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# A New Look at Patent Reform\*

Lee A. Hollaar

## INTRODUCTION

In the past few years, there have been a number of proposals on how to rectify the perceived problems with the United States patent system or otherwise reform it. The ones that have received the most attention are the United States Patent and Trademark Office (USPTO)'s own *21st Century Strategic Plan*,<sup>1</sup> the Federal Trade Commission (FTC)'s *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*,<sup>2</sup> and the National Research Council (NRC)'s *A Patent System for the 21st Century*.<sup>3</sup>

Many of the recommendations of these three reports are similar. The proposals all recognize that examinations are not perfect because is impractical to compare the claimed invention against every printed publication in any language anywhere in the world and everything know, used, or on sale in the United States,<sup>4</sup> and suggest some form of post-grant patent opposition to allow others to submit prior art or otherwise indicate why a patent was improperly issued.

But while post-grant opposition and ending the diversion of patent fees (another recommendation common to all three proposals) would

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<sup>1</sup> The United States Patent and Trademark Office submitted its *The 21st Century Strategic Plan* to Congress on June 3, 2002. Based on feedback from Congress and other stakeholders, the USPTO released an updated version on February 3, 2003. <http://www.uspto.gov/web/offices/com/strat21/index.htm>.

<sup>2</sup> The Federal Trade Commission issued its report in October 2003, after 24 days of hearings from February through November 2002 involving more than 300 participants. <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

<sup>3</sup> A prepublication draft of the report was released in April 2004 by the Committee on Intellectual Property Rights in the Knowledge-Based Economy established by the National Research Council's Board on Science, Technology, and Economic Policy. <http://books.nap.edu/catalog/10976.html>.

<sup>4</sup> 35 U.S.C. §102(a) and (b).

surely help the patent system, believe bolder changes may be necessary for a patent system to work in the face of today's fast-moving technologies.

#### A PATENT OR NOTHING

For many technologies, and in particular for computer-based inventions and methods of doing business,<sup>5</sup> a patent may be the only effective form of protection available. Copyright protects only the expression of a technique, and not the technique itself. If a competitor can determine the method of a computer-based invention and implements it without reproducing its copyrighted expression (such as producing a "clean-room" implementation based on a functional description), there is no copyright infringement. Many techniques are self-revealing, so that once competitors are aware of it, it is not difficult for them to incorporate it into their products or services.

For example, Amazon.com first used their "one-click" technique<sup>6</sup> in September 1997.<sup>7</sup> By May 1998, eight months later, Barnesandnoble.com (BN) was using the technique on their web site, although there is no evidence that they were infringing Amazon's copyright in the implementation of the technique. One of BN's expert witnesses, who had previously implemented a web ordering system, admitted that he never considered making single-action ordering an available option to users, but once it was in use and publicly visible, it was not difficult for competitors to come up with their own implementations.

Amazon had filed a patent application on September 12, 1997, and the patent had issued on September 28, 1999. Because the patent had not issued by Christmas 1998, BN was using the technique that important time for online merchandizing. Amazon was able to get an injunction against BN's use of the technique during the 1999 Christmas season.<sup>8</sup>

That pendency was average for a patent at that time, and low for most computer-related patents. Patent pendency now average over two

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<sup>5</sup> Many "method of doing business" patents are often just patents on computer-based inventions, since to be practical a computer must be used to process the amount of data necessary for a commercial system.

<sup>6</sup> "Method and system for placing a purchase order via a communications network," United States Patent No. 5,960,411, issued September 28, 1999.

<sup>7</sup> See *Amazon.com v. Barnesandnoble.com*, 73 F.Supp.2d 1228, 53 USPQ2d 1115 (WD WA 1999).

<sup>8</sup> The injunction was later vacated by the Federal Circuit because there were substantial questions regarding the patent's validity. 239 F.3d 1343, 57 USPQ2d 1747 (Fed. Cir. 2001).

years, and four years for some important technologies, and pendencies continue to increase.<sup>9</sup> The original goal of the USPTO plan was to reduce average pendency to eighteen months, but for fast-moving technology, that is still too long.

All three reports also recommended improvement in the quality of examination, especially with regard to the determination of whether a claimed invention is obvious in light of the prior art. It is hard to see how that would not increase pendency. Because patents may offer the only meaningful protection for a technology, an applicant will likely contest any finding of nonobviousness made by the examiner.<sup>10</sup>

### PATENT PROTECTION: TOO MUCH, TOO LONG, TOO LATE

Consider a hypothetical based on the Amazon patent. Based on what it observed during the 1999 Christmas shopping season, online retailer A comes up with a new technique to improve the shopping experience for its customers. By March 2000, it has completed its implementation of the technique and has deployed it on its web site. At the same time, it also applies for a patent.

Competitor B sees A's new technique, and decides to implement its own version. Eight months later, in November (just in time for the 2000 Christmas season), it also provides the technique for its customers, eliminating A's advantage.

Because the USPTO has achieved its goal of a first office action within 18 months of the filing of an application, on September 2001 A receives an action rejecting all its claims as obviousness in light of a variety of references. A replies as fast as it can, but it is clear that even if the examiner accepts all of A's arguments, a patent will not issue until after the 2001 Christmas shopping season. B gets to compete using A's technique for another season.

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<sup>9</sup> Statement of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the USPTO before the Subcommittee on Courts, the Internet and Intellectual Property, House Committee on the Judiciary, April 3, 2003.

<sup>10</sup> The statute places the initial burden of showing nonobviousness on the examiner. ("A person shall be entitled to a patent unless ..." 17 U.S.C. §102.)

Many times, an examiner simply finds a number of prior art references that seem to disclose the key aspects of the invention and asserts that the invention is obvious in light of those references. Such hindsight is clearly improper, with the Federal Circuit saying that there must be some motivation to combine the references. See, for example, *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Once the applicant states that the prior art references don't teach the same thing as the claimed invention or there is no motivation to combine them, the examiner often withdraws the rejections but does not look for more pertinent prior art or reasons to combine the references, and instead allows the application. Presumably, that is one of the things that those advocating better examinations would change in some way.

Because A realizes that the only way it will be able to protect its technique is with a patent, it continues the prosecution of the patent in the face of the heightened scrutiny for obvious resulting from the various patent reform proposals. Three years after filing its application, in March 2003, A finally receives a patent on the technique. Its competitor, B, finally has to stop using A's technique, although it was able to use it during the 2000, 2001, and 2002 Christmas shopping seasons. A has gotten little or no benefit for being the first adopter.

But it can stop others from using the technique until March 2020, twenty years after the filing of its granted patent application. And that includes not only competitors like B, who saw A's technique and used it as the basis of their own implementations, but others like C, who were working on a similar technique in March 2000, when A applied for its patent, but didn't complete their implementation until a month or so after A.<sup>11</sup>

Whatever you may think about Amazon's "one-click" patent, it (and the hypothetical based on it) illustrate problems with the current patent system that the proposals would not fix, and may even make worse.

It takes too long to get patent protection, particularly for fast-moving technologies that can be readily copied once they are being used.

Patent protection often goes beyond what is needed to prevent competitors from usurping new techniques, with protection lasting about two decades and blocking those who independently created the technology.

Because of the requirement for nonobviousness, it should be difficult to get a patent, but the limited examination dictated by current application fees often doesn't give the examiner time to find and consider important prior art.

No other form of intellectual property protection (copyright, trade secret) is available to protect a new computer technique or method of doing business.

#### AN INTERMEDIATE FORM OF PROTECTION IS NEEDED

The solution to these problems is not some fine tuning of the current patent statutes and rules, but an intermediate form of protection that can be used in lieu of a patent, or until a patent is granted.

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<sup>11</sup> Independent creation is not a defense to patent infringement. There is a prior user defense for business methods, but requires that the business method had been used at least a year before the filing date of the patent application. See 35 U.S.C. §273.

A number of countries have a "petty patent" or "utility model" of intermediate protection.<sup>12</sup> Others have proposed "useful article" protection,<sup>13</sup> and a form of that was enacted in the "boat hull" statute.<sup>14</sup> But those laws or proposals are generally limited to protecting mechanical devices and other manufactured items. They do little or nothing to protect software-based inventions, methods of doing business, or other processes, which as discussed above are areas where an intermediate form of protection may be the most useful.

In May 2001, Australia introduced a new alternative patent, which they call an "innovation patent."<sup>15</sup> Unlike a regular patent, the innovation patent provides only eight years of protection, with no substantive examination before issue and requiring only novelty and an innovative step with respect to the prior art. Later examination can be requested by the patent owner, as a prerequisite to filing an infringement action, or by any other party. The allowable subject matter for an innovation patent is the same as for a standard patent, although only five claims are allowed.

In the first three years of the innovation patent, approximately 2000 applications were filed of which about sixty percent were granted and about eight percent fully examined.<sup>16</sup> In contrast, about 67,000 applications for standard patents were filed, with about 40,000 granted during approximately the same period. About thirty percent of the innovation patent applications were for consumer goods, while about twelve percent were related to information technology.

Perhaps one of the reasons why the Australian innovation patent has not been more widely used, beyond inexperience on the part of patent attorneys and with it in the courts, is that its cost is not substantially less than for a standard patent, particularly when the costs of preparing and prosecuting the application are considered.<sup>17</sup> Although the maintenance fees are higher for a standard patent, the benefits of an innovation patent may be outweighed by the decreased patent term of eight years rather

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<sup>12</sup> See the discussion of two forms of German protection at §3.06[2] of *Chisum on Patents*, and in particular its discussion of the Gebrauchsmuster.

<sup>13</sup> One group that has been advocating article protection for decades is IEEE-USA.

<http://www.ieeeusa.org/forum/POSITIONS/newip.html>.

<sup>14</sup> 17 U.S.C. §1301 *et seq.*

<sup>15</sup> [http://www.ipaustralia.gov.au/patents/what\\_innovation.shtml](http://www.ipaustralia.gov.au/patents/what_innovation.shtml).

<sup>16</sup> Data available at <http://www.ipaustralia.gov.au/about/statistics.shtml>.

<sup>17</sup> The application fee for an innovation patent is \$150 if it is filed online, compared to \$290 for a standard patent. The examination fee for a standard patent is \$340 and for an innovation patent is \$290, although an innovation patent does not need to be examined until litigation is planned. See [http://www.ipaustralia.gov.au/patents/fees\\_index.shtml](http://www.ipaustralia.gov.au/patents/fees_index.shtml).

than twenty, making innovation patents primarily interesting when the invention is novel but obvious, so standard patent protection would not be available, or when quick but limited protection is necessary.

#### ISSUES FOR A LIMITED UNITED STATES PATENT

The Australian innovation patent suggests an interesting way of addressing the problems with current United States patents discussed above. Its protection comes into being without the delay of examination.

But because the innovation patent appears to simply trade off a reduced term for a lower standard of patentability, it should not be adopted by the United States as a way of addressing the problems with current patents for fast-moving technology. Instead, a number of issues need to be carefully considered in determining the form for such a limited patent.

#### WHAT TO PROTECT?

It is most logical that technology that could be protected by a limited patent be that protected by current patents: "process, machine, manufacture, or composition of matter."<sup>18</sup> There is an existing body of law that covers this, and exclusion of software-based inventions or business methods, as is the case with most countries' petty patents or with article protection ignores the very technologies where this protection would be most applicable.

The next issue is the required degree of creativity for protection. The three degrees of creativity found in other forms of intellectual property are originality, novelty, and nonobviousness. Originality is the criteria in both the copyright<sup>19</sup> and the boat hull<sup>20</sup> statutes. It is the lowest level of creativity, requiring little more than that the protected item not be copied from another. Patent protection requires that the invention be both novel, meaning it does not already exist in the prior art,<sup>21</sup> and nonobvious, meaning that it is different from the prior art in a way that would not be obvious to a person with ordinary skills in the art of the invention at the time the invention was made.<sup>22</sup>

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<sup>18</sup> 35 U.S.C. §101.

<sup>19</sup> "Copyright protection subsists, in accordance with this title, in *original* works of authorship fixed in any tangible medium of expression ..." 17 U.S.C. §102(a).

<sup>20</sup> "The designer or other owner of an *original* design of a useful article ... may secure the protection provided by this chapter ..." 17 U.S.C. §1301(a)(1).

<sup>21</sup> 35 U.S.C. §102.

<sup>22</sup> 35 U.S.C. §103.

Novelty may be the most appropriate standard for this intermediate protection. It would prevent people from receiving protection for things that are already available to the public<sup>23</sup> while avoiding the problems associated with trying to prove or disprove that something is “obvious” in light of the prior art. The Australian innovation patent requires novelty plus a little more – some “inventive step.” But that additional requirement would result in much litigation trying to determine what, beyond novelty, the required inventive step is.

But there should also be a limited form of nonobviousness required: that if a process or method is prior art, simply implementing that process or method on a computer or storing it on some medium does not result in a novel invention unless there is something nonobvious in how the computer is being used or the information is being stored.<sup>24</sup>

#### THE REQUIREMENTS FOR PROTECTION?

Under current United States copyright law, nothing is required to secure copyright protection for a work beyond fixing it in a tangible medium of expression.<sup>25</sup> Before the Copyright Act of 1976, both publication and registration were required. Boat hull protection requires registration<sup>26</sup> as well as a notice on the protected hull.<sup>27</sup> Patents require the filing and examination of an application, and provide no protection until the examination has been completed and the patent is granted.

Since we are trying to provide a more timely protection than patents, it is unreasonable to delay the protection during an examination period. But simply providing protection based on the marking of an item or a simple registration does not give sufficient notice to the public of the aspects of the item that are protected. If a car were marked with a protection notice, one would not know whether the protection extends to the car as a whole, the rear-view mirror, or a screw used somewhere in the car. Simple registration, such as for boat hulls, is inadequate – it

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<sup>23</sup> The originality requirement for copyright allows somebody to receive their own protection for a work identical to an existing work as long as it was independently created. While it is unlikely, courts and commentators like to discuss the copyrightability of an independently-created work that ends up identical to a prior work, such as Keats' *Ode on a Grecian Urn*.

<sup>24</sup> Amending the “all elements” 35 U.S.C. §103 to give no patentable weight to the use of a computer or storage on a commonly-available medium should also be considered. See my paper “Justice Douglas Was Right: The Need for Congressional Action on Software Patents”, *AIPLA Quarterly Journal*, Volume 24, Number 1, pages 283-305. Winter 1996, <http://digital-law-online.info/papers/lah/aipia-qj.html>.

<sup>25</sup> 17 U.S.C. §102(a). 17 U.S.C. §411 requires registration of the work in many instances before an infringement suit can be brought.

<sup>26</sup> 17 U.S.C. §1310.

<sup>27</sup> 17 U.S.C. §1306. 17 U.S.C. §1307 provides limits on the protection if the required notice is omitted, such as decreased infringement liability.

works for boat hulls because we know the only "useful article" in the view of the statute is a boat hull.<sup>28</sup>

With patents, it is straightforward to determine what is protected, since the patent contains a number of claims indicating the scope of protection.<sup>29</sup> (Well, relatively straightforward, since disputes over the meaning of the terms of a claim are a major component of patent litigation. But it is certainly easier to determine what is protected by a utility patent than for a copyright or trade secret, or even a boat hull or design patent.)

Protection could come about by first filing of an application as the protected item were close to public availability, along with a nominal filing fee, around \$500. While perhaps not to the specificity of a regular patent, those wanting this intermediate protection should have to indicate the particular aspects of their technology that they felt to be novel and therefore protectible. The registration number, issued before the first use in commerce of the technology, would provide an index into the patent office's information on the limited patent and an indication of what is claimed to be protected.

The protection would come into being when the technology is first used in commerce within the United States, marked with its registration number. Since the primary purpose of this limited patent is to provide immediate protection for technology that could be copied by a competitor before patent protection could be secured, there is no need to provide the protection for speculative inventions or those not available to the competitors.

One of the important aspects of patents is their disclosure of the invention for the prior art collection used to examine later patents. Software patents have been a problem because there was a period when the patent office was not accepting applications in that area (or was viewed hostile to them) and so techniques from the formative time of computer applications are not in the patent office's prior art collection, making it difficult to determine if a claimed invention is novel or nonobvious. It is important that this intermediate protection be given only after its technology is adequately described, perhaps to the same level as for a regular patent.<sup>30</sup>

<sup>28</sup> 17 U.S.C. §1301(b)(2).

<sup>29</sup> 35 U.S.C. §112, second paragraph.

<sup>30</sup> 35 U.S.C. §112, first paragraph.



No examination beyond a check to see that the requirements for registration where met would be performed. In particular, there would be no search to determine if the protected technology were really novel. Because there would be no administrative determination of novelty, there would be no presumption of validity for the limited patent. If electronic filing were used, it should be possible for the patent office to return a registration number immediately (if it could be later cancelled if the formalities had not been met) or within a short time.

#### THE LENGTH OF PROTECTION?

As discussed above, patent protection not only may come too late, but when it does come about it is for about seventeen years, far too long for many technologies. Copyright protection is even worse – seventy years after the death of the author. Boat hull protection is for ten years, although there is nothing to indicate that a term that long is necessary.

Three to five years is the term often suggested for fast-moving technologies.<sup>31</sup> Perhaps four years would be appropriate, since that would cover the pendency for most patent applications and is sufficient to give an first-provider advantage over competitors. In those cases where a regular patent is pending but close to issue, the possibility of a short extension to provide a continuity of protection may be reasonable. Having such a relatively short term would also reduce the impact of the protection on the aftermarket parts sector.

#### WHAT ACTS VIOLATE THE PROTECTION?

Once protection exists because of registration and use in commerce, when should there be liability for violating the protection? Again, it might be best to follow the infringement formula for patents: making, using, selling, offering for sale, or importing, as well as contributing to or inducing infringement.<sup>32</sup>

But it should protect only against those who were aware of the technology and its protected status, not independent inventors. This

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<sup>31</sup> In response to criticism of the “one-click” patent, Jeff Bezos, CEO of Amazon and one of the inventors, proposed a three- to five-year duration for business method and software patents. That is probably not possible under present treaty commitments to technology-neutrality and a twenty-year term from filing. See *Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*, Articles 27 and 33. But this limited patent would be an alternative to existing patents, which would still be available and continue to meet our treaty obligations.

[http://www.oreilly.com/news/amazon\\_patents.html](http://www.oreilly.com/news/amazon_patents.html)

<sup>32</sup> 35 U.S.C. §271(a), (b), and (c).

copying requirement for liability would reach only those producing the protected technology, not end users as can be the case with regular patents. But indirect liability, primarily inducement to violate the protection, would address those who sponsor the production of things that violate the protection.

Showing prior development and use would be an absolute defense, and also invalidate the limited patent, since novelty would be a requirement for the protection. But it may be best to extend that with a substantial completion defense. An alleged infringer that could show that their product was substantially completed at the time the limited patent protection first came into being would not violate the protection, since their product was not significantly copied but was substantially independently created. But this would be a personal defense, much like the one currently available for users of a business method who completed their implementation before the invention leading to the patent they are infringing, but have kept it secret.<sup>33</sup>

#### PRELITIGATION REQUIREMENTS?

Because there would be no examination required before protection comes into being, and yet there is a requirement that the protected item be novel, it would be desirable to impose an examination requirement as a initial step in any litigation, to reduce the cost of litigation when a violation is alleged and to provide for a faster resolution of the novelty issue. Australia has done this with its innovation patent.

At the time of the filing of a suit for violation of the protection, the proceeding would be stayed pending a novelty examination by the patent office. This would be less time consuming than a regular patent examination, because nonobviousness would not be considered and the alleged violator of the protection would be aware of the examination (because of the suit) and able to provide prior art for the examiner to consider. The limited patent owner would pay a nominal examination fee (perhaps \$500, recognizing that the examination would be somewhat simpler than for a regular patent), much as it paid a filing fee for the suit.

In addition, examination could be requested by any party by the payment of the examination fee and the submission of prior art showing the protected item is not novel.

Because there was no initial examination, there would be no presumption of validity. But after examination, the limited patent would

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<sup>33</sup> 35 U.S.C. §273.

be presumed valid with respect to the prior art considered, and the defendant would be estopped from bringing new prior art before the court. If new prior art was discovered by the defendant, the suit would again be stayed and the defendant would have to pay for another examination, based on the newly-discovered prior art. This will shift the determination of novelty from a judge or jury, inexperienced in the particular technology, to the patent office and its technically-trained examiners.

### PATENT FEES?

An intermediate form of patent protection would also allow substantially strengthening of the conditions for getting a regular patent and increasing the fees to pay for a much more thorough examination. A better examination desired by patent reform advocates will necessitate an increase in fees, perhaps a substantial one, to pay for the increased time spent by the examiner reviewing prior art and addressing the arguments of the applicant, as well as a "second pair of eyes" review as is now the case for business method patents.<sup>34</sup> But even though patent application fees are a small part of the cost of filing for a patent,<sup>35</sup> any substantial increase will likely lead to a reduction in patent filings, especially by cash-strapped small companies and inventors.

We saw the effect of discouraging the filing of applications when the USPTO's policy was not to grant patents on software-based inventions, or at least make it difficult for applicants to get such a patent. Software developers didn't file applications on their advances because they didn't believe that patent protection was available, resulting in a gap in the USPTO's prior art collection corresponding to the formative years of software systems<sup>36</sup> and a stretching of copyright protection by the

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<sup>34</sup> See <http://www.uspto.gov/web/offices/com/sol/actionplan.html>

<sup>35</sup> The current application fee is \$770, and is half that for "small entities." (That obviously doesn't pay for a lot of examiner time.) If the patent is allowed, there is a \$1330 issue fee, also discounted by fifty percent for small entities. In contrast, patent attorneys may charge \$5000 or (often) more to prepare a patent application.

<sup>36</sup> A personal example: In 1969, working for the Chicago software company Datalogics, I developed a new way for composing complex, multicolumn page (such as the yellow pages) and producing an output for a phototypesetter that only required forward motion of the film. The technique was at least ten times faster than other systems, and allowed Datalogics to become a leader in computer typesetting systems. (At one time, about two thirds of law reviews, for example, were composed using Datalogics software.)

The technique remained a trade secret of Datalogics, since copyright would not protect the technique itself and patents seemed unavailable. As far as I know, a description of the technique has never been available to the public and so the technique has been essentially lost.

courts to fill the gap left by not having patent protection available.<sup>37</sup> We are still paying for that gap in the prior art collection in terms of patents being issued on old techniques, and we cannot afford to have that happen again.

A reduced filing fee for the limited patent would encourage filings, and if registration including a description of the invention were required, the building of the patent prior art collection. At the same time, a substantial increase in patent fees (say, ten times the current fee or more) would pay for a dramatic improvement in examination time and quality, perhaps even permitting the examination of all applications by a team of examiners.

Such a fee increase could also reduce the workload on the patent office since many inventors might opt for the lower-cost, and immediate, protection of the limited patent and not go for a full patent.

#### CONCLUSION

While a number of reports have made suggestions for improving the United States patent system, improving the quality of examination may have unexpected consequences. The increased examination fees may discourage the filing of patent applications, thereby hurting the prior art collection needed to properly examine applications. Heightened scrutiny for nonobviousness will likely increase pendency, particularly for inventions where patents are the only available form of protection and so the applicant must continue prosecuting an application until a patent is granted.

For fast-moving technologies, current patent protection is too much, too long, and too late. The creation of a limited patent could provide the necessary protection while allowing substantial improvements to the quality of the examination of regular patent

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<sup>37</sup> See, for example, , 797 F.2d 1222, 230 USPQ 481 (3rd Cir. 1986).