

HOW TO PERFORM A PATENT SEARCH

In this article, we discuss the benefits of having a *novelty search* performed. A novelty search involves searching prior art to assess the novelty of an invention. At the outset, it is important to realize that there are several other types of searches. Some of the other types of searches include a *validity search* and an *infringement search*. A validity search involves searching the prior art to establish the enforceability of an issued patent. An infringement search involves a search of the prior art to determine whether there are any issued patents that would bar the manufacture, use or sale of a particular product, process, or service. These other types of searches are beyond the scope of the present discussion.

Although the Patent Office does not require that an applicant perform a novelty patent search (hereinafter called simply a *patent search*), it often is useful to have one done. A patent search may reveal that another person has already conceived of the same or substantially similar invention. In this case, the applicant would need to design around the reference (if possible) or abandon the application.

There are essentially two different ways to perform a patent search. The most thorough is the manual patent search. A manual patent search involves flipping through all patents classified in areas associated with the subject matter of the applicant's invention. The other way to perform a patent search is to use a search tool. In general, search terms are entered into the search tool, and patents with the terms are returned. This is similar to how one finds information using an Internet search engine.

Optionally, the applicant may decide to also search foreign patents and non-patent literature, such as technical papers. Full text of European patents may be searched using various search tools. Other foreign patents may be searched using certain search tools that look at only the English-version abstracts of the patents. Although useful, such a search may miss key words found only in the document. In any case, the only way to be sure that a non-English

patent is on point is to have it translated into English. Because of the expense and delay involved in the translation process, few applicants have documents translated into English unless the abstract is directly on point.

There are many databases for non-patent literature that patent examiners use to search patents. It can be worthwhile to have a search performed using these sources as well. The pros and cons of a non-patent literature search will be discussed.

Manual Searching

As mentioned, a manual patent search involves looking at patents classified similarly to the applicant's subject matter. As an initial matter, it is worth noting that every patent or patent publication is assigned a classification. A patent classification is a code that provides a method for categorizing an invention. The classification is typically expressed in the format 999/9. The first number represents the class of the invention. The number following the slash is the subclass of the invention within the class. For example, the classification 705/26 refers to class 705, subclass 26. Class 705 represents "data processing systems for business practices". Class 705 contains the bulk of business method patents. Subclass 26 refines this subject matter of class 705 to include only patents directed to "electronic shopping".

Each patent or patent publication has an original classification code and usually also an original cross-classification. For example, a patent directed to buying and selling items via the Internet may have been originally been classified in 705/26 (electronic shopping). This patent may also have been cross-classified in 705/27 (presentation of image or description of sales item), and perhaps also in 705/29 (inventory management). The original classification and cross-classification is shown on the face of every issued patent and patent publication. However, the Patent Office sometimes changes the classification of an issued patent or publication, and may even modify the classification definitions. Thus, the current classification and

cross-classification of a patent or patent publication may be different from the original information.

In recent years the classification system has been rapidly expanding to reflect changes in technology. As new technologies are developed, new classifications are created. As more software patents have issued, many new class for them were defined. Recently, many new subclasses, such as subclasses 705/50-80 for business processing using cryptography, have been introduced.

As mentioned, classifications have definitions and hierarchical relationships to one another. The table below shows an example of some of the hierarchical relationships.

Class 705...

- 1 Business Practice
- 2 . Health Care Management
- 3 .. Patient Record Management
- 4 . Insurance
- 5 . Reservations
- 6 .. Coordination of Plural Reservations
- 7 . Operations Research
- 8 .. Allocating resources or Scheduling
- 9 ... Staff Scheduling or Task Management

Subclass definitions for Class 705

As shown, a subclass that is of greater specificity and subsumed under another is indicated with one or more dots. For example, the subclass 705/1 is the general subclass for business method technology. Subclass 705/7 (operations research) is indented one level under 705/1, 705/8 (allocating resources) is indented two levels under 705/1 and one level under 705/7, and 705/9 (staff scheduling or task assignment) is indented three levels under 705/1 and two levels under 705/7.

Classification definitions may be found in *Manual of Classification Definitions*. This book gives a detailed definition for each class and official subclass included in the *Manual of Classification*. The recommended approach for performing a manual search includes first carefully reading the definitions and search notes in the *Manual of Classification Definitions*. The definitions indicate the subject matter to be found in or excluded from a class or subclass. The “notes” illustrate the kinds of information that can be found in a subclass and direct the searcher to other related subclasses which may contain relevant information. These reference books can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. In addition, these books are available on the PTO Web Site. Particularly useful is the searchable *Manual of Classification Definitions* found at

<http://www.uspto.gov/web/patents/classification/>.

Typically, an invention will have numerous features which will involve a search in several subclasses. For example, consider a *smart card* that functions as both a health insurance card and a debit card. This would require searches under subclass 705/1 (general), 705/2 (health management), 705/35 (finance), 705/41 (programming a portable memory device), as well as possibly outside the business method class. The exact subclasses that need to be searched can only be determined from fully understanding the *claimed* subject matter, understanding the pertinent class definitions, and reading the search notes associated with each of the classes that are being searched.

Once the searcher has obtained a list of subclasses, the bulk of the work has yet to be done. The searcher must then either visit the PTO search room or an affiliate PTO depository library. (A list of PTO libraries and a map of the PTO facility is attached to the end of this chapter). Before visiting the PTO search room, it is required that the visitor obtain a picture identification card. This identification card will allow the user entry into the search room. It is also required if the searcher wishes to speak to an examiner in person. An examiner may be of assistance in formulating a search strategy.

The process of actually performing the manual search involves gathering all patents in the subclass, and flipping through each one. At the PTO search room patents are arranged in subclass order, so it is necessary to find the particular subclasses for the art. Librarians at the Help Desk may be consulted for this information. Alternatively, the PTO search room also has an electronic method to search patents. Use of the terminals is free, and is the method now being used by most professional searchers. Instead of physically flipping through patents, the electronic method simulates this same process. These terminals can also be used to enter keywords and perform a database search (see below). To obtain a user ID and password for using these terminals, consult with a librarian or search specialist.

Experienced searchers and examiners will be able to quickly look over a patent in perhaps ten- to thirty-seconds. A common approach is to place a patent into a stack, if it appears that it might be possibly relevant, then go through the stack looking more carefully at these

patents. Unfortunately, for someone not skilled in patent searching or examination, looking over a large number of patents can take much longer. On the other hand, if one has the free time, it can be a worthwhile endeavor.

Manual searches can also be done using various electronic databases which require a fee to use. One of the best of these is provided by Delphion, which also employs key word searching. Delphion allows searching of US patents and US published patent publications, as well as Japanese patent abstracts, WIPO

publications, EPO publications, and German patents. They can be contacted at www.delphion.com.

Although the PTO web site is quite good for casual browsing and research, it is not well suited for a manual search, particularly because it is very slow.

Using a Search Tool

Another way to search patents and publications is to use a search tool. The best search tools are either only accessible at the PTO facility in Alexandria or are available for a fee from private services (such as Delphion). However, it is possible to perform a fairly extensive database search using the PTO's Web site search engine. In fact, it is recommended that inventors familiarize themselves with the PTO's search engine even if they intend to have a search performed by a professional search firm. The reason for this is that the inventor will get a better understanding for what type of invention is patentable, and where their invention fits into the art. The inventor might see, for example, that many smart cards already exist but that they are all directed to facilitating electronic commerce transactions. He or she could then have their patent attorney emphasize that the key feature that distinguishes the invention is that it is both a tool for electronic payments and also a health identification card. This type of

argument is often quite persuasive to examiners, who, after all, have the job of fitting issued patents into the existing prior art.

If you intend on making use of the search tools in Aexandria or those provided by an outside vendor, it is important that you obtain the latest information regarding how to use these tools. Since they are generally directed to sophisticated, professional patent searchers and patent examiners, these tools tend to have complex features. For example, many of them allow deep nesting of terms that are not available on the PTO web site. They also have various short-cuts and tricks that make searching less laborious. However, the details of these search tools are outside the scope of the present discussion.

More information on using these tools can be obtained from the following vendors:

Delphion
901 Warrenville Rd.
Suite 20
Lisle, IL 60532
(630) 799-0699
www.thomsondelphion.com

Dialog
11000 Regency Parkway
Suite 10
Cary, North Carolina 27511
(800) 3-DIALOG
<http://www.dialog.com>

To use the PTO Web site search tool, it is necessary to install a TIFF image viewer. As of now there is only one known company that provides a free TIFF plug-in. Directions for installing it are found on the PTO web site. Additional information about the product can be found at www.alternatiff.com. The TIFF plug-in works with Microsoft Internet Explorer and Netscape Navigator. It may work on other browsers as well. (It appears not to work on Firefox).

To perform a search using the PTO Web site, it is necessary to choose between searching issued patents and published patent applications. The process is essentially the same for either of these, but the PTO web site unfortunately does not have any way to search both databases simultaneously.

Assuming that the user has chosen to search issued patents, the next step is to decide whether to perform a "basic search" or an "advanced search". The basic search provides a convenient form to enter search terms. The limitation is that only two search terms can be entered at a time. The search terms can make use of a boolean operator (i.e., an 'and' or an 'or'). Thus, one could search patents

having the terms "electronic shopping" and "Internet". In this case, only patents having both of these terms somewhere within them would be returned. In contrast, "electronic shopping" or "Internet" would return patents having either term.

The basic patent search form provides a way to limit the search term to a portion of the patent. Table 2 shows the choices. For example, one could limit the search to class 705 by typing in "705" and selecting "current US classification". One could limit the search to the title of the invention, the claims, etc.

USPTO PATENT FULL-TEXT AND IMAGE DATABASE

Home	Quick	Advanced	Pat Num	Help
View Cart				

Data current through 09/16/2003

Query [\[Help\]](#)

Term 1:	<input type="text"/>	in Field 1:	<input type="text" value="All Fields"/>
		<input type="text" value="AND"/>	
Term 2:	<input type="text"/>	in Field 2:	<input type="text" value="All Fields"/>
Select years [Help]			
<input type="text" value="1976 to present [full-text]"/>	<input type="button" value="Search"/>	<input type="button" value="Reset"/>	

Patents from 1790 through 1975 are searchable only by Patent Number and Current US Classification!

TABLE 2 - "Quick Patent Search"

The advanced search has everything that the basic search has, but does not have a limitation as to the number of items that may be logically connected. For example, one could provide three search terms: "Internet" and "electronic shopping" and "catalog". Table 3 provides a list of searchable keywords.

Field Code	Field Name	Field Code	Field Name
PN	Patent Number	IN	Inventor Name
ISD	Issue Date	IC	Inventor City
TTL	Title	IS	Inventor State
ABST	Abstract	ICN	Inventor Country
ACLM	Claim(s)	LREP	Attorney or Agent
SPEC	Description/Specification	AN	Assignee Name
CCL	Current US Classification	AC	Assignee City
ICL	International Classification	AS	Assignee State
APN	Application Serial Number	ACN	Assignee Country
APD	Application Date	EXP	Primary Examiner
PARN	Parent Case Information	EXA	Assistant Examiner
RLAP	Related US App. Data	REF	Referenced By
REIS	Reissue Data	FREF	Foreign References
PRIR	Foreign Priority	OREF	Other References
PCT	PCT Information	GOVT	Government Interest
APT	Application Type		

Once a search has been performed, the user may have obtained dozens -- even more than one hundred -- relevant patents and patent publications. Unfortunately, there is no short-cut to reading these patents, to determine if they are closely related to the applicant's invention. Searching is a time consuming task, even when a search tool is used to facilitate the process.

An alternative to the PTO Web site is to use Google Patents, which is located at:

<http://www.google.com/patents>

The Google patent interface looks like this:



<input type="text"/>	<input type="button" value="Search Patents"/>	Advanced Patent Search
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Search over 7 million patents.

Google also provides an "advanced search" capability, which allows searching on patent number, title, inventor name, assignee, and current classification (this information comes from the PTO files, no doubt). One good thing about Google, however, is that the patents can be obtained in PDF format (rather than TIFF). However, even with the PTO Web site it is possible to obtain patents in PDF by going to a third party web site, such as www.PatentFetcher.Com or www.Pat2PDF.Com (both of which are currently free to use).

Non-Patent Literature

Many inventors do not perform a non-patent literature search. However, one should consider having one performed in certain areas, particularly computer science and the business method arts. Because these patents were not granted very frequently until relatively recently, there is not a very large body of information available in the patent area. Often, ideas in this field were discussed in magazines and journals that are not even of a technical nature. Therefore, a patent search alone may not reveal prior art that is relevant.

On the other hand, a non-patent literature search can be expensive and time consuming. One quick and easy alternative way to obtain non-patent literature that every applicant should perform is an Internet search. Search engines such Google, Yahoo!, Bing, etc. will at least cover much of the material published on the Web. It will not obtain information that is only available for a fee, such as access to many trade publications and newspapers.

Conclusion

A patent search does not have to be done by a registered patent attorney or agent. In theory, anyone can hold themselves out as a patent searcher. However, reputable patent search firms are staffed by persons with the requisite technical and scientific knowledge to understand the invention. Qualified patent searchers also understand the classification system and how to perform a thorough search. The largest group of patent search firms exist in the Washington DC area, and many of the best patent searchers are former patent examiners. Although some patent attorneys also perform searches -- and generally do a good job -- it is common for patent attorneys to outsource their services to a patent search firm.

After a patent search is performed, typically the applicant is provided with a half dozen or more patents. In some cases, the patent search report will also include brief comments about each of the most

relevant patents. It is important to submit all of the patents in the search report to the Patent Office. Failure to submit relevant prior art that one is aware of can result in one's patent being invalidated later on during litigation.

Under Rule 1.156 the Patent Office requires that an applicant submit all prior art that is "material to patentability". Although there is no exact definition for what this means, it is the better practice to err on the conservative side and submit any prior art that one believes may be relevant. When in doubt, submit it. That is why it is recommended that all material obtained from the patent search be submitted regardless of whether the search firm made any comments about it or deemed it to be relevant.

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