

The Limited Monopoly™

In Search of the Perfect Christmas Tree Stand: Has the Unmet Need Been Met?

by John Hammond, PE and Robert Gunderman, PE

The LMs of Christmas Past

Longtime readers of this column may remember our 2007 Christmas issue¹, in which we lamented the lack of a decent Christmas tree stand. Along with a little humor, we (hopefully) taught our readers that when an invention solves a problem and satisfies a long felt unmet need, a strong argument in support of patentability can be made. A major premise of our missive was that when it comes to Christmas tree stands, there remained that long felt unmet need. For those of us who celebrate Christmas, who hasn't had a major meltdown at some point trying to get a Christmas tree to stand on its own with the trunk pointing upwardly, at plus or minus, say 45 degrees?

Major News – We Think...

Well, this season, we are announcing that we think the unmet need has finally been met by our very own Christmas tree stand invention. But we're not sure. We need to do a patent search to see if it's "already out there" – and that is the topic of this month's column. Using our own invention as an example, we will demonstrate doing a simple search of patents and published applications using the online searching tools in the USPTO.

First, though, we need to provide you with a brief description of our invention. Referring to the nearby sketch, the stand is comprised of three pieces: a support base with a hemispherical socket, a threaded positioning sphere, and a compression collar. To use the stand, the compression collar is slipped over the the bottom of the tree trunk. Then the threaded positioning sphere is attached to the bottom of the trunk. The sphere is provided with a cavity having tapered threads, so that it acts much like a pipe threading die on the trunk of the tree. The sphere may be cross drilled at the bottom so that a wrenching rod can be engaged with it to provide plenty of torque for threading onto the trunk.

The support base is then secured to the positioning sphere, such that the sphere is seated in the hemispherical socket of the base. The compression collar and the upper part of the base have matching threads so that the collar can be screwed onto the base. The compression collar also has a locking flange that extends downwardly, such that when the collar is screwed down far enough, the flange seats on the sphere and locks it in a fixed position.

At this point, it is time to stand the tree up. Now a final

“In accordance with Unwritten Rule 5.2, the wife should make the final adjustment of the tree to its perfect position.”

adjustment can be made. This is preferably a two person operation. One person holds the tree firmly by the upper part of the trunk while the other loosens the compression collar. The holder person makes the final adjustment to position the tree perfectly straight up, and the collar person screws the collar back down, locking the tree in final position. Now just add water! One additional note - in traditional households, we recommend that the wife makes the final adjustment to perfect position. This is in accordance with Unwritten Rule No. 5.2, which states

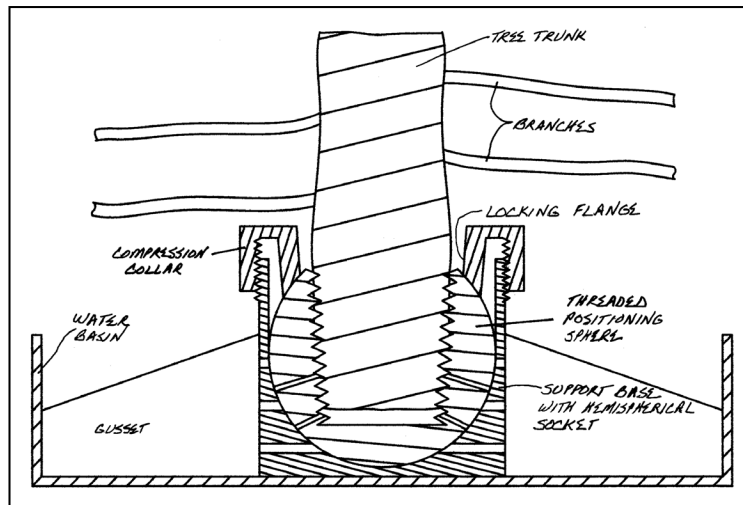
that the wife has final say in the positioning of all furnishings and other aesthetic décor.²

Almost Time to Search

So there is our invention. But we are not quite ready to search it. First we should write a concise description of what the invention is – in other words, a claim. The claim doesn't have to be perfect at this point, but it should capture the essence of the inventive concept. This will focus our search.

We could claim, “A tree stand comprising a supporting base including an upwardly facing hemispherical socket, a positioning sphere having a cavity for receiving a trunk of the tree, and a compression collar engagable by threads with the base and comprising a flange, wherein the positioning sphere may be disposed in the hemispherical cavity, and the compression collar maximally threadably engaged with the base, thereby contacting the flange with the sphere and immobilizing the sphere in the socket.”

Notice that important practical features of the tree stand, such as the water basin, are not included. They are not part of the inventive concept. For that matter, neither is the tapered pipe-thread like cavity of the sphere. There are other ways to join the sphere to the tree trunk. For example, the cavity could simply be cylindrical, with long screws being driven through countersunk ports in the sphere and onwardly into the trunk. Key point: before searching an invention, it is important to carefully consider what the inventive concept is. In this case, it



is joining a sphere to the end of the tree trunk, placing the sphere in a matching socket, and providing a reversible means for locking the sphere in position in the socket, releasing it for adjustment, and re-locking it.

Getting Started – Classify This

There are many patent search sites available for patent searching. Some are free, and others are fee based. For this simple search, we will use the USPTO online search tools. They are readily accessible, easy to use, and the price is right.

To get started, we go to the USPTO home page (www.uspto.gov), and within the main “Patents” box, click on “2. Search.” This takes us to the “Search for Patents” page³, which is a collection of links to other searching related web pages. We scroll down about halfway, and under the “Links” box on the left, we click the link⁴ for “7 Steps to Searching at a Patent and Trademark Depository Library.” This page concisely summarizes the steps for performing a class/subclass search, which is the type of search that we will perform.

Returning back to the “Search for Patents” page, and again within the “Links” box near the bottom, we click the link⁵ for “Patent Classification Codes.” This is the page that lists the approximately 470 main subject matter classifications under which all U.S. patents and published applications are classified. We note that in your searching efforts, if this is the first time you have visited this page, you may be looking for some sort of hierarchy to the subject matter; hence the listings may seem to be somewhat random in order. Your perception is accurate. They are in random order for the most part. Additionally, some of the classes seem extremely broad, such as Class 81 “Tools,” while others are very narrow, such as Class 79 “Button making.” Others cover technologies that have long been obsolete, such as 54 “Harness for working animal.” (Probably not much inventing going on in yoking oxen together these days.) Finally, you may note that new classifications are issued to accommodate new fields of technology, 977 “Nanotechnology” being one example.

In any case, we need to peruse the Classification listing carefully to identify any possible class under which patents and published applications relevant to our invention may be classified. To look at the class definition for any class, we simply click on the “Go” link next to it. When we are not sure that a particular class is relevant, we should look at the definition, even if it seems unlikely.

For our search, we look through the classes, and take a look at 220 “Receptacles,” 248 “Supports,” 269 “Work holders,” 279 “Chucks or sockets,” 403 “Joints and connections,” 414 “Material or article handling,” and 428 “Stock material or miscellaneous articles.” None of these appear to be particularly relevant. At best, there may be some relevant lower level subclasses under subclass 9.1 “Socket type,” which is classified under 279 “Chucks or sockets,” but none result in an “ah, there it is” conclusion. In a first pass through the main classification listing, we have failed to identify any obvious class/subclass candidates to search.

Time for Plan B

This is a common occurrence with searching. So it’s time for Plan B: we will perform a simple keyword search to find at least some tree stand patents, and look at those to see where they are classified.

We navigate back to the “Search for Patents” page, and under the “USPTO Patent Full-Text and Image Database (PatFT)”

heading, we click on the “Advanced Search” link⁶. This takes us to the page for searching patents by numerous fields, including strings of keywords that appear in the specifications of patents. To search for patents containing the text “Christmas tree stand” we enter the search string spec/“Christmas tree stand” in the Query box and click “Search.” The result is a page listing the first 50 links to about 250 patents containing that phrase.

After clicking on several links to see the full text of the respective patents, we discover that Christmas tree stands are classified under Class 47 “Plant husbandry” in subclass 40.5 “Tree Trunk Supporting Base With Liquid Reservoir,” subclass 42 “Tree supports,” and several others. We also find that we were previously on the right track with one class: many Christmas tree stands are classified under class 248 “Supports” in subclass 146 “Stationary receptacle,” subclass 511, “Staff type,” and several other subclasses under subclass 511. The most relevant of these appears to be subclass 516, which is a subclass of 514 and 515. To summarize, subclass 516 contains Christmas tree stands of a “Staff type” (SC 511) that are “Angularly adjustable” (SC514) “In plural planes” (SC 515) “By [a] joint having [a] spherical element.”

That sounds really close – subclass 516 is clearly one of the highest priority ones to search. That was difficult to tell just by looking at the descriptions of the various subclasses. This example shows how an initial keyword search can help to identify the best classes/subclasses to search when it is not readily apparent from the descriptions themselves.

To Be Continued

So now we have the best class/subclass candidates to sift through in our search. We need to look at both issued patents and published applications. Have we met the unmet need ahead of anyone else? Or has some other inventor beaten us to it? You’ll have to stay tuned – next month we’ll report our results. For now, there is other work to be done, and good cheer to be had. We wish all of our readers lots of that good cheer, and a Merry Christmas!

1. [The Limited Monopoly™, December 2007.](#)
2. Subject however to the Man Cave Exemption.
3. <http://www.uspto.gov/patents/process/search/index.jsp>
4. <http://www.uspto.gov/products/library/ptdl/services/step7.jsp>
5. <http://www.uspto.gov/web/patents/classification/selectnumwithtitle.htm>
6. <http://patft.uspto.gov/netahtml/PTO/search-adv.htm>

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