

patsnap

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Getting Started with Patent Searching

**How to get the most
out of PatSnap**



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An Introduction to Patent Searching

Overview

Patent searching is an art form. Literally. That satisfying feeling of crafting the perfect search is nothing less than *“an activity of imaginative or creative self-expression”*. To find the patents you are looking for, you need to express a set of criteria within your search tool in order to define a specific result. A result that you must do your best to anticipate and predict. In other words, you need to imagine what you might find before you look for it.



We're going to look specifically at the field search in this paper. Topics covered will include the purposes of search, building a more complex query, and the commands and operators involved. We'll look at the breadth of searches and the language and terminology you should avoid or utilise. Then we'll cover classifications and other specifics, such as the use of dates and jurisdictions. Finally, once we've covered how to build queries, we'll go over some examples, simple and complex.

The details already known by you or available might be numerous. Perhaps you know the terminology and language of the technology spaces in which the patent was developed. Perhaps you know the companies involved in the production of the relevant products. Maybe you know the year of inception for a specific technology, the inventors who dreamt it up, or the lawyers who protected it. Unfortunately, you won't know everything, so this paper will help you to make use of the clues and ideas that you are aware of, in order to find out about the things that you're not.



The Different Methods of Searching

Field search and why the pros use it

There are different kinds of search tools available on PatSnap, and each have different advantages in various scenarios. However, the most precise and advanced way of searching is the field search. Other search options in PatSnap are: command, bulk and semantic searching. Command search is good for constructing a research query piece by piece. Semantic search is particularly well-suited for quick and easy output, while the bulk search is favourable for mass searching.

The field search is used by roughly 90% of all users – and for a very good reason. On the field search we can define exactly what we want to find, and we can edit our query to anything we want. Or don't want. It allows for the most control over exactly what comes back in your search. Most importantly it allows us to construct our own query. The screenshot below shows you how the field search tool looks within PatSnap Analytics.

The screenshot displays the PatSnap field search interface. At the top, there is a green 'Search' button and a 'Clear' button. Below this is a checkbox for 'Search including English machine translations' with an information icon and a 'Search Helper' link. The main search area features a large 'All' input field with a 'Keyword Helper' button. Below this are several filter sections: 'Title / Abstract', 'Title / Abstract / Claims', 'Title', 'Abstract', 'Claims', and 'Description'. The 'Application Date', 'Publication Date', and 'Priority Date' sections each have 'From' and 'To' date pickers. Below these are 'Publication Number' and 'Application Number' input fields. The 'US Classification', 'International Classification', 'Cooperative Classification', and 'Locarno Classification' sections each have an input field and a corresponding 'Helper' button. The 'FI' and 'F-TERM' sections have input fields. At the bottom, there are three checked checkboxes for 'Original Assignee', 'Standardized Assignee', and 'Current Assignee', followed by an 'Assignee Name' input field and a 'Corporate Tree' button.

Boolean Searching

Boolean searching can be thought of like an algebraic equation. It has many different aspects which can be important at different times and it can have many different elements which interact based on the commands you give them. We'll now cover the different operators which can assist you within PatSnap.

Parentheses

Parentheses are the underlying operator within a query. They can change the overall meaning of a search, just by moving their placement. And just as in algebra, they will change the order in which the system looks at your query.

OPERATOR	USAGE & FUNCTION	EXAMPLES
()	Parentheses can be used to define the order in which the system combines parts of your search.	vehicle AND (engine OR motor) titanium

Basics

The basic operators are AND, OR and NOT. They allow you to say whether words must be returned, whether they are optional, or not wanted at all.

OPERATOR	USAGE & FUNCTION	EXAMPLES
AND	Retrieves patents containing both keywords or criteria.	solar AND cell
	Either keyword or criteria may appear first.	TTL:computer AND AN:apple
OR	Retrieves patents containing either or both of the keywords or criteria.	battery OR cell TTL:computer OR IPC:H01L
NOT	Retrieves patents containing the first keyword but not containing the second keyword.	battery NOT "lead-acid"
	Retrieves patents containing the first criteria but not containing the second criteria.	AN: apple NOT ABST:screen

Boolean Searching

Quotation Marks

Quotation marks allow you to specify that certain words or text should appear exactly as defined. This will often be appropriate when you have technology terms that are made of two or more words. For example, the material *"carbon fibre"* is two words, and therefore needs to be located in patents as stated. You don't want patents that have *"carbon"* in one place and *"fibre"* in another, only those documents where the two words are found together.

MEANING	QUERY
This will return any patents with both of the words <i>"solar"</i> and <i>"cell"</i> but not when they also have <i>"carbon fibre"</i> within them.	solar AND cell NOT <i>"carbon fiber"</i>
This will return any patents that have the term <i>"cardboard"</i> but not when it is mentioned as part of <i>"cardboard box"</i> .	cardboard NOT <i>"cardboard box"</i>

Wildcards

Another function are the wildcards. These allow you to use a root word to cover a variety of different suffixes or combinations of characters following an asterisk. You can even put a wildcard in other search fields, such as patent number. For example, writing PN:US* will ensure that every publication that begins with *"US..."* will be returned.

OPERATOR	USAGE & FUNCTION	EXAMPLES
*	Can be used to replace a string of characters at the end or in the middle of a word. Can be used in all text and number fields. Should be used with stemming OFF.	electr* EP200*B2
?	Can be used to replace an individual character at the end or in the middle of a word. Can be used multiple times. Can be used in all text and number fields. Should be used with stemming OFF.	gra???ne US7654???

Boolean Searching

Position Connector

These operators allow you to specify where you want words to appear in relation to each other. This might be, for example, when you have two words like *protein* and *analysis*. You want to allow variations like *analysis of the protein*, or *protein analysis* or *analysis conducted on this protein*. In these 3 situations, a proximity of 3 would suffice, therefore a query of `protein $W3 analysis` would work well.

OPERATOR	USAGE & FUNCTION	EXAMPLES
\$Wn	Search words should be within n words of each other, in any order.	data \$W2 line ABST:("solar cell" \$W5 silicon)
\$PREn	Search words should be within n words of each other, in the order specified.	data \$PRE2 line ABST:("solar cell" \$PRE5 silicon)
\$WS	Search words should appear within the same sentence.	display \$WS HDMI

Fuzzy Logic

Fuzzy logic is good at allowing a designated amount of variation within any word. It's particularly useful in accounting for both misspellings (they do happen!) and variations in spelling of words in different countries. For example *sulphur* and *sulfur* are two alternate spellings for British and American English. If we use fuzzy logic limited to 2, it allows a difference of up to 2 characters, allowing both spellings to be returned.

OPERATOR	USAGE & FUNCTION	EXAMPLES
~N	Word can have a designated amount of differences e.g. either 2 characters can be changed, added, or taken away.	vehicle~2

The Value of an Intuitive Search

Breadth

Deciding how broad to make a search can depend on many factors. Think of it like trying to catch a particular kind of fish: cast your net wide and you'll be likely to catch the kind of fish you want, but also many that you don't want. On the other hand, cast your net small and you'll have less fish to sort through, but you might miss out on some that you want.

This is where searching moves out of the realm of logic and moves more toward intuition. Let's focus on language first. It's advisable to include as many variations of a technology name as possible, but not to make it too general.

For example:

CLMS:("prosthetic hip" OR "hip replacement" OR "titanium hip")

This is a query that will look for the various terms for a prosthetic hip, without generalising the technology. It also requires that the results will have the key term in them as we've asked for it, rather than those words individually. Looking aside from language, this query also requires that the key terms come from the claims of the patent, which means that the patent will have to mention the key term as an intrinsic part of the document, and not in passing as it might in the description.

An example of a search that might be too broad could be:

prosthetic joint hip titanium

This search would return any patent has all mentioned words, but it does not allow for alternatives for key terms, and it does not specify that the terms have to come from any particular section of the document. (Quick Tip: Allowing key words to come from the description of the patent could lead to patents being returned that do not have anything expressly to do with those terms).

There are many different factors that could widen or close the net/search. You might specify the position of certain words using proximity. You could allow variants of words to come back using wildcards or fuzzy logic. It's important to remember that there is not necessarily a good or bad level of breadth to a search. It is something that can be learned via trial and error for each search on an individual basis. The quality of your searches is likely to improve as you get more used to both searching, and the terminology used in the technology area.



Patent Terminology & Classifications

Terminology

PatSnap is a global platform and as such, we cover patents which vary in the language used within them. When searching, you might want to account for variances in spellings or terminology. If you make shoes, remember we Brits call them *“trainers”* whilst our cousins in the US call them *“sneakers”*. We spell it *“sulphur”* whilst the US spells it *“sulfur”*.

Another note is that it's wise to avoid generic language. If you're looking for a semiconductor manufacturing process, then using the word *“process”* will not specify your search particularly accurately, as you would expect that word to be returned in a lot of patents (Just to put this in context, PatSnap has roughly 17 million patents with the word *“process”* in them). Likewise, remember that one item can often be described by many words. If I'm looking for patents about cardboard boxes, I might also want to consider looking for paperboard containers, or corrugated paper formed into a cubic form for use in storage. There's always another way to describe something.

Classifications

These are perhaps one of the most useful aspects of conducting a patent search. If you're not familiar, a patent classification is like a library code. If you were to walk into a library today and ask a librarian to show you the section for, let's say, the horror genre, the librarian would give you a fairly simple code, which would take you to a fairly large portion of that library. Yet if you were to be more specific with a request and ask that librarian to take you to the section that's concerned with robotic werewolves in Latvia, the librarian would give you a much more specific, and likely longer code which takes you to a small section.

Classifications can be important to patent searches because they do not have the same flaws as keywords. It doesn't matter if I describe my skateboard patent as a *“skateboard”*, or a *“flat panel of wood with multiple attached wheels meant for recreational travel”*. That patent will still have the IPC (international patent classification) of A63C17/01. Patent writers will often use tricky and odd language to avoid you finding their document, but they cannot avoid an examiners decision to put it in a certain classification.

The question is, how do you know which classification to use? Well there are lots of ways to find out. To find my skateboard example, all I did was do a quick search of skateboard and look at the top classifications coming back. If you want to do a search on washing machine filters, do a quick search on *“washing machine”* and look at the top IPCs. You'll likely find the top IPC to be on the money, so to speak, and then when you do your next search you don't have to worry about whether to call it a washing machine, or a clothes washer, or a garment cleaning device. You can just use that IPC and move on to specifying the filter part of the query.

Titles, Abstracts and Claims

Which parts of the patent to search from

There are many sections in a patent document, which are used for different things. Titles give a very brief meaning to the document, abstracts give a paragraph long description of the overall purpose and intent of the invention described.

Often seen as the most important part of the patent, you have the claims. (Judge Giles Rich said *"the name of the game is the claim"*). The claims describe exactly what the patent is protecting, and defines the limit of what the patent owner has a right to exclude others from doing. The description is a full explanation of the invention. It will often include background information on the invention, how it is made, and its intended uses. However, this area doesn't define what is protected and will often mention words not specific to this technology.

There's a good reason PatSnap has a *"Title, Abstract, Claims"* field in its search: They are often the most important parts to search from, and don't include the description. Let's say I am protecting my new vacuum cleaner. My title will likely refer to some kind of suction cleaner, my abstract will describe the invention concisely, my claims will be carefully worded to protect exactly what I need, but then there's the description. I might mention *"this vacuum cleaner will work well on carpet, linoleum, tile and wooden flooring"*. I have just mentioned 3 words that are not specific to this space at all, and anyone doing a search on wood, carpet or linoleum is going to find my patent, which is not actually about those topics.

MEANING	QUERY
This will bring back any patents that have the term <i>"vacuum cleaner"</i> in the title.	TTL:(<i>"vacuum cleaner"</i>)
This will bring back any patents that have the term <i>"vacuum cleaner"</i> in the abstract.	ABST:(<i>"vacuum cleaner"</i>)
This will bring back any patents that have the term <i>"vacuum cleaner"</i> in the claims.	CLMS:(<i>"vacuum cleaner"</i>)
This will bring back any patents that have the term <i>"vacuum cleaner"</i> in the title, abstract, or claim.	TTL:(<i>"vacuum cleaner"</i>) OR ABST:(<i>"vacuum cleaner"</i>) OR CLMS:(<i>"vacuum cleaner"</i>)

Narrowing Your Search

Using Other Specifics

There are lots of other things we can specify when conducting a search for patents. Aspects of a patent such as the assignees, inventors, and dates are commonly used to define the sort of patents you are getting returned. Lets have a look at how you might use a couple of these:

ASSIGNEE

This field is most commonly used when researching the current and past activity of one company. You might know them as a competitor, a supplier, or a customer. Understanding how their IP portfolio looks in terms of their direction, strength in one technology space or another, and in comparison to another, can be very important.

You might also research into an organisation just for your own knowledge in similar searches. If you know a company is strong in an area you are interested in, then take a look at aspects such as the most common classifications that occur within their portfolio, and you'll then have a head-start when constructing a query into that area.

QUERY	MEANING
AN:(apple OR microsoft)	This will bring back any patents from assignees with either the word "apple" or "microsoft" within their names.
AN:((linkedin OR facebook) NOT myspace)	This will bring back any patents from assignees with either the word "linkedin" or "facebook" within their names, but none from assignees with the word "myspace" within their name.

Narrowing Your Search

DATE

Innovation by its definition is concerned with the new. So, it stands to reason that you might often want to limit your search to patents between certain years. For example, one common refinement that people will often make is to limit patents to the last 20 years to omit as many expired patents as possible. You might restrict the most recent date in an analysis to rid yourself of the fact that there is almost always a drop in activity in the last 2 years because of the publication lag. You might know that the innovation you are researching is a development only seen in the last 5 years. These are some of the many reasons why you might limit your search.

QUERY	MEANING
graphene AND APD:[20100101 to 20160405]	This will bring back any patents that have the word "graphene" somewhere in the text, which have also been applied for within the 1st January 2010 and 4th May 2016.
"chicken wings" AND APD:[20100101 to *]	This will bring back any patents that have been applied for from 1st January 2010 until now.

A Final Word

In Summary

There is no single correct way to conduct a patent search - combining many approaches and techniques is always advised. When you are doing this work, it is important to be creative and to not fall into too much of a routine as every search is unique.

Whilst this paper has covered many of the options in conducting a standard search, it is important to remember that there are other ways of searching too. PatSnap has capabilities like Image Search, Chemical Search, Semantic Search and 3D Landscaping, all of which are advantageous in the right situation. Using these tools in combination with a standard field search will yield a vast array of approaches for you to use.

PatSnap is constantly updating and releasing new features for searching and analysis. This means you will frequently have opportunities to update your searching method and workflow accordingly.

We hope this paper has been useful, and we would welcome any feedback, tips or tricks of your own. Contact us at: **clientservices@patsnap.com**



Where will you find your next opportunity?

About PatSnap

PatSnap is the leading provider of Intellectual Property Analytics, for analysing tech trends, driving innovation, market planning, competitor intelligence and maximising return on IP assets. Founded in 2007, PatSnap is used by R&D, business and IP professionals in thousands of commercial and not-for-profit organisations globally, including NASA, the Department of Defense, China Mobile, Goodyear and Vodafone. With a database of over 120 million patents, augmented by economic, legal and company data, we use proprietary machine learning technology to make IP work for all, including those with no IP experience. We have offices in London, Singapore and China.

Find out more: patsnap.com