The Mini-Guide to:
Patent Searching
for the Cost-Conscious Inventor

The Mini-Guide to:

Patent Searching for the Cost-Conscious Inventor

So you have an invention? A good general rule is: *Keep your idea secret until you can speak with a qualified patent attorney about the do's, don'ts and go-forward options.* Before seeing the patent lawyer, however, you might want to conduct some basic research to find out if your idea was documented previously by someone else. The Patent Office will only grant patents for ideas that are truly new.

Nowadays, basic patent research can be conducted from any on-line computer terminal. While a preliminary internet search is not a *substitute* for a professional patentability search, interpreted by an experienced patent attorney, it is nevertheless a smart time investment for any cost-conscious entrepreneur. The patent archives are filled with evidence of past inventive genius - much of which never achieved commercial success. While it will be disheartening if research reveals your invention was previously discovered by another, finding out "bad news" early in the process is usually much preferred to the alternative.

Be forewarned – Patent searching is tedious work. An organized approach is essential. Expect that patent research for most inventions will require about 10-20 hours of focused attention. The search process I use is carried out in three Search Phases, followed by an Analysis of the findings.

Search Phase 1. KEY WORD
Begin your patent search with a series of Key-Word queries in one or more of the free on-line patent databases. I most often use one of these patent search sites:
- Google Patents: *www.google.com/patents*
- US Patent Office: *www.uspto.gov*
- European Patent Office: *www.espacenet.com*

The goal of the Key-Word search is to find at least 3 or 4 examples of relevant prior art (more is better). "Prior art" is the term used by those in the patent community to describe technology that pre-existed a particular invention. A "relevant" prior art reference is one that is similar to your invention in its design or approach. When you find a relevant prior art reference, download (or print) a full text image and then set it aside. Both Google Patents and the European Patent Office websites offer handy .pdf download tools. Also try *www.pat2pdf.org* or *free.patentfetcher.com*. You will refer to the set-aside patent documents later, after all three Phases of the search process are finished.

Troubleshooting:
- If your Key-Word searches are not yielding at least 3 or 4 good prior art examples, then try searching for patents assigned to the leading companies in this technology space. (For example, if your invention is for a tennis shoe, try searching for patents assigned to Nike, Adidas, Reebok and so on.)
- Try to choose Key-Word terms that are particular to the field of your invention. You might discover in reading patents in the field that specialized words seem to be used over and over again. (For example, if your invention relates to the cable control for a bicycle shifter or brake, you might discover that the central wire is often referred to a "core element" or a "motion transmitter.") Include these special terms in your Key-Word searches. A good thesaurus may also help develop your Key-Word terms.

Once you have collected at least 3-4 examples of relevant prior art, move on to Phase 2: Classification Search.

Search Phase 2. CLASSIFICATION
Leaving behind the Key-Word search, it is now time to switch to an altogether different search method known as classification-based searching. Every U.S. patent document is categorized according to its technology using a primary class and subclass designation. In addition, most patents list notable cross-reference subclasses as well. Successful classification-based searching depends on finding the right subclass(es) in which to search. Sometimes, it can be challenging to find the right subclasses, but don't let that discourage you from trying your best.
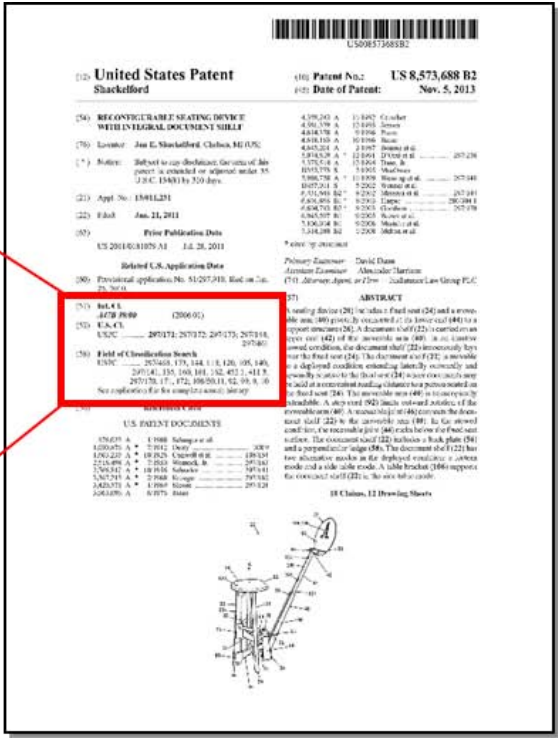
The U.S. Patent Office keeps a record of all the classes and their subclasses in something called a *Classification Manual.* Unfortunately, the Classification Manual can be difficult to navigate due to the often confusing terminology that the Patent Office uses to describe different kinds of technology. (For example, inventions relating to ink pens are usually placed in Class 401 "Coating Implements With Material Supply". Not many amateur searchers would recognize this description applies to ink pens!)

Make a Search List to keep an organized record of where to search. A blank Search List is provided at the end of this guide for your convenience.

Begin by populating your Search List with the classes/subclasses in the patents found during the Key-Word search (Phase 1). Patents granted since 1972 list their Class/Subclass designations on the cover page in Paragraph "(52)". (For pre-1972 patents, look-up the patent number on the USPTO website, and there you will find its primary class designation.) The patent shown below is classified in **"297/171"** (indicated by the bold face type), which is shorthand notation for Class 297, Subclass 171. It is cross-referenced in 297/172, 297/173, 297/144, and 297/461.

Paragraph "(58)" is interesting because it tells us the classes/subclasses in which the Patent Examiner searched. If the prior art reference is particularly close to your concept, you should include the Paragraph "(58)" classes/subclasses in your Search List also.

Using these Class/Subclass designations from Paragraphs (52) and (58), your Search List might start out looking something like this:

Search List

Class	Subclass	"P" Docs	"A" Docs	Notes
297	171	☐	☐	
297	172	☐	☐	
297	173	☐	☐	
297	144	☐	☐	
297	461	☐	☐	
297	119	☐	☐	
297	120	☐	☐	
297	105	☐	☐	
297	140	☐	☐	
297	141	☐	☐	
297	135	☐	☐	

Once you have filled in the Search List in with the Paragraphs (52) and (58) Class/Subclass designations from your Key-Word search results, visit *http://uspto.gov/web/patents/classification/*. Select "USPC" as the Classification System, and then enter the first class/subclass symbols (297/171, in this example) from your Search List into the box fields. Choose your preferred output format: HTML or PDF. In the Select Content box, click on "Schedule." Finally, click "Submit." You will be taken to an outline.

This outline is the portion of the US Patent Office's *Classification Manual* for the class you entered. A dot system preceding each subclass title is used to indicate hierarchy in this outline format. Look closely at the outline. Do you see a better subclass title that pertains to your idea? Clicking on a subclass number or title will take you to a Definitions page that usually contains useful information for patent searchers. To the far left are the letters "A" and "P." The "A" (set in a blue box) executes a search for all *published patent applications* referenced under this subclass. The "P" (set in a red box) executes a search for all *granted patents* referenced under this subclass. Both "A's" and "P's" are important areas to search for relevant prior art.

Click on the letter "P" to the left of the subclass you want to search. A chronological list of granted patent documents will appear, starting with the most recent. Read the title of each patent document. (Titles are not provided for patents granted before 1976. You will need to open each pre-1976 record in order to assess its relevance.) If the title suggests that this patent document might possibly be germane to your search, click on it. A record for that patent document will open in your browser. Review the text and images of this record. If this patent document qualifies as "relevant," download or print a full text image and set it aside with the others relevant patents you have found. Check the class/subclasses (listed on the cover page in Paragraphs (52) and (58)) of each newly found "relevant" prior art and *add any new subclasses to the Search List.*

Hopefully, during the course of your searching you will encounter some very close examples of prior art. (Although everyone secretly hopes to find nothing relevant, finding close examples is a good indicator that you are searching in the correct subclasses.) For the really close prior art that are granted patents (as opposed to published applications appearing under the "A" categories), there is a nifty trick you can try. Before exiting the record for the patent document in your browser, scroll down to the section titled "References Cited [Referenced By]" as shown below. The "References Cited" section provides handy hyperlinks to the prior art considered by the Patent Office to be relevant for this patent document. The "[Referenced By]" hyperlink will execute a search for all later patents that cite this one patent as prior art. Be sure to explore these areas for really close patents, as relevant prior art to this patent could be relevant to your invention too!

Repeat the above steps with the letter "A" patent documents for the same subclass. Each time you find a new relevant published patent application, print or save a copy and set it aside with the others relevant patents you have found. In the final Analysis phase, you will be carefully looking at all of the set-aside documents.

Working methodically through your Search List, review the "A" and "P" patent documents for each class/subclass. Keep in mind that your Search List will grow as you find new relevant documents and add their class/subclass designations. Be methodical. Stay organized. Take good notes and check off each subclass searched as you go.

Search List

Class	Subclass	"P" Docs	"A" Docs	Notes
297	171	☑	☑	Lot of good hits
297	172	☑	☑	Interesting Definitions …
297	173	☑	☐	Not relevant
297	144	☐	☐	
297	461	☐	☐	
297	119	☐	☐	
297	120	☐	☐	
297	105	☐	☐	
297	140	☐	☐	
297	141	☐	☐	
297	135	☑	☐	

Eventually you will get through all of the subclasses without adding any new ones. Then it is time to move on to Phase 3 – the internet search.

Search Phase 3. INTERNET

This next Search Phase steps outside the patent literature and looks for examples of prior art in the general (non-patent) literature. This will include information gleaned from websites, product literature, chat forums, blog postings, and so forth.

Open your favorite internet search engine (Bing, Google, etc.) and run Key-Word searches using all the best terms you can think of. By now, you may have discovered certain specialized words that seem to be common in the field (i.e., "terms of art"); be sure to include these specialized terms in your research. You are looking for anything that might qualify as relevant prior art. Again, download or print each relevant example of prior art and set it aside.

ANALYZE THE PRIOR ART

Once all three Search Phases are complete, the relevant prior art you have found must be methodically compared to your invention. Patent protection, if available, will be found in the differences between your concept and the entire pool of prior art – provided those differences enable some unexpected advantage or new result. Sometimes, differences are found in the combining of two or more features that have never before coexisted in the same object or system. To do a proper job, your comparisons must be unbiased and soberly analytical; discipline yourself to identify every possible problem prior art.

Congratulations! Your preliminary patent search is done. Now might be the right time to talk with a qualified patent lawyer about where to go from here. Filing a provisional patent application is one option if there appears to be key differences between your concept and the prior art. Find a patent lawyer that wants to understand your business objectives (i.e., how you intend to benefit from the invention). A good patent attorney will recommend a course of action tailored to help you reach your objectives in the most economical and responsible way possible.

WARNING: Preliminary patent searches of the type described in this Guide should not be expected to provide a definitive statement of the prior art that a typical U.S. Patent Office examiner will consider relevant to your invention. Often, prior art unfavorable to patentability can be uncovered through this kind of self-directed research. A professional patentability search, interpreted by an experienced patent attorney, is strongly recommended prior to filing a regular (non-provisional) patent application. Remember also – even though your invention may be patentable, there could exist a dominant earlier patent that poses an infringement risk. Be sure to seek out qualified legal representation for your commercial endeavors.

Brought to you by Endurance Law Group PLC, specialists in intellectual property.
Visit us on the web at www.endurancelaw.com

ABOUT THE AUTHOR

Jon E. Shackelford is a registered U.S. Patent Attorney with more than 25 years' experience counseling inventors.

Jon E. Shackelford

Contact Jon at **517.879.0241** or **jshack@endurancelaw.com**.

Note: *This "Mini" Guide is provided for educational purposes only, and must not to be considered legal advice.*

ENDURANCE
Registered U.S. Patent Attorneys **LAW GROUP**

180 West Michigan Ave, Suite 501, Jackson, MI 49201
endurancelaw.com

An IP Haiku:

Those eager to own
Their inventions, brands and art
Need Endurance Law.

ENDURANCE
Registered U.S. Patent Attorneys   **LAW GROUP**

Search List

Title of Invention: _____

Search Date: _____

Searched By: _____

Class	Subclass	"P" Docs	"A" Docs	Notes
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	