UNIVERSITY OF BIRMINGHAM

Patents Information

What is a patent?

A patent describes a product or process that possesses or contains new functional or technical aspects. For example, it might describe

- A method or process for manufacturing product X
- A machine used in the manufacture of product X
- Product X itself

It is a legal document granting exclusive rights to a person or organisation for a limited period of time, so prevents others from making, using or selling the invention without permission.

In return for this monopoly, the inventor provides a full and sufficient disclosure for people to be able to carry out the invention, and (s)he also makes various payments. This makes patents the largest single body of technological information available anywhere and around 80% of this information cannot be obtained from any other source.

Why use patents as an information resource?

The quality and quantity of information included in each application make patents an important source as follows:

- Patents contain a wealth of technical information, which is often unavailable in journal articles and conference papers.
- They include literature reviews that will have been undertaken by the examiner to check that the invention is unique.
- They include a detailed explanation of the invention itself, often with illustrations.
- They cite other patents which have been used or referred to, enabling you to trace other relevant patents.

Patents are therefore useful for a range of researchers. For instance:

- Patents can be of historical significance, enabling researchers to trace the development of technologies.
- Patents can be used as a source of information about people, enabling researchers to identify experts in particular areas.
- Patents can be used for commercial information. Their specifications can reveal which companies are active in a particular market.
- Novelty or patentability of a new invention can be determined, i.e. whether it can be patented.
- Patents can be used as a preliminary to tackling a new problem, by finding out what work has already been done by others in the same field.

Researchers who ignore the patent literature risk missing important documents and could therefore waste time and money by duplicating previous research.

The Patent Document

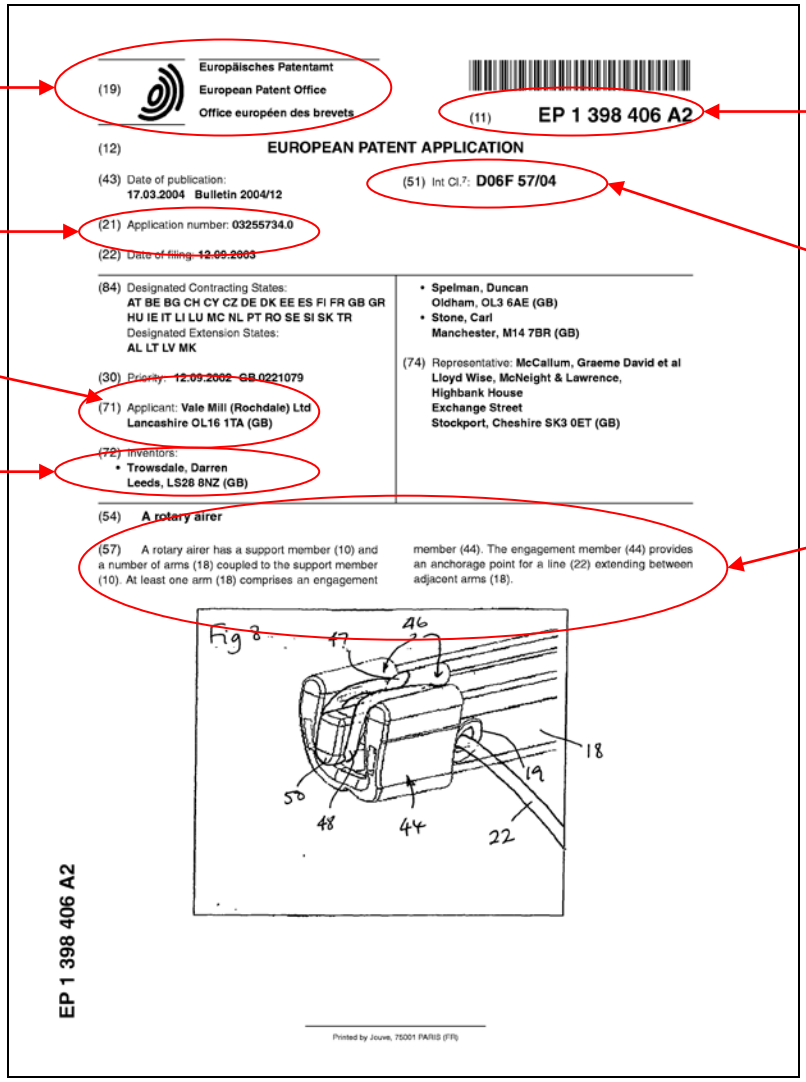
Each Patent has three sections:

- front page

- specification
- claims

Front Page
The front page includes: a title, abstract (summary), patent number, date, inventor and applicant (the company or individual applying for the patent). NB: The American term for an applicant is assignee. Each piece of information is identified by an ***INID Code*** (the Internationally agreed Numbers for Identification of Data Code).

Fig 1: European patent application front page



19 – Name of patent issuing authority

21 – Local application date

71 – Name of applicant

72 – Name of inventor

11 – Document number

51 – International Patent Classification Code

57 - Abstract

Some of the most important INID codes are:

11 – Document number
19 – Name of patent issuing authority
20 – Local application number
21 – Local application date
26 – Language of document
51 – International Patent Classification codes
54 – Title
57 – Abstract
71 – Name of applicant
72 – Name of inventor

Some two letter country codes which you may encounter are: (CH) Switzerland, (DE) Germany, (EP) European Patent Office, (FR) France, (GB) United Kingdom, (JP) Japan, (NL) Netherlands, (US) USA and (WO) Patent Co-operation Treaty.

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The second section is the specification, which describes the invention and may include examples, drawings and an account of the prior art (background technology).

Claims
The third section has the claims which define the legal boundaries of the patent. Usually there is a series of claims, which start with broad claims and then become progressively narrower in scope.

The Status of the Patent.
The patent specification is often published twice, The first is the Application, the second is the granted patent after the claims have been substantiated. The two versions are differentiated in UK patents by the letters A or B after the patent number, with B being the granted patent.

Tracing known patents

You may have identified a patent that is relevant to you, perhaps by searching a bibliographic database, or browsing a list of references at the end of a journal paper. Patent references are easy to recognise because they each have a patent number. Here are some examples of patent numbers:

- British: GB2208189A
- European: EP0050443A2
- Patent Cooperation Treaty: WO 84/00080
- United States: 4,718,426 (this may be preceded by US or PN)
- German DE 3727042A1
- Japanese JP 63-218215

To locate the full text of a patent, try searching one of the Patents Databases listed below by patent number.

Searching for Patents

Patents are legal documents and the information which they contain may be difficult to read because of its legal vocabulary. A patent may also be difficult to read if the inventor is deliberately cagey about the patent's main purpose. If refereed journal articles are available, you will probably find them much clearer than the equivalent patent. However, around 80 per cent of patents are never published as journal articles, and for those which are, the patent is usually published first.

Designing your patents search strategy

Due to the difficulties in interpreting patents and the technical language used therein, it is important to consider your search strategy carefully. There are two main ways to search for a patent:

1. International Patent Classification (IPC) - All patents are classified by an International Patent Classification (IPC) scheme, although many countries also have their own classification schemes. The IPC is a hierarchical classification system used for classifying and searching patent documents. There are eight sections in the IPC, for instance section C deals with Chemistry and Metallurgy. Sections are then subdivided into classes, then subclasses, then main groups, and finally subgroups. Finding the IPC code assigned to your subject and searching on it will reduce the number of irrelevant results. The IPC is available on the web at http://www.wipo.int/classifications/en

2. Keyword searching
Think broadly about the keywords that could be used to define your area of interest and go beyond the obvious. Consider searching word stems by using wild cards, and use Boolean operators. For more information on constructing a search strategy, see the Library Services' Guide to Effective Search Techniques, available on the web at:
https://intranet.birmingham.ac.uk/as/libraryservices/library/documents/public/alcd-guides/sk10.pdf

The British Library offer regular workshops on patent searching. See the British Library's Patent Collection Page at http://www.bl.uk/reshelp/findhelpsubject/busmanlaw/ip/ippatents/patents.html for more information.

Once you have considered your search strategy, you will need to decide which database to search.

Patents Databases

Esp@cenet (free) http://gb.espacenet.com/
The best starting point for free patents information is probably Esp@cenet. Esp@cenet is Europe's network of patent databases. A central Esp@cenet website provides access to national websites, sharing a common interface.

The web site provides the facility to search national and international patent databases, including the UK, United States, Germany, France and Switzerland.

The Esp@cenet worldwide file has variable coverage depending on country and date. If in doubt, it is best to assume that comprehensive coverage begins in the early 1970s.

For more information on searching Esp@cenet, see the Esp@cenet help pages.

US Patent & Trademark Office (USPTO) (free) http://www.uspto.gov/patft/
If you need a US patent that isn't available in esp@cenet, try the US Patent and Trademark Office. The US Patent and Trademark Office website consists of two databases. PatFT (patents) offers the full text of granted US patents from 1976 and full images of US patents from 1790 to 1975. The images can be displayed as TIFF files (plug-in required). This database is updated weekly, usually each Tuesday. AppFT (Applications) offers full text of published patent applications. This database is updated weekly, on Thursdays. You can restrict your search to specific sections of the patent document e.g. title, inventor name, claims.

Google Patents (free) www.google.com/patents
Google Patents covers US patents only, but is easier to search than the USPTO site, although the quality of the indexing has been questioned. Patents can be downloaded as .pdf documents (no TIFF plug-in required), and citations are listed.

Patent Lens (free) http://www.patentlens.net/
Is an Open Access resource provided by CAMBIA, a none-profit organisation aiming to use technology to improve quality of life by improving access to information. It includes European, US and Australian patents amongst others, and can be searched in languages other than English.

Scifinder (subscription – access via **Findit@bham** http://Findit.bham.ac.uk under 'Find Databases' link at top right**)**
The Library has a subscription to this bibliographic database which indexes chemical patents. The advantages of using SciFinder over the free databases above is the excellent indexing allowing detailed and precise searching, including chemical structure searching. However SciFinder does not provide access to the full patent document so needs to be used in conjunction with the free databases above.

British Patents

For extensive and thorough historical searches, you will need to visit a patent library and make use of the hardcopy and microform searching aids available. Locally, British Patents are held at:

Business Insight Patents

Central Library
Chamberlain Square
Birmingham B3 3HQ
Tel: +44 (0) 121 303 4531
Fax: +44 (0) 121 303 1354
Email: business.library@birmingham.gov.uk

Business Insight Patents, Birmingham Central Library, has extensive collections of UK, US and European specifications, and also offers a specialist enquiry service and an online searching service. They also provide access to the Derwent Innovations Index, a user-friendly web service for searching patents.

The most extensive collection of searching aids is held at the Business and Intellectual Property Centre at the British Library:

British Library
St. Pancras
96 Euston Road
London
NW1 2DB
Tel: +44 (0) 20 7412 7454
Email: bipc@bl.uk
http://www.bl.uk/reshelp/findhelpsubject/busmanlaw/ip/ippatents/patents.html

Keeping up to date with patents

http://www.patentalert.com/ - The US Patent and Trademark Office provide a free alerting service to update you on new US patents in your area of interest by email. Free registration is required.

Advice for University of Birmingham members who wish to patent an invention

According to the University regulations http://www.as.bham.ac.uk/legislation/docs/regulations_part3.pdf, (Section 3.16.1) "When a member of Staff makes an invention or discovery in the course of his or her normal duties or in such other circumstances that by law the invention or discovery belongs to the University and which he or she has reason to believe may be commercially exploitable he or she will report the same to the Head of College for action. 'Invention or discovery' shall include the production and development of computer software. Those with responsibilities for exploitation in this Regulation shall always act with all due expedition, according to the circumstances of the case".

If you are considering patenting an invention, you are strongly advised to contact Alta *Innovations,* the company set up by the University to help academic staff realise the commercial potential of their ideas. There is more information on the *Alta Innovations* website at www.alta.bham.ac.uk Furthermore,
you are advised not to discuss your application with third parties until your application is filed and you have been advised on the basis on which information can be shared.

Useful links

Esp@cenet http://gb.espacenet.com/

UK Intellectual Property Office http://www.ipo.gov.uk

United States Patent and Trademark Office http://www.uspto.gov/patft/

The European Patent Office http://www.epo.org

Chartered Institute of Patent Attorneys (CIPA) Directory of Patent Agents
http://www.cipa.org.uk/

British Library Patents Information Page
http://www.bl.uk/reshelp/findhelpsubject/busmanlaw/ip/ippatents/patents.html

The European Patent Office Online Services
http://www.epoline.org/portal/public/registerplus
- to check legal status of all published European and Euro-PCT applications

DEPATISnet http://www.depatisnet.de/
This service, provided by the German Patent and Trade mark Office allows you to conduct online searches of their in-house patents information system, Depatis.

Further reading

Introduction to Patents Information
Science Reference q T 210/I