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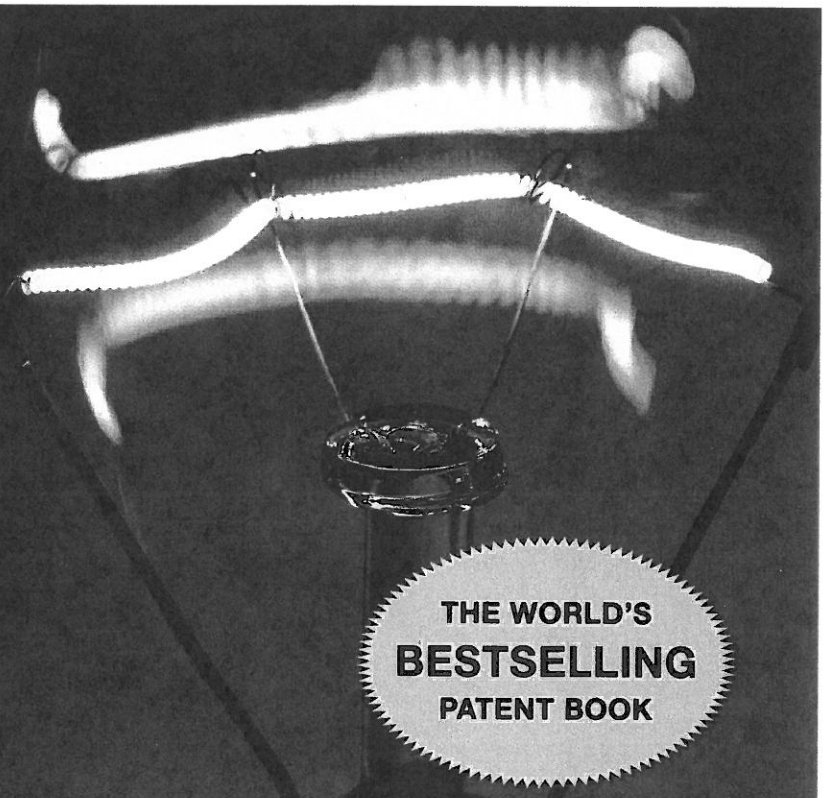

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PATENT DOCUMENT KIND CODES

With new number formats as they appear on documents published on or after January 2, 2001. For a full explanation of document kind codes see WIPO Standard ST.16, available at http://www.wipo.int/scit/en.

New Number Format

US 6,654,321 B1

country code | document number | document code

Document Type	Before Jan. 2, 2001	On or After Jan. 2, 2001	
	Number Format	Code	Number Format
Utility Patents			
Issued patent (no pre-grant publication)	5,123,456	B1	US 6,654,321 B1
Issued patent (with pre-grant publication)	NA	B2	US 6,654,322 B2
Application (first publication)	NA	A1	US 2001/0001111 A1
Second or subsequent republication of an application	NA	A2	US 2001/0002222 A2
Correction of a published application	NA	A9	US 2001/0003333 A9
Plant Patents			
Issued patent (no pre-grant publication)	Plant 11,000	P2	US PP12,345 P2
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Design Patents	Des. 456,789	S	US D654,321 S
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Reexaminations			
Reexamination certificate issued from first reexamination of a patent (utility, plant, design or reissue)	B1 5,123,456 B1 Plant 11,000 B1 Des. 123,456 B1 RE12,345	C1	US 6,654,321 C1 US PP12,345 C1 US D654,321 C1 US RE12,345 C1
Reexamination certificate issued from second reexamination of a patent	B2 5,123,456 etc.	C2	US 6,654,321 C2 etc.
Reexamination certificate issued from third reexamination of a patent	B3 5,123,456 etc.	C3	US 6,654,321 C3 etc.
Other Patent Documents			
Statutory invention registration (SIR) documents	H1,234	H1	US H2345 H

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Fig. 6D(d)—Patent Document Kind Codes

Note from Fig. 6B that the napkin-shaping ring of the invention has an annular (ring-shaped) outer member with an inwardly projecting leg. The leg has flared-back arms at its free end. When a folded napkin is drawn through the ring, tip first, the arms and annular member will shape the napkin between them in an attractive manner, as indicated in Fig. 6B(c).

Of the four previous patents cited, let's assume that only Gabel and Le Sueur are of real relevance. Gabel, a patent from 1930, shows a curtain folder comprising a bent sheet-metal member. A curtain is folded slightly and is drawn through the folder that completes the folding so that the curtain can be ironed when it is drawn out of the folder. Le Sueur, a patent from 1976, shows a napkin ring with a magnetized area for holding the letters of the name of a user.

Now, as part of analyzing this sample search report, we'll use the master flowchart reproduced below, as Fig. 6E. If any part of this chart confuses you, reread the part of Chapter 5 that explains each box in detail.

Okay, now let's work our way through the chart:

Box A: Millie's napkin-shaping ring can be classified within a statutory class as an article (or even a machine, since it shapes napkins).

Box B: It clearly has usefulness, since it provides a way for unskilled hostesses or hosts to give their napkins an attractive, uniform shape.

Box C: We must now ask whether the invention is novel—that is, physically different from any single reference. Clearly it's different from Le Sueur because of its inwardly extending leg 14. Also, it's different from Gabel because, comparing it with Gabel's Fig. 6, it's rounder and it has a complete outer ring with an inwardly extending leg, rather than a folded piece of sheet metal. It's important to compile a list of the differences (novel features) that the invention has over the prior-art references, not the differences of the references over your invention.

Box D: The question we must now ask is, "Do the novel features (the roundness of the ring, the inwardly extending leg, and the flared-back arms) provide any new and unexpected results?" After carefully comparing Gabel with Millie's invention, we can answer with a resounding "Yes!" Note that Gabel states, in her column 2, lines 62 to 66, that the strip of cloth is first partially folded along its side edge and then it is placed in the folder. In contrast, Millie's shaping ring, because of its roundness and leg, can shape a totally unfolded napkin—see Millie's Figs. 3 and 4. This is a distinct advantage, since Millie's shaper does all of the work automatically—the user does not have to specially fold the napkin. While not an earthshaking development or advance, clearly Millie's ring does provide a new result and one that is unexpected, since neither Gabel, Le Sueur, nor any other reference teaches that a napkin ring can be used to shape an unfolded napkin. Thus we take the solid-line "Yes" output of Box D to Box E.

Box E: Although not mandatory, we next check the secondary factors (1 to 22) listed in Boxes E, F, and G.

Reading through these factors, we find first that factor 2 in Box E applies—that is, the invention solves a problem (the inability of most persons to quickly and neatly fold napkins so that they have an attractive shape) that was never before even recognized. Also, we can provide affirmative answers to factors 8 and 11, since the invention provides an advantage that was never before appreciated and it solves a long-felt, but unsolved need—the need of unskilled persons to shape napkins quickly and gracefully (long felt by the more fastidious of those who hate paper napkins, at least).

Boxes F and G: Since two references are present, and each shows some part of Millie's invention, we have to answer "Yes" to Box F and proceed to Box G to consider the possible effect that a combination of these would have on the question of obviousness ("combinatory unobviousness"). In Box G we see that factors 13, 15, 18, 19, and 21 can reasonably be argued as relevant to Millie's invention. The invention has synergism (factor 21), since the results (automatic napkin folding) are greater than the sum of the references; the combination of the two references is not suggested (factor 13) by the references themselves; and even if the two references were combined, Millie's inward leg would not be shown (factor 15). The references are complete and fully functional in themselves, and hence teach by implication that they should not be combined (factor 18). And it would be awkward, requiring redesign and tooling, to combine

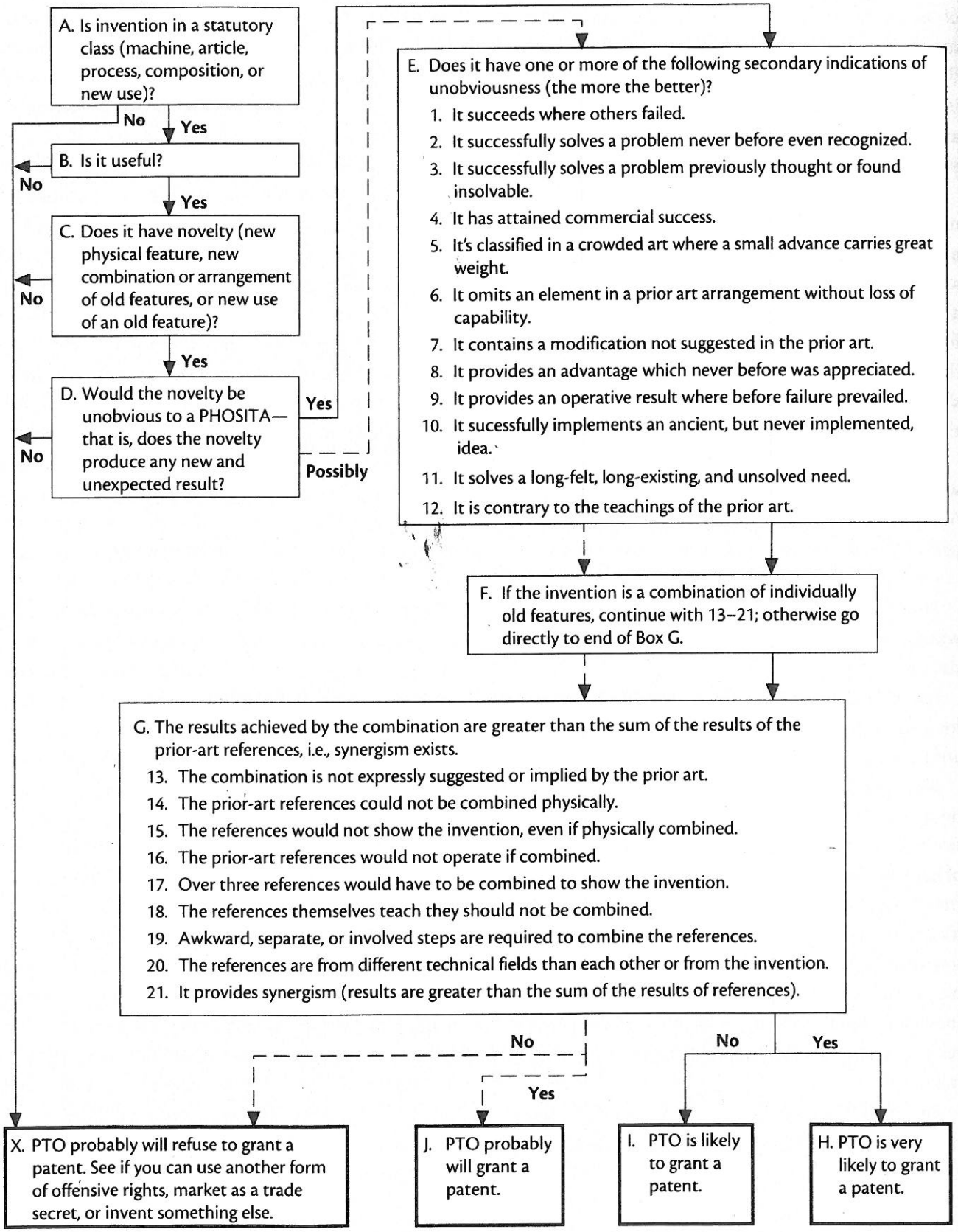

Fig. 6E—Patentability Flowchart

the references (factor 19). Thus we can with conviction state that several secondary factors are present, so we take the solid-line "Yes" output of Box G to Box H.

Next, **(Box H)** we see that the PTO is very likely to grant a patent, and our determination on patentability is accordingly positive.

In fact, this exercise is a real case: An examiner initially rejected an application for the napkin-shaping ring as unpatentable over Gabel and Le Sueur. However, he agreed to grant a patent (U.S. Pat. No. 4,420,102) after an argument was filed, forcefully stating the above considerations.

TIP

Although we have analyzed the search report to determine whether Millie's invention was patentable, it's important to remember that a weak patent isn't much better than no patent. So in addition to reaching a decision on patentability, you should also walk the extra mile to determine whether your patent is likely to be of broad enough scope to make it economically worthwhile.

Note that we have done our own patentability evaluation—the four-part list, above—and that the search report of Fig. 6C didn't include an opinion on patentability. There are several reasons for this.

First, if your searcher is a layperson (not a patent attorney or agent), the searcher is not licensed to give opinions on patentability since this constitutes the practice of law.

Second, even if your searcher is an attorney or agent, the searcher usually won't provide an opinion on patentability because most searchers are used to working for other patent attorneys who like to form their own opinions on patentability for their clients.

Third, if the searcher's opinion on patentability is negative, a negative written opinion might be damaging to your case if you do get a patent, sue to enforce it, and the opinion is used as evidence that your patent is invalid. This would occur, for example, if your court adversary (the defendant infringer) obtains a copy of the opinion by pretrial discovery (depositions and interrogatories), shows it to the judge, and argues that since your own search came up with a negative result, this militates against the validity of your patent. However, a negative written opinion can be "worked" in court—that is, distinguished, explained, rebutted, etc.—so if you want the searcher's opinion on patentability in addition to the search, most patent attorney/agent searchers will be glad to give it to you without extra charge, or for a slight additional cost of probably not more than $300 to $600.

Fourth, armed with the knowledge you've gained from Chapter 5, you should be able to form your own opinion on patentability by now; the exercise will be insightful to your invention.

Fifth, note that there's no certainty in the law. No one can ever say for certain that you'll be able to get a patent before you get it since no search can cover pending patent applications, and human responses (how your examiner will react) are very unpredictable. So take any prediction with a grain of salt.

In any case, don't hesitate to ask any questions about the searcher's practices in advance, and be sure to specify exactly what you want in your search. It's your money and you're entitled to buy or contract for whatever services you desire.

H. Computer Searching

Although computer searching is improving, you should do both types of computer searches (Keyword and Classification) to supplement each other because each has some deficiencies. If you do a Classification search you may use the wrong classification and if you do a Keyword search you may not search with the same keywords as the patent attorneys who wrote the relevant patents. Also, patents in some computer search databases go back to only 1976. This is not a problem for most high-tech inventions where there is no need to search prior to 1971. Despite the drawbacks noted, computer searching does have some advantages (more secure database, less fatigue, faster searching, etc.) that make it uniquely useful.

Keyword searches can be done for combinations of keywords in the texts—specification, claims, abstract, or title—of prior patents. To make a

computer Keyword (or Boolean) search, you select a combination of keywords to describe your invention, e.g., "bicycle" and "carbon fiber alloy." The computer will look through its data bank for any patent that contains all of these words. When it finds any patents that contain your keywords in the combination you specified in your search request, it will display these patents, regardless of their classifications.

If the computer reports too much data for you to conveniently examine—say it's found 200 patents with your words in combination—you should first look at one or two of the patents to see if your invention is shown in an earlier patent (that is—your invention has been "knocked out"). If so, your search is over. If not, you'll need to narrow your search. This is easy. Simply add one or more additional keywords, say "frame," or some details of the alloy, and redo the search with these increased keywords until you've few enough patents to manually review conveniently. Also, you can narrow the search by using narrower (more specific) keywords.

If you get extremely specific, the computer is likely to report no patents, or just one or two. If this occurs, you'll need to broaden your search. This is just as easy. Merely remove one or more keywords, or broaden your present keywords, and redo the search until you get back what you want. For example, you can eliminate "bicycle" or substitute "frame" for "bicycle" to broaden the search. In summary, to broaden your search (pull out more prior art), you should use fewer keywords, and to narrow your search (pull out less prior art), you should use more keywords.

To make a Classification search, you first have to find the appropriate Classes and Subclasses where the concepts of your invention might be found. After you get the appropriate Classes and Subclasses, you have to browse through every patent in each Subclass to search for the possibly novel concepts of your invention. All of this can be done on a computer terminal.

The data that you search by computer—that is, the texts and drawing of patents—is available for free from the PTO and from several online sites. The latter are private companies that in turn get this data in the form of machine-readable tapes as a byproduct of the patent printing process from the Government Printing Office, which prints all patents. As of this writing, one free service—Google Patents—has used optical character recognition (OCR) to incorporate the data from all patents since 1836 into its data bank (although the U.S. first granted patents in 1790, the patent numbering system did not begin until 1836). Google's patents are pretty accurate and they do provide the first way to search all patents on the Internet. Presently, the PTO's examiners use computer searching (the EAST search system) almost exclusively. As a result, we're getting better examinations and stronger patents.

1. Available Computer Search Resources

Now that you get the general idea, how do you go about making a computer search? There are two ways to gain access to a computer search service's data bank:

- Via a personal computer with Internet access—the PTO's and the EPO's websites are completely free and for others you'll have to make a suitable agreement.
- Via an existing terminal that is dedicated to patent searching, such as at a large company, law firm, the PubWEST system at a PTRC, or the EAST system at the PTO.

On the Internet the PTO itself provides free Keyword searches in bibliographic format (name, title, assignee, city, state, date, etc.) back to 1976 and by patent number and current classification back to 1790. To use this service, visit www.patft.uspto.gov.

You can use the "Quick Search" or "Advanced Search" links to make the search using the instructions to follow. If you simply want to look up a patent by its number, go to the "Patent Number Search" link.

The EPO (https://worldwide.espacenet.com) provides Quick and Advanced search capabilities in three languages (English, German, and French), but for patentability searches only the Quick search in English is necessary. Searches can be made in four databases: Worldwide (which covers European countries, EPO, and U.S. patents); Japanese; EP (EPO patents); or WIPO (World Intellectual Patent Organization, which administers the PCT databases. (See Chapter 12 for more on the PCT.) To search all databases, search just the Worldwide and Japanese databases). To make a search, type the appropriate keyword combinations

in the keyword box with a suitable connector—for example, bicycle AND plastic OR wood. The dates of the databases vary; see the site for more information.

- Google Patents (www.google.com/patents) is an excellent resource that includes U.S. patents back to the beginning.
- ArchPatent.com (www.archpatent.com) is an excellent site with powerful search and filtering capabilities and intuitive search interfaces. You can search by keywords, classification, and a combination of the two.
- FreePatentsOnline.com (www.freepatentsonline.com) is another free search site that can search U.S. patents and patent applications back to the beginning. It has excellent search limiting capabilities.
- Patents.com (www.patents.com) is a free search site that searches U.S. patents and patent applications and European patents back to 1975.
- Here are several fee-based organizations that offer computer searching of patent records. Several of the "for fee" databases also provide foreign patent information.
  - Thomson Reuters (info.thomsoninnovation.com), a commercial database of U.S. patents searchable from 1836 to the present. It also includes Japanese and International PCT patent applications from 1983, European patents from 1988, and the *Official Gazette (Patents)*. The U.S. patents before 1971 have been entered into the database by Optical Character Recognition, so expect some errors.
  - LexPat (www.lexisnexis.com), a commercial database of U.S. patents searchable from 1971 to the present. In addition, the LEXPAT library offers extensive prior-art searching capability of technical journals and magazines.
  - Orbit (www.qpat.com), a database that includes U.S. patents searchable from 1974 to the present and full-text European A (1987–present) and B (1991–present) patents.
  - Washpat (www.washpat.com) uses proprietary search tools and delivers search results in about a week.

2. Vocabulary Associated With Computer Searches

If you're going to do any patent searching, you should learn these terms now:

- A **File** is the actual name of the patent search database provided by the service.
- A **Record** is a portion of a file; the term is used to designate a single reference, usually a patent within a database.
- A **Field** is a portion of a record, such as a patent's title, the names of the inventors, its filing date, its patent number, its claims, etc.
- A **Term** is a group or, in computerese, a "string," of characters within a field—for example, the inventor's surname, one word of the title of a patent, etc., are terms.
- A **Command** is an instruction or directive to the search system that tells it to perform a function. For example, "Search" might be a command to tell a system to look for some key search words in its database.
- **Keywords** or a **Search Terms** are the word combination that are actually searched. "Bicycle" and "carbon fiber alloy" are the keywords for our example above.
- A **Qualifier** is a symbol that is used to limit a search or the information that the search displays for your use. Normally no qualifier would be used in patentability searches, but if you're looking for a patent to a certain inventor, you could add a qualifier that limits the search to the field of the patentee's name.
- A **Wild Card Symbol** is an ending that is used in lieu of a word's normal ending in order to broaden a keyword. The wild card cuts off immaterial endings so that only word roots are searched. For example, if we were searching Millie's annular napkin-shaping ring, we would want our search to include the words "annular" and "annulus." Thus, instead of using both keywords and the Connector Symbol "or" (see below), we might search for "annul*" where "*" was a wild card symbol that tells the computer to look for any word with the root "annul" and any ending.

- **Connector Words** are those (such as "or," "and," and "not") that tell the computer to look for certain defined logical combinations of keywords. For instance, if you issued a command telling the computer to search for "annulus or ring and napkin," the computer would recognize that "or" and "and" were connector words and would search for patents with the words "annulus" and "napkin," or "ring" and "napkin," in combination. (Note that when you get to writing your claims (Chapter 9), "or" and "not" are generally forbidden.)
- **Proximity Symbols** are those that tell the computer to look for specified keywords, provided they are not more than a certain number of terms apart. Thus, if you told the computer to search for "napkin w/5 shaping" it would look for any patent that contained the words "napkin" and "shaping" within five words of each other, the symbol "w/5" meaning "within five words of." If no proximity symbol is used and the words are placed adjacent to each other—such as "napkin shaping"—the computer will pull out only those patents that contain these two words adjacent to each other in the order given. However, if a connector word is used—such as "napkin and shaping"—the computer will pull out any patent with both of these words, no matter where they are in the patent and no matter in what order they appear.

3. Think of Alternative Search Terms and Get the Classification

No matter what search system you use, be prepared with a well-thought-out group of keywords and all possible synonyms or equivalents. Use a thesaurus or a visual dictionary to get synonyms. Thus, to search for Millie's napkin-shaping ring, in addition to the obvious keywords "ring," "annular," "napkin," and "shaping," think of other terms from the same and analogous fields. In addition to napkin, you could use "cloth." Or, in addition to shaping, you could use "folding" or "bending." In addition to "annulus" or "ring," you could try "device," etc. Also compile a list of all possible Class and Subclass combinations where patents on developments similar to your invention might be classified. To obtain relevant class-subclass combinations, you'll need to use the *Classification Index*, *Manual*, and *Definitions* as explained in Section I, part 2a, below.

4. Using the Computer

From here on, simply follow the computer's instructions for gaining access to and using the database. Write down the number, Inventor, and date of all relevant patents without any consideration of obviousness. Then analyze them later, at your leisure.

5. Using Computer-Generated References to Work Backward and Forward

After making a computer search and obtaining a group of relevant references generated by the computer, it's possible (and very easy) to use these references to work back and forward and obtain additional, earlier relevant references that antedate the computer's database. How? To work backward, simply look at and/or order each of the "References Cited," which are listed on the abstract page (see Fig. 6D(c)) or at the end of the patent in each computer-selected patent. These references (usually patents) were cited by the PTO during prosecution of the patent and are usually very relevant. You can even

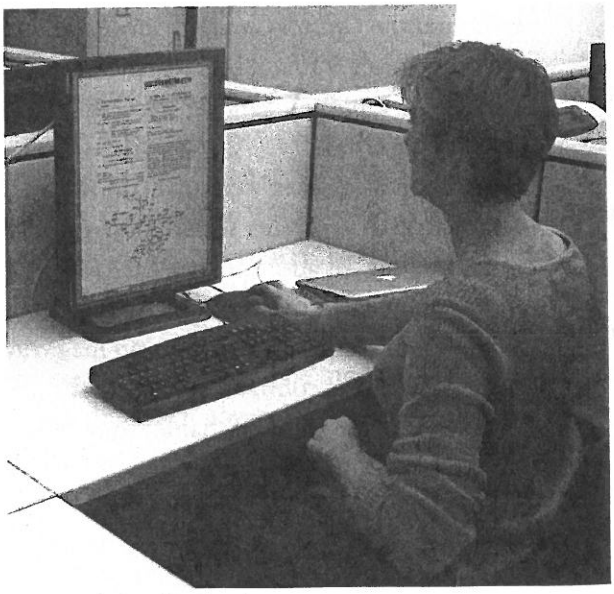

Photo by Randy Rabin, Searcher

Searching at an EAST terminal at the PTO

look up the "References Cited" in the additional references to go back even earlier, thereby making a "tree" of references. However, the PTO didn't list the "References Cited" before the 1950s.

Another way to work backward, using a hybrid approach, is to find a patent close to your invention using the computer and then find the U.S. Class of the patent (it's 40/21R in Fig. 6D(c)) and then search all patents in this class at a PTRC, or order a list and search them online back to 1971 and in a PTRC for earlier patents.

To work forward, look up any close patent on the EAST system and check the "Patents which cite this patent" for each close patent.

I. Do-It-Yourself Searching

Searches should be made primarily in patent databases, rather than in general reference or scientific files, because there are about ten times as many devices and processes shown in the patent files as in textbooks, magazines, etc. That's because commercial practicability is not a requirement for patentability. All PTO examiners make most of their searches in the patent files for these reasons, so you should also. However, if you have access to a good nonpatent data bank, such as a good technical library in the field of your invention, you can use this as a supplement or alternative to your search of the patent files.

1. Getting Started at the PTO

The best place to make a search of the patent files is in the PTO unless you have access to the files of a large company that specializes in your field. This is because the PTO's search facilities have all U.S. patents arranged on computers (the PTO's EAST system) in an easily searchable manner by classification or keyword. For example, all patents that show bicycle derailleurs can be located by searching the "derailleur" subclass or searching this keyword. All patents that show flip-flop circuits can be located by searching the "flip-flop" subclass or by searching this keyword. All patents to diuretic drug compositions can be located similarly, etc. The PTO no longer keeps foreign patents and literature on paper classified along with U.S. patents according to subject matter, however, but you still should search these areas. Always keep in mind that foreign patents are valid prior art in the U.S.

Here are a few things to know about the PTO:

The PTO is technically part of the Department of Commerce (headquartered in Washington) but operates in an almost autonomous fashion.

The PTO employs about 5,500 examiners, all of whom have technical undergraduate degrees in such fields as electrical engineering, chemistry, or physics. Many examiners are also attorneys. The PTO also has about an equal number of clerical, supervisory, and support personnel. The Commissioner for Patents is appointed by the president, and most of the higher officials of the PTO have to be approved by Congress. Most patent examiners are well paid; a journeyman examiner (ten years' experience) usually makes $75,000 to $125,000 a year.

Assuming you do go to the PTO, get a pass and go to the public search room to use the EAST system.

The PTO gives classes on using the EAST system periodically, so it's best to take one of these classes before you start. However it is possible to make a search on EAST without formal instruction. If you need help with your search or the EAST system, you can ask any of the search assistants in the search room. For help with the search (not the EAST system) you can also ask an examiner in the actual examining division that is in charge of your art area. E.g., if you've invented a bicycle, you may go a "bicycle examiner" for assistance. You won't be endangering the security of your invention if you ask any of these people about your search and give them all the details of your invention. They see dozens of new inventions every week, are quite used to helping searchers and others, and would be fired if they ever stole an invention. Also, the PTO's rules forbid employees from filing patent applications. In theory a PTO employee could communicate an invention to a friend or relative who could file, but it's very unlikely to occur because such a relationship could be easily discovered during patent litigation.

2. How to Do the Search—EAST Search at PTO and Internet Searches on PTO's Site

The PTO's EAST (Examiner Automated Search Tool) is available only at the PTO's Public Search Facility at Madison East, 1st Floor, 600 Dulany St., Alexandria, VA 22314, tel. 571-272-3275. Hours are Monday to Friday 8 a.m. to 8 p.m. As stated, EAST requires some training and skill to use. The PTO has about 250 EAST terminals in the public search room and gives free four-hour training sessions once per month. Also, often a user at an adjacent terminal or a search assistant can help a new user with the basics to get the new user started.

EAST is the best search tool because it can perform keyword or classification searches. In terms of speed, it is superior to a paper search because you can flip through patents displayed on the computer monitor faster than you can with the actual paper copies. You can also use EAST to do "forward" searches—that is, if a relevant patent is found, EAST can find and search through all later-issued patents in which the relevant patent is cited (referred to) as a prior-art reference. Further, it can do "backward" searches—that is, it can search through all previously issued patents that are cited as prior art in the relevant patent. You can also use EAST to search European and Japanese patents.

The PTO does not charge to use EAST, but it does charge for printing out copies of patents. The PTO began issuing patents in July 1790, but in 1836 lost all of these early patents in a fire. Some of those 10,000 patents, which were not numbered, have been recovered and are now known as the "X" patents. After the fire, the PTO started numbering patents (Patent 1 issued in July 1836). As of 2014 the PTO had issued over 8,600,000 utility patents.

Explanations for EAST are not provided because EAST generally requires hands-on training and will be used by readers located near the PTO.

a. Classification Searching

There are seven basic steps to take when conducting a Classification search of patents; these are depicted in Fig. 6F and are summarized below and then are explained in detail:

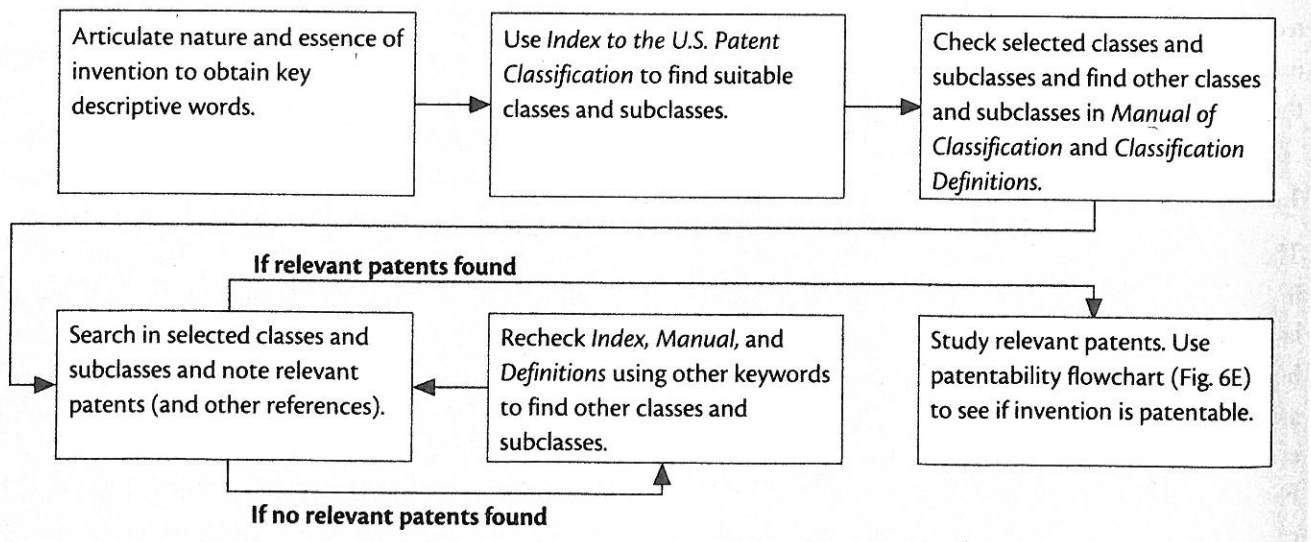

Fig. 6F—Searching Process for Paper Patents

Step 1: Write out the nature and essence of your invention, using as many different terms as you can think of to describe it. The PTO describes this step concisely as, "Brainstorm key words related to the purpose, use, and composition of the invention."

Step 2: Find potentially relevant classification(s) for your invention. Do this by looking up your keywords in the *Index to the U.S. Patent Classification*. You can do this on EAST or on the Internet at www.uspto.gov/web/patents/classification/uspcindex/indextouspc.htm.

Steps 3 and 4: Check the accuracy of the classification(s) in the Class Schedule and Class Definitions in the *Manual of Classification* on EAST or on the Internet at www.uspto.gov/web/patents/classification.

Step 5: Search the patents and published patent applications in your list of relevant classes.

Step 6: Carefully review each patent in the relevant classes and subs to see whether it is relevant, that is, does it come close to the hardware, steps, or purpose of your invention? Write down the numbers, dates, and first Inventor of any patents that are relevant and obtain copies of them to study later.

Step 7: For each relevant patent that you find, check the "References Cited" in the patent to work backward and check the "Field of Search" to find additional relevant classes and subs.

Step 1: Write Out the Nature and Essence of Your Invention

As with any other classification or indexing system, your success will depend on the degree to which the words and phrases you use to define your invention coincide with the terms used by the classifier or indexer. For this reason, you should first figure out several ways to describe your invention. Start by writing down all the physical features of your invention in a brief, concise format so that you'll know exactly what to look for when searching.

For example, if you're searching a bicycle with a new type of sprocket wheel, write down "bicycle, sprocket wheel," and briefly add the details and as many alternative terms as you can think of, such as gear, chain, drive linkage, etc. If you're searching an electronic circuit, write down in a series of phrases like the foregoing or, in a very brief sentence, the quintessence of your invention, such as "flip-flop circuit with unijunction transistors" or some other very brief and concise description. Do the same whether your invention is a mechanical, electronic, chemical, business, Internet, or method invention.

Form 6-1 is a Searcher's Worksheet that you can use to facilitate your searching, and Fig. 6G is a completed version of Form 6-1 that you might produce if you had searched Millie Inventress's invention. Note that the invention description part of the worksheet contains a concise description of the invention for easy reference.

Once you've written a concise description of your invention, think of some alternative keywords or phrases to add to your description. Don't hesitate to define your invention in still additional ways that may come to you during your search. Then, take your worksheet with this brief description and the drawing(s) of your invention to the public search room. Even if you're not going to do your search there, use that room to find out how your invention is classified.

Step 2: Find the Relevant Classifications for Your Invention

To find the places to search your invention using the Internet, you'll need its most relevant search classification (referred to as class and subclass). To obtain this, your first step is to review the PTO's classifications website at www.uspto.gov/web/patents/classification/uspcindex/indextouspc.htm. Next, you will use various reference publications:

- the *Index to the U.S. Patent Classification*
- the *Manual of Classification*, and
- the *Classification Definitions*.

These three publications can be searched online by accessing the PTO website (www.uspto.gov). Click "Patents," then click "Guidance, Tools and Manuals" under "Patenting Guides." All three publications can be found under "Tools and Manuals." Let's look at each of these in detail.

Searcher's Worksheet

Sheet 1 of 1

Inventor(s): Millie Inventress

Invention Description (use keywords and variations): Napkin folder-Annular member with inner leg, flared-back arms

Selected Search Classifications

Class/Sub	Description	Checked	Comments
40-21	Napkin holders	✓	very relevant-the right place
40-142	Misc. tableware	✓	mostly utensils-not too good
044-20	Napkin holders	✓	somewhat relevant
24-8	Shaping devices	✓	N.G.

Patents (and Other References) Thought Relevant

Patent # or Title	Name or Country	Date	Class/Sub	Comment
705, 196	Bergmann	1902	40-142	Plain ring
1,771,328	Gabel	1930	40-21	Curtain shaper
3,235,880	Hypps	1966	40-21	Fancy ring
3,965,59	LeSueur	1976	40-21	Ring with magnetic letters
				Consulted Examiner
				Hayness, John Ext. 353

Searcher: S. Searcher Date: 2016-1-12

Fig. 6G—Completed Searcher's Worksheet (Form 6-1 in Appendix 7)

Gun

INDEX TO CLASSIFICATION - G

Gyroscope

Fig. 6H—Sample Page of *Index to Classification*

Index to the U.S. Patent Classification

This will be your main reference tool. If you want to do some of the research yourself before going to the PTO, the Index can be searched online. The *Index* also lists the classes alphabetically. Let's assume that you've invented a gymnastic exercising apparatus. The first thing to do is to look in the *Index* under "Gymnastic Devices." We come to page 9 (Fig. 6H), a typical page from the Index. It shows, among other things, that "Gymnastic Devices" are classified in class 482, subclass 23.

Manual of Classification

Now that we've found the class and subclass numbers, it's time to turn to the *Manual of Classification*, which lists the classes of invention numerically. This manual is used as an adjunct to the *Index*, to check your selected classes, and to find other, closely related ones. Each of the 430 classes has its own page(s), together with about 300 to 400 subclasses under each class heading, for a total of about 140,000 subclasses. The *Manual* lists design as well as utility classes; the classes are not in any logical order. To see where class-subclass 482/23 fits, let's look at the first page that covers class 482. Fig. 6I is a copy of this page. It shows the first part of "Class 482—Exercise Devices." Note that subclass 23 in this class covers "Gymnastic." Under 482/23 are further subclasses that may be of interest; these cover trapezes and rings, horizontal bars, etc.

Classification Definitions

To check our selected class and subclass still further, we next consult a third source, known as the *Classification Definitions*. At the end of each subclass definition is a cross-reference of additional places to look that correspond to such subclass.

Fig. 6J shows the classification definition for class/subclass 482/23. This definition is actually a composite assembled from several pages of the *Definitions*—that is, it includes definitions for class 482 per se and subclasses 23–26. Note that the class definition (482 per se), as well as many of the subclass definitions contain cross-references to other classes and subclasses. You should consider these when selecting your search areas.

Getting Classification From the PTO or a PTRC

You can get a free, informal mail-order classification of your invention for search purposes by sending a copy of your invention disclosure, with a request for suggestions of one or more search subclasses, to Search Room, Patent and Trademark Office, Washington, DC 20231. However, unless you're really stuck in obtaining subclasses, don't use this method, because you have the interest in and familiarity with your invention to do a far better job if only you put a little effort into it.

Also, to save time if you intend to go to the PTO in Alexandria, you can get the search classifications locally, online, or at a PTRC (Patent and Trademark Resource Center) by using its CD-ROM CASSIS (Classification And Search Support Information System). Instructions will be provided at the computer or by the librarian.

Be sure to spend enough time to become confidently familiar with the classification system for your invention. Check all of your subclasses in the *Manual of Classification* and the *Class Definitions* manual to be sure that you've obtained all of the right ones. Usually, two or more subclasses will be appropriate. For example, suppose your gymnastic device uses a gear with an irregular shape. Naturally, you should search in the gear classes as well as in the exercising device classes. Note that the cross-references in the exercising device classes won't refer you to "gears," since this is too specific—the cross-references in the PTO's manuals are necessarily general in nature. It's up to you to consider all aspects of your particular invention when selecting search categories.

Searching analogous classes is usually very beneficial, as well. For example, consider an automobile steering wheel that you've improved by adding finger ridges to improve the driver's grip. In addition to searching in the obvious area (automobile steering wheels), consider searching in any other areas where hand grips are found, such as swords, tools, and bike handlebars.

Fortunately, the cross-references in the *Class Definitions* manual will be of great help here. Note how Sam Searcher, Esq., has completed the "Selected

CLASS 482 EXERCISE DEVICES 482 - 1

1 **HAVING SPECIFIC ELECTRICAL FEATURE**
2 .Electrical energy generator
3 .Pace setting indicator
4 .Equipment control
5 ..Amount of resistance
6 ...Regulates rate of movement
7 ..Rate of movement
8 .Monitors exercise parameter
9 ..To create or modify exercise regimen
10 **FOR HEAD OR NECK**
11 .Face (e.g., jaw, lip, etc.)
12 **FOR THRUSTING A POINTED WEAPON (E.G., A FENCING FOIL, ETC.) OR SIMULATION THEREOF**
13 **FOR IMPROVING RESPIRATORY FUNCTION**
14 **FOR TRACK OR FIELD SPORT**
15 .Jumping, vaulting, or hurdling
16 ..Crossbar or support therefor
17 ...Including height adjustment feature
18 ..Vaulting pole or stop
19 .Starting block for runner
20 .Throwing
21 ..Discus
22 ..Shot-put
23 **GYMNASTIC**
24 .Trapeze or rings
25 .Vaulting or pommel horse
26 .Projector
27 ..Trampoline
28 ...Having foldable frame
29 ...With disparate structure
30 ..Spring board
31 ...Spring external to board
32 ...Movable fulcrum
33 .Tower or pole for swinging upon
34 .Bar or rope for balancing upon
35 .Play area climbing or traversing arrangement (i.e., for use by children)
36 ..Having upright array of horizontally extending elements
37 .Arm or hand type climbing arrangement
38 .Horizontal bar
39 ..Attached to vertical wall or associated structure
40 ...Door or door jamb
41 ..Parallel bars
42 ...Separately adjustable
43 ..Harness for supporting user
44 **HAND, WRIST, OR FINGER**
45 .Involving wrist rotation
46 ..About axis perpendicular to forearm
47 .Having individual structure engaging each finger used
48 ..Finger loop
49 .Grip
50 ..Having weight feature (e.g., dumbbell, etc.)
51 **INVOLVING USER TRANSLATION OR PHYSICAL SIMULATION THEREOF**
52 .Stair climbing
53 ..Utilizing fluid resistance
54 .Treadmill for foot travel
55 .Swimming
56 ..Out of water type
57 .Bicylcling
58 ..Utilizing fluid resistance
59 ...Gas
60 ..Completely detached from user support
61 ..Stand for converting bicycle
62 ..Including upper body exercise feature
63 ..Utilizing specific resistance generating structure
64 ...Flywheel with braking band
65 ...Wheel with edge engaging braking roller
66 .Occupant propelled support frame having movement facilitating feature for foot travel
67 ..Armpit engaging
68 ..Rolling
69 .Occupant suspended from above (e.g., by a body harness, etc.) for foot travel
70 .Having separate foot engaging members reciprocating on parallel guide tracks, e.g., Nordic skiing simulator, etc.
71 .Alpine or towed skiing
72 .Rowing
73 ..Utilizing fluid resistance
74 .Jogging accessory
75 .Elevated walking device (e.g., stilts, etc.)
76 ..Stilt having specific step
77 .Bouncing device
78 .User inside device

Fig. 6I—Sample Page of *Manual of Classification*