

## Information Sources in Patents

*A series under the General Editorship of*

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For Kitty Silva,  
Sri Lanka, 26 December 2004



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# Series Editor's Foreword

In the first years of the 21st century, there is a popular belief that the Internet gives us easy world-wide access to all the information anyone can reasonably need. Experience, especially by those researching topics in depth, proves otherwise. It is ironic that, despite all the technical advances in information handling that have been made and the masses of information that assail us on every side, it remains as difficult as ever to ensure that one has what one wants when one needs it.

Of course the computer and the Internet have made a huge difference to our information gathering habits, especially in the hands of those who, through experience, have gained skill in their use, an ability to contain the amount of information within manageable limits and discrimination in assessing the reliability and adequacy of the resources accessed. No one nowadays would be without the Internet but it is only one among several sources each of which has its value according to the searcher's needs. In all cases, the speed and effectiveness of a search can be greatly enhanced by the advice of those who are experts in the techniques and in the subject field involved.

The aim of each volume of this K. G. Saur series of *Guides to Information Sources* is simple. It is to reduce the time which needs to be spent on patient searching; to recommend the best starting point and sources most likely to yield the desired information. To do this we bring you the knowledge and experience of specialist practitioners in the field. Each author regularly uses the information sources and services described and any tricks of the trade that the author has learnt are passed on.

Like all subject and sector guides, the sources discussed have had to be selected. The criteria for selection will be given by the individual editors and will differ from subject to subject. However, the overall objective is constant: that of providing a way into a subject to those new to the field and to identify major new or possibly unexplored sources to those who already have some acquaintance with it.

Nowadays two major problems face those who are embarking upon research or who are in charge of wide-ranging collections of information. One is the increasingly specialised knowledge of the user and concomitant ignorance of other potentially useful disciplines. The second is the trend towards cross-disciplinary studies. This has led to a great mixing of academic programmes – and a number of imprecisely defined fields of study. The editors are only too aware of the difficulties such hybrid subject fields raise for those requiring information and Guides for these sectors are being established as well as those for the traditional “hard disciplines”. In addition to commissioning new titles, constant attention is given to the production of updated editions for subject fields which are fast moving and subject to rapid development.

The Internet now gives access to many new sources (and to some, but not all, of the old ones) and being discipline-free can be particularly attractive to those working in new fields. At the same time it gives access to an overwhelming mass of information, some of it well organized and easy to interrogate, much incoherent and ill-organized. On top of this there is the great output of new information from the media, advertising, meetings and conferences, regulatory bodies, letters, reports, office memoranda, magazines, junk mail, electronic mail, fax, bulletin boards and so on and so on. Inevitably it all tends to make one very reluctant to add to the load by seeking out books and journals. Yet they, and the other traditional types of printed material, remain for many purposes the most reliable sources of information. Quality encyclopaedias are excellent for an overview of a topic but there are also many other time saving reviews and digests of information. One still needs to look things up in databooks, to consult the full text of patent specifications, standards and reports, both official and commercial, and to study maps and atlases. Increasingly these are available on CD-ROM as well as in print and choice depends on one's circumstances. Some archives are becoming available electronically but the vast majority are still in paper form. Many institutions are making some at least of their expertise available on websites but contact with individuals there is often still necessary for in depth studies. It is also worth remembering that consulting a reference book frequently produces a more rapid result than consulting an online source.

Fortunately, in these times when the amount being published is increasing rapidly, it is rarely necessary to consult everything that has been published on the topic of one's interest. Usually much proves to be irrelevant or repetitive. Some publications (including in that term websites and e-journals) prove to be sadly lacking in important detail and present broad generalizations flimsily bridged with arches of waffle. Many publications contain errors. In such cases the need to check against other publications, first making sure that they are not simply derivative, adds greatly to the time of a search. In an academic field there is normally a “pecking order” of journals, the better ones generally having a “peer review” system which

self-published articles on the web do not (though there are moves to introduce a peer review process to some web-published journals). Research workers soon learn – it is part of their training – which sources in their field of study to use and rely on, which journals, co-workers and directories are trustworthy and to what extent. However, when searching outside their own field of expertise and for other people, lay researchers and information workers alike, serious problems have to be overcome. This makes the need for evaluative guides, such as those in this series, even more essential. The series attempts to achieve evaluation in two ways: first through a careful selection of sources, so that only those which are considered worthy are included, and second through the comments which are provided on those sources.

Guides to the literature and other sources of information have a long and distinguished history. Some of them retain their value for many years as all or part of their content is still relevant but not repeated in later works. Where appropriate these are included in the sources referred to in this series along with the wealth of new sources which make new Guides and new editions essential.

Michael W. Hill  
Ia C. McIlwaine

# Preface

Since the first edition of this book, edited by Peter Auger and published in 1992, a complete revolution has taken place in the dissemination of patent information. Technical developments – most notably the internet – have caused great changes in the information industry, including the patent sector. Perhaps the largest influence has been upon the nature of the databases emerging from different suppliers, which in turn affects our choice of the “right” database for a particular patent search. In writing a book which purports to be a “Guide to Information Sources” in the subject, I therefore feel duty-bound to give some space to considering how the current range of products has developed over time, and to provide some background on how patent publications come to be at all, rather than merely provide a shopping list of alternative search files.

A fundamental point to recognise is that patent offices are required to publish information, as an integral part of the patenting process. The commitment to provide such data to the public was foreseen by the framers of the 1883 Paris Convention, who included Article 12, which states that:

12(1) Each country of the Union undertakes to establish a special industrial property service and a central office for the communication to the public of patents, utility models, industrial designs and trademarks. [*i.e. to establish a patent office*]

12(2) This service shall publish an official periodical journal. It shall publish regularly:

(a) the names of the proprietors of patents granted, with a brief designation of the inventions patented; [*i.e. to produce some form of gazette*]

Despite the clear requirements of Article 12, there was – and still is – considerable variation in the degree of enthusiasm and commitment with which countries complied with this aspect of their operations. Some of the larger,

well-established offices, such as the United States, the United Kingdom, Germany and France, have a history of producing regular documentation; others have a less-impressive record. For many patent offices, however, generating this information is seen as essentially a spin-off product from the primary function of the office, namely to examine and grant patents. Few patent offices believed that the development of sophisticated retrieval tools should be part of their function.

During the 1950's to 1970's, the commercial information sector took the lead in developing patent information into a more 'industry-friendly' tool. The raw 'first-level' data from the patent offices were obtained by pioneer information companies such as Derwent Publications in the UK and Information For Industry (IFI) in the US, and re-issued as 'value-added' products, such as printed bulletins or batch-searchable (later online, interactive) electronic files. The patent offices were happy to co-operate with this, as it provided a means of getting their information out to a wider audience than the small numbers of industrial users who could reach their public search rooms. Through to the early 1990's, the patent offices generally saw no mandate – or opportunity – to enhance their role by becoming direct suppliers to the end user.

With the advent of the internet, the established chain of distribution (patent office-database producer-host-user) has begun to break down. Many patent offices are using the internet to supply their first-level data directly to the user. Some database producers have either begun to buy into the host industry, or to sell their products on a web-based platform, circumventing the hosts completely. As a consequence, users are being exposed to patent information products from multiple suppliers, with varying degrees of refinement. The same basic data set may now be available through many routes, resulting in a proliferation of products and services.

Efficient searching depends upon both the data quality and the platform used to search it, and free internet sites offering first-level data from the major patent offices cannot deliver to every type of user, nor for every type of search requirement. Research-based industries rely upon good patent searching for their commercial survival, and are prepared to pay for access to premium tools if they provide the necessary degree of insurance against accidental duplication of research or – worse – infringement of others' rights. Despite the growth in browser-based systems, these users largely continue to rely upon the established value-added data sources, with sophisticated command languages, developed prior to the internet.

It is clear that the information sector has not seen the end of development in browser-based tools, and they will certainly have a role to play in the future of patent information systems. However, it will always remain true that the choice of 'best database' for a patent search will be influenced by a complex combination of the information need (data source), the technical requirements (search engine) and the available budget (free or fee). It is the hope of the author that this work will help with the decision-making

process, irrespective of whether the user is a beginner or more experienced searcher.

I would like to give my sincere acknowledgement to the many friends and colleagues in the industry, who through useful discussions – both electronic and verbal – have contributed to the shape and substance of this book. There are too many to name individually, but many are co-workers in one or more of the various user groups in the UK, Europe and the United States. I hope that I have done justice in capturing your expertise for the benefit of all.

SRA

## **Part I: Patent processes and documentation**



# Principles of patenting

## ► LEGAL PROCESSES

---

The English word ‘patent’ is derived from a Latin phrase *litterae patentes*, meaning ‘open letter’. For centuries, a ‘letters patent’ was a circular communication from the State (be it monarchy or republic) to its subjects or citizens, to announce the conferring of certain privileges upon an individual. Typically, the opening sentences might address the letter “to all to whom these presents come”. Letters patent are still issued in the United Kingdom by the College of Arms when a grant of arms is made to a new peer. Other uses are for the creation of a public office (e.g. Queen Victoria issued Letters Patent when creating the post of Governor-General of Australia), on the creation of a new public body, the transfer of land rights or in the commissioning an individual to a certain task, in which case the letters patent could be seen as a form of passport or warrant of authority.

Letters patent were also issued in order to confer a State monopoly right over a trade or craft. During the 14th and 15th centuries in England, the Crown used the grant of monopoly rights to control trade in cloth and the manufacture of glass. This procedure was open to abuse, and the creation of future monopolies was banned by the Statute of Monopolies in 1623. However, this statute specifically excluded Letters Patent for “the sole working or making of any manner of new manufactures” issued to their inventors – in other words, modern-day patents for inventions. By the mid-19th century, the most common usage of a letters patent was for exactly this purpose, to confer rights in a new invention for a limited period, and consequently the layman’s understanding of the word ‘patent’ has come to be limited to a patent for invention.

The retrieval and use of early patents is a fascinating field in its own right, and one which calls for distinct information skills. On the development of patents, readers are referred to the introductory chapter of Liebesny’s classic book<sup>1</sup> or the more recent work by Grubb<sup>2</sup>. A good source

for setting patents in the wider context of the whole of intellectual property is the 1997 publication by the World Intellectual Property Organization (WIPO) in Geneva, particularly the section on the history and evolution of intellectual property<sup>3</sup>. This is now out of print, and the successor publication<sup>4</sup> unfortunately contains less of this background material.

From the point of view of the information specialist, rather than the attorney, the prime importance of patents is not the legal rights to work an invention which they confer upon the patent holder, but the volume of technical information which is laid open to the public as a result of the granting procedure for the patent. The British Library in London holds stocks in excess of fifty million patent documents, capturing the progress of technology from the 17th century to the present day, in many countries around the world. The bulk of this present book will be devoted to the use of modern-day patent documents (say, from around 1950 to the present), but that is not to say that the older material is useless. Students of the history of technology can gain great insight from the examination of original patents for invention from the Industrial Revolution onwards. An comprehensive overview of the English system and its social context is provided by McLeod<sup>5</sup>. Retrieval of older documents presents distinct challenges, for which the reader is referred to the work by van Dulken<sup>6</sup> for British patents, or the briefer outline chapter by Comfort<sup>7</sup> in relation to the United States. Further afield, background information on some historical patent series for a range of countries can be found in the survey by Rimmer<sup>8</sup>, at the beginning of each country chapter.

## Defining a patent

There are many definitions of a patent. One possible definition (from reference 2, p.1) is that a patent is:

- a grant of exclusive rights
- by the state
- for a limited time

in respect of a new and useful invention.

Each of those three aspects has a bearing upon our perception of patents and how we can use them as information tools.

In respect to “*a grant of exclusive rights*”, this implies that a patent is not ‘for the taking’. The popular press often refers to patents as being ‘registered’, as if one merely has to turn up at some Dickensian establishment and submit your application to a large rubber-stamp, in order to walk away as a satisfied patent-holder. The word ‘grant’ carries with it the implication that certain fixed criteria need to be satisfied in order for the application to be allowed. Failure to satisfy these criteria will result in the patent being refused, irrespective of how good (or how expensive!) the

research behind the patent application has been. In the information context we should never overlook the legal implications of the documents which we are using – many published patent applications are destined never to emerge as granted patents.

The second aspect is that a patent is “*by the state*”. This implies that patents are not universal. There has never been a single global patent system, granted by a central authority and having effect in all the territories of the world. There are a very few regional patent systems, which grant on behalf of a limited number of countries, but these are the exception rather than the rule. In general, if an inventor wants to protect their invention by patent, they must apply in each and every country individually, complying with local filing requirements and having their case examined under local laws. One consequence of this is that the same invention may be allowed patent protection in one country but refused it in another. In countries for which no protection is sought, no protection is obtained.

The final aspect of our definition is that a patent is “*for a limited time*”. Again, the popular media image of patents sometimes portrays them as tools with which multi-national companies can dominate trade in a particular invention in perpetuity. The fact is that all patents eventually expire. The most common term of a modern patent is 20 years, counted from the date of filing the application. In addition to expiry at the end of this period, a substantial proportion of granted patents never reach their 20th birthday, but die earlier. If the owner finds that their invention is less of a commercial success than they hoped, they can choose to allow the case to lapse when the next round of renewal fees becomes due. Once a patent expires or lapses, any third party can enter this previously protected market space, and start to operate the invention, without being liable to the erstwhile patent holder for any royalty or other licence.

The consequences of our three-part definition are multiple. For the information user, it is clear that we need to pay close attention to the various dates associated with a patent, its status (e.g. How far is it along the process towards grant? or, Is it still in force?) and its geographical limits. If a database fails to address these issues, it will be of less use in certain types of patent searching than one which does. We will see the implications of this in later chapters of this book.

## The concept of priority

Before discussing the historical and current processes used in examining patents, it is necessary to introduce a very important idea, namely that of ‘priority’.

The legal concept of priority was first created by the International Convention for the Protection of Industrial Property, signed in Paris in 1883 and commonly referred to as the “Paris Convention”<sup>9</sup>. Signatory states are

referred to as belonging to the ‘Paris Union’ or simply as ‘Union countries’. In Article 4 of this document, it is stated that:

A (1) Any person who has duly filed an application for a patent. . . . in one of the countries of the Union. . . . shall enjoy, for the purpose of filing in the other countries, a right of priority. . . .

C (1) The periods of priority referred to above shall be twelve months for patents. . . .

The essential result of this Article is that a patent applicant is allowed a period of 12 months from their first filing (which usually takes place in their home country) in which to lodge corresponding applications for the same invention in other countries. Provided they file within this deadline, their corresponding applications will be treated as if they were filed on the first date, which is thus referred to as the ‘priority date’. This reciprocal treatment by other Union countries means that an company or individual inventor may make multiple applications for patent protection of the same invention in many countries around the world, and be assured that they will be given equal treatment when examined – in effect, their applications are treated as they were all filed simultaneously. By September 2004, there were 168 countries in the Paris Union, giving a very wide applicability to this right of priority.

The existence of the right of priority has a fundamental effect upon the activities of the patent information specialist. Firstly, it affects which part of the literature has to be searched, for each of the major search types discussed in Chapter 8 onwards. Secondly, the priority details – reproduced on the front page of modern patent documents – are used in the compiling of databases of patent documents, and need to be understood if the output from a search is to make sense. The priority details are used by database producers as the common key to link individual national publications relating to the same invention into a so-called ‘patent family’. The construction of patent families is discussed in later in this chapter.

## **The historical examination process for patents**

It is often remarked that the process of granting a patent is a ‘bargain’ or ‘contract’ between the patentee and the national patenting authority. The national authority (usually but not invariably a government department) issues a statement – in the form of the grant certificate – which establishes a *prima facie* right of the patent holder to prevent other people making, selling, using or importing the defined invention without their prior permission. Clearly, third parties cannot be expected to avoid infringement if they do not know what they have to avoid. Hence, the reverse side of the bargain is for the patentee to allow the full details of their invention (in the form