if none, why not.

workshop improvement An old British case law term that describes a modification that a skilled worker would automatically provide in the normal exercise of his or her trade to make something work, and that is therefore non-inventive.

World Trade Organisation (WTO) UN specialised agency set up as a result of the Uruguay Round of GATT. Its provisions include the intellectual property aspects of trade called **GATT-TRIPS**. Current membership (May 2013) 159. As of 1st. January, 2000, the **priority** of patent applications of WTO members is recognised by the **PCT**, even if the member in question is not a member of the **Paris Convention** (e.g., Taiwan, Pakistan, Kuwait).

writ. Old term for an official order under English **common law**, directing the behavior of another arm of government, such as an agency, official, or other court. The two most commonly encountered in the world of intellectual property are:
certiorari - a court process to seek judicial review of a decision of a lower court or administrative agency.
mandamus – an order issued by a higher court to compel or to direct a lower court or a government officer to perform mandatory duties correctly

written description requirement The US name for a set of universal legal requirements to the effect that a patent application must describe an invention, in the words of 35 USC 112, *in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.* It also requires that the **best mode** of performing the invention be described. Recent US case law has strengthened the emphasis on **enablement**, and the written description requirement has been used repeatedly by courts against excessively greedy biotech. applications in which the claims are far broader than what the specification/description actually provides.

written opinion An opinion as to novelty, inventive step, industrial applicability and formal allowability issued by an **International Preliminary Examining Authority** in respect of a **Chapter II International application** under the **PCT**. At least one such opinion is issued (more than two is rare). An applicant is permitted to argue against a negative opinion and/or submit corrections and amendments. When this procedure is completed, the IPEA issues the final **International Preliminary Examination Report**. In most cases, the initial written opinion will be identical to the **IPRP** issued by the **International Searching Authority**.

WTO See **World Trade Organisation**.