

6.5-Step U.S. Patent Search Strategy Guide*

U.S. Patent Search Assistance

Patent and Trademark Resource Center (PTRC) staff are available to provide training on U.S. patent search processes and research tools including **PubEAST**, **PubWEST**,[†] and the **USPTO website**. Additional information is available through the USPTO website at http://www.uspto.gov, by phone at 1-800-786-9199, or by e-mail at usptoinfo@uspto.gov. For legal matters, contact an attorney or agent registered to practice before the USPTO at http://des.uspto.gov/OEDCI/.

Preliminary U.S. Patent Search vs. Comprehensive Prior Art Search

This guide provides a strategy for searching U.S. patents to locate and evaluate relevant prior art (earlier patents and published patent applications). A comprehensive search would also include foreign patents and non-patent literature (newspapers, magazines, dissertations, conference proceedings, and websites). PTRC staff can provide training on how to locate these additional resources.

Search Preparation and Documentation

Plan on spending a few hours learning the search process and additional hours for searching and evaluating results. The length of time depends on the complexity of the invention. Careful recording of the search process, including the databases used, date and time of search, classes searched, and patent and application numbers retrieved, is an important part of effective searching.

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STEP 1: Identify Keywords that Describe the Invention

Begin by writing down a concise, accurate description of the invention. Avoid overly broad and generic terms such as "device," "process" or "system." Make a list of important keywords and technical terms in the description. Use the following questions to help identify keywords and concepts.

- What is the purpose of the invention? Is it a utilitarian device or an ornamental design?[‡]
- Is the invention a process a way of making something or performing a function or is it a product?
- What is the invention made of? What is the physical composition of the invention?
- How is the invention used?
- What are keywords and technical terms that describe the nature of the invention? Consult a technical dictionary or thesaurus to help find the appropriate terms.

It may be helpful to order terms according to decreasing scope. For example:

Vehicle → Automobile → Internal Combustion Engine → Fuel Injection → Injection Nozzle

^{*} This Guide is intended to minimize the need to consult the U.S. Patent Classification System (USPC) that is being phased out and replaced by the Cooperative Patent Classification System (CPC). It incorporates CPC tools into the 7-Step U.S. Patent Search Strategy and streamlines the search process.

[†] **PubEAST** and **PubWEST** are available at Patent and Trademark Resource Center libraries: http://www.uspto.gov/products/library/ptdl/index.isp.

[‡] Since there are currently no plans to reclassify U.S. design patents under the CPC system, this strategy should only be used for searching prior art found in utility patents and utility patent applications. For an explanation of the difference between design patents and utility patents, see: http://www.uspto.gov/web/offices/pac/mpep/s1502.html. For a guide to searching design patents and applications, consult the original 7-Step U.S. Patent Search Strategy Guide, which this guide is based on, at http://www.lindahall.org/7steppatents.pdf.



STEP 2: Find Relevant Classification Codes

Search for relevant keywords, phrases and technical terms in the Cooperative Patent Classification System. You can enter a maximum of ten keywords in the search field. You can combine them with the operators "and," "or," and "not," or use wildcards such as "*," "?," and "#." Classification codes and their corresponding titles are listed in order of relevance in the search results (see Figure 1). Review the titles and make a list of the most relevant codes.



Figure 1

Currently this feature is only available on the European Patent Office's Cooperative Patent Classification search page (A version of it will be available on the USPTO's website by January 2015): http://worldwide.espacenet.com/classification?locale=en_EP.

If no results are found in your search:

- The search term may be too specific; try using a broader term. Example: try "microprocessor" instead of "16-bit processor"
- The search term may be too specialized; try using a more general synonym. Example: try "bicycle wheel wrench" instead of "cassette lockring wrench"
- The search term may be jargon, a layman's term, or a figure of speech; try the technical or scientific equivalent. Example: try "Juglans regia" instead of walnut

STEP 3: Verify Relevancy of Classification Symbols

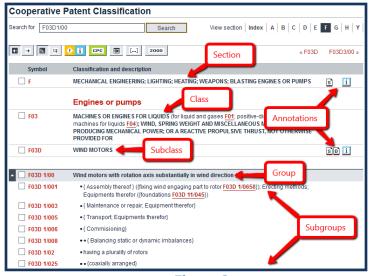


Figure 2

In order to verify their relevancy, search for each of the classification codes listed in Step 2 in the Cooperative Patent Classification System. Class schedules are arranged in outline format. Scan the entire class schedule for each code, starting with the initial section and paying attention to the classes, subclasses and groups. Read the class annotations for each subclass to establish the scope of the relevant classifications (see Figure 2). The annotations include important definitions, rules, and cross-references for further searching.

STEP 4: Identify Subgroups

Before retrieving full-text documents it is important to identify the most appropriate indented subgroups for each group remaining in the list. The scope of a subgroup is limited by the scope of all hierarchically higher classes and

groups. In other words, the invention will only belong in a subgroup if it also belongs in all the parent classes and groups of that subgroup. It is common for an invention to belong to multiple groups or subgroups within the same class, so care should be taken to review each.





ccess Full-Text

STEP 5: Search Issued Patents and Published Applications

Once the relevant subgroup classifications have been identified, retrieve and review all the patents from 1790 to the present and all published applications from 2001 to the present for each classification that is to be searched (see Figure 3).



Issued patents and published applications can be searched and viewed using:

Figure 3

- USPTO website: Issued Patents (PatFT) and Published Applications (AppFT) at http://www.uspto.gov/patft/
- PubWEST (Available at PTRC Libraries): US Patents Full-Text and US Pre-Grant Publication databases (Patent and application search can be combined and entire documents can be printed easily)

R

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STEP 6: Review Patent and Application Documents

What is claimed is:

1. A direct drive wind turbine comprising: a frame enclosed by a housing; a shaft rotatably supported by the frame; a magnet array arranged circumferentially about a transformer array within said housing and about said shaft to produce electricity; a blade assembly attached to said shaft, each blade being mounted generally perpendicular to the shaft, having a first end coupled to the shaft by a connection and a neutral position facing into the wind; tensioning means acting on the blade at said connection; and said tensioning means having a resistance to rotation of said blade away from the neutral position and out of the wind.

2. The direct drive wind turbine of claim 1 wherein one or more of the magnets in the array are angled to reduce cogging torque.

3. The direct drive wind turbine of claim 1 wherein the blade assembly further comprises a blade hub attached to said shaft having a plurality of blade.

Figure 4

Review the complete claims, specifications and drawings of closely related patents and published applications. Remember, the claims constitute the boundaries of legal property rights given to the patent holder (see Figure 4).

STEP 7: References & Field of Search

Check the references cited by the patent documents. Also make sure to check "Referenced By" references, i.e. recent issued patents and patent applications that cite the relevant document in hand. Take note of the additional classifications in the "Current U.S. Class," "Current CPC Class" and "Field of Search" sections of the full-text documents. Those may lead to additional prior art not found in the first iteration of the search process (see Figure 5).

Note: the U.S. classification codes noted in "Current U.S. Class" and "Field of Search" will be phased out and replaced by CPC codes by January 2015. Refer to the original 7-Step U.S. Patent Search Strategy Guide at http://www.lindahall.org/7steppatents.pdf for instructions on searching with the U.S. Patent Classification System.

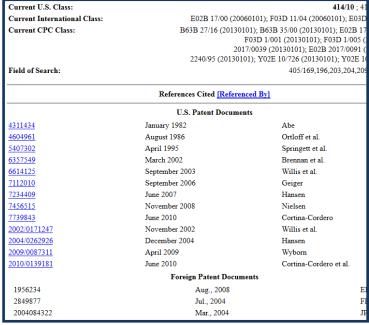
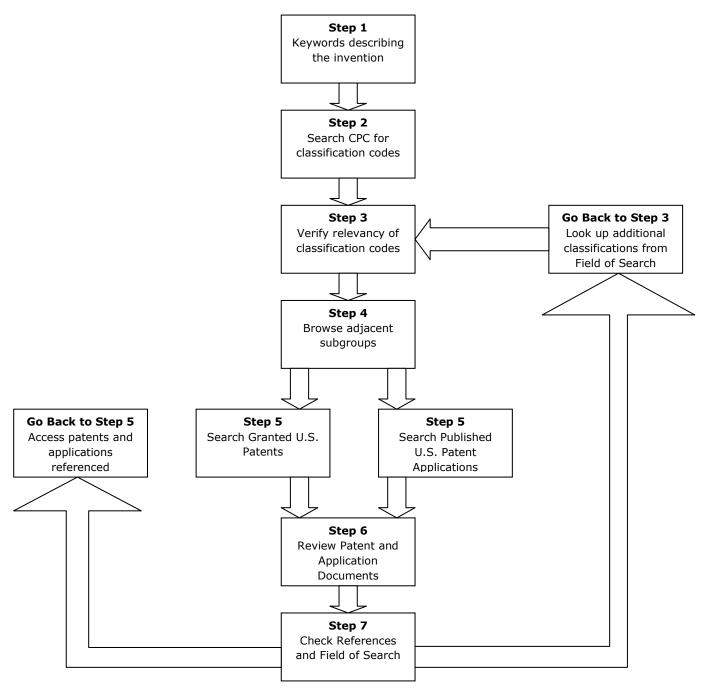


Figure 5



Preliminary U.S. Patent Search Summary



Business Planning & Marketing

PTRC libraries can provide additional resources detailing the business planning process, licensing, and marketing of inventions. Also beware of fraudulent invention promotion firms. See http://www.uspto.gov/web/offices/com/iip/complaints.htm.

Disclaimer: The information contained in this guide is not intended as a substitute for professional legal advice. Use it as a general guide for conducting a preliminary patent search. The USPTO recommends that inventors consult a registered patent agent or attorney prior to filing an application.