

**KEEPING TIME MACHINES AND TELEPORTERS IN THE PUBLIC DOMAIN¹ :
FICTION AS PRIOR ART FOR PATENT EXAMINATION**

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Abstract

Works of fiction sometimes contain disclosures of inventions that operate as a bar to patentability, preventing inventors who actually make those inventions from subsequently patenting them. This is because the fictional disclosures effectively destroy the novelty of the inventions or render them obvious. Despite such disclosures, the U.S. Patent and Trademark Office does not habitually or effectively search through fiction for pertinent prior art in its examinations. This paper explores the legal, economic, and pragmatic considerations if searching fiction is to become part of the patent examination process. Until recently, it was impracticable to search fiction in a manner that would accurately locate pertinent prior art. However, with the advent of the Google Book Search Project, fiction can be both effectively and efficiently searched for the first time in history. Ultimately, the strong public interest in keeping invalid patents from issuing requires that fictional prior art searching be incorporated into patent examinations.

¹ This title is intended to be somewhat facetious. To get in on the joke, see the discussion about time machines and teleportation devices in Part III.A.

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I. INTRODUCTION

In 1964, Danish inventor Karl Kroyer raised the sunken freighter Al-Kuwait from the bottom of the Persian Gulf.³ He accomplished this feat by pumping millions of hollow pellets into the vessel through a tube.⁴ Fifteen years earlier, Disney cartoonist Carl Barks composed a comic strip called “The Sunken Yacht,” starring the famously short-tempered Donald Duck.⁵ The comic shows Donald and his nephews Huey, Dewey, and Louie filling their Uncle Scrooge’s sunken yacht with ping pong balls to raise it back to the surface.⁶ Kroyer sought to patent his ingenious method in the Netherlands, but his application was rejected because the method had already been disclosed in the comic strip.⁷

In the 1930s, science fiction author Robert Heinlein was hospitalized for an extended period of time.⁸ There, he conceived of the idea for a hydraulic bed made of a flexible skin that would be filled with water so that a person could “float” on top of it.⁹ Heinlein never patented his invention.¹⁰ However, he disclosed this idea in his renowned novel about a man from Mars, *Stranger in a Strange Land*.¹¹ Later, when inventor Charles Hall attempted to patent the

³ STEVE SILVERMAN, *EINSTEIN’S REFRIGERATOR: AND OTHER STORIES FROM THE FLIP SIDE OF HISTORY* 153-54 (2001).

⁴ *Id.* at 154.

⁵ *Id.* at 153-54.

⁶ *Id.*

⁷ Iusmentis.com, The “Donald Duck as Prior Art” Case, <http://www.iusmentis.com/patents/priorart/donaldduck> (last visited Jan. 7, 2007).

⁸ Jay Garmon, Geek Trivia: *Strange (Water)bedfellows*, TECH REPUBLIC, Aug. 1, 2006, <http://articles.techrepublic.com.com/5100-10881-6098825-2.html>; Technovelgy.com, Waterbed (Hydraulic Bed) by Robert Heinlein from *Stranger in a Strange Land*, <http://www.technovelgy.com/ct/content.asp?Bnum=385> (last visited Jan 7, 2007).

⁹ Garmon, *supra* note 8; Technovelgy.com, *supra* note 8

¹⁰ SPIDER ROBINSON, *TIME TRAVELERS STRICTLY CASH* 117 (James Frenkel ed., Tor 2001) (1979).

¹¹ J. NEIL SCHULMAN, *THE ROBERT HEINLEIN INTERVIEW AND OTHER HEINLEINIANA* 25 (1999).

waterbed in the United States, his application was rejected since Heinlein's book was evidence that the invention was not novel.¹²

The lesson to be learned from these two events is a simple one: fictional works can contain disclosures that render inventions unpatentable. However, patent examiners do not presently search through fiction in a way that effectively locates those works that are relevant to particular inventions. In order to justify the strong presumption of validity¹³ afforded to issued patents, the United States Patent and Trademark Office (hereinafter "PTO") should implement a system that accounts for the reality that sometimes authors of fiction are also inventors. Works of fiction should be searched by the PTO as part of its patent examinations to further ensure that inventions are not appropriated from the public domain.

Part II of this article will look at the current state of affairs at the PTO, particularly with regard to its struggle with patent quality and examination efficiency. Part III will address why fiction has not been searched by the PTO in the past, and will discuss why the various arguments against searching fiction are each fatally flawed. Finally, Part IV will explain why ultimately searching fiction is warranted, if not required, by the purposes of the patent system.

II. CURRENT CHALLENGES AT THE PTO

The PTO has recently come under fire for issuing too many invalid patents, that is, patents that do not actually satisfy the statutory criteria for patentability (that inventions be useful¹⁴, novel¹⁵, and nonobvious¹⁶).¹⁷ The PTO has also been criticized for its inefficiency in

¹² Garmon, *supra* note 8; Technovelgy.com, *supra* note 8

¹³ 35 U.S.C. § 282 (Supp. III 2003) (amending 35 U.S.C. § 282 (2000)).

¹⁴ 35 U.S.C. § 101

¹⁵ 35 U.S.C. § 102

¹⁶ 35 U.S.C. § 103

conducting patent examinations.¹⁸ As a response to this criticism, the PTO has outlined a strategic plan¹⁹ showing how it intends to improve the patent system in these respects.²⁰ This plan includes hiring and retaining more patent examiners, increasing the depth and intensity of their training, and utilizing information technology to more efficiently conduct patent examinations.²¹

The most important goal in the strategic plan is to “improve search quality by improving the examiners’ ability to locate the best prior art in the examination process.”²² An inventor can only be granted a patent if the invention is patentably distinguishable over the prior art that is revealed by the examiner’s search. Thus, the scope of any patent protection granted to an inventor is limited and defined by the prior art that turns up in the search. It should come as no surprise then, that an issued patent’s presumption of validity²³ is considerably weakened when pertinent prior art exists that was not considered by the examiner who allowed the patent to issue.²⁴

While a lay person may envision a patent examiner “spending long hours poring over a patent application,” the reality is that examinations happen very quickly and the examiners

¹⁷ Mark Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1495 (2001).

¹⁸ *Id.* Patent applications are typically pending for about three years and there is an increasing backlog of applications awaiting their first action.

¹⁹ U.S. Patent and Trademark Office, Strategic Plan 2007-2012, <http://www.uspto.gov/web/offices/com/strat2007> (last visited Jan. 7, 2007).

²⁰ *Id.* at http://www.uspto.gov/web/offices/com/strat2007/stratplan2007-2012_06.htm.

²¹ *Id.*

²² *Id.*

²³ The statutory presumption of validity has been characterized as “strong,” and can only be rebutted with “clear and convincing evidence.” *Al-Site Corp. v. VSI Int’l*, 174 F.3d 1308, 1323 (Fed. Cir. 1999).

²⁴ The Federal Circuit has held that the presumption of validity exists even with regard to prior art that was not considered during the patent prosecution. *Kahn v. Gen. Motors Corp.*, 135 F.3d 1472, 1480 (Fed. Cir. 1998). However, the burden of rebutting the presumption with clear and convincing evidence does become an easier one to bear in light of new prior art. *Id.*

“regularly miss the most relevant prior art.”²⁵ An average of eighteen hours is spent per application, which includes reading the application, searching for and reading the prior art, determining whether the claims are patentable over the prior art, and writing an “Office Action” to be sent to the applicant which explains the reasons for any claim rejections.²⁶ Ultimately, much of the relevant prior art simply cannot be found in the time allotted to any given application, and thus invalid patents inevitably slip through the cracks.²⁷ Faced with an increasing number of patent applications being filed in an already backlogged system, the PTO is struggling to improve the quality of its issued patents. The strategic plan sets forth excellent proposals that could substantially help the PTO meet its goals, but that plan does not go quite far enough. The PTO needs to incorporate more sources of prior art into the examination process, including works of fiction, to ensure that fewer invalid patents issue.

III. THE ARGUMENTS AGAINST SEARCHING FICTION

There are several reasons that might explain why the PTO does not regularly search through works of fiction for prior art, as well as arguments that it should not start now. These arguments are based on the likelihood of fictional works rendering inventions unpatentable, as well as economic and pragmatic concerns. I will now address each of these arguments in turn and explain why they all must ultimately yield to the public interest that issued patents be valid. While I have split up these arguments into various sections for the sake of organization, it is important to note that they are all interrelated. In particular, the financial and practical effects of searching fiction, discussed in Part III.E, pervade all of the other arguments.

²⁵ Lemley, *supra* note 17, at 1528.

²⁶ *Id.* at 1500.

²⁷ *Id.*

A. *Fiction Rarely Anticipates Inventions*

An invention cannot be patented unless it is new.²⁸ If the claimed invention was “known . . . by others” in the United States before it was invented by the patent applicant, the invention lacks novelty.²⁹ Likewise, the invention also lacks novelty if it was “described in a printed publication” either before the applicant’s invention³⁰ or more than one year before the inventor’s patent application was filed.³¹ In instances like these, the prior art reference is said to have “anticipated” the claimed invention.³²

There are two stringent requirements for a reference to anticipate a patent claim. First, the *exact same* invention that is claimed must be disclosed in a single reference.³³ The identity requirement has been construed strictly, such that each claim limitation must be either explicitly or inherently disclosed in the reference for it to be anticipatory.³⁴ Second, the reference must enable a person having ordinary skill in the art (hereinafter “PHOSITA”) to make and use the invention.³⁵ In order for a disclosure to be enabling, the invention must be disclosed in sufficient technical detail so that a PHOSITA can make and use the invention without undue experimentation.³⁶

²⁸ 35 U.S.C. § 102 (2000 & Supp. III 2003).

²⁹ *Id.* § 102(a). Note that the courts have construed knowledge under § 102(a) to mean that knowledge which is at least “accessible to the public.” *Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 139 (Fed. Cir. 1986).

³⁰ *Id.*

³¹ *Id.* § 102(b).

³² JANICE M. MUELLER, *AN INTRODUCTION TO PATENT LAW* 120 (2d ed. 2006).

³³ *Transclean Corp. v. Bridgwood Serv., Inc.*, 290 F.3d 1364, 1370 (Fed. Cir. 2002).

³⁴ *Id.*

³⁵ *Id.*

³⁶ *See, e.g., In re Glass*, 492 F.2d 1228, 1233 (C.C.P.A. 1974) (holding that a method for producing crystals was not enabled where certain critical ratios and temperatures were omitted in the patent specification, leaving too much to speculation and experimentation).

Works of fiction can certainly qualify as anticipatory prior art in the public knowledge and printed publication sense. However, because of the nature of fiction, such works are unlikely to satisfy the requirements for anticipation. An author's purpose in writing fiction is presumably not to give detailed descriptions of inventions; rather, it is to entertain, tell a story, or provide social commentary. Thus, when inventions are disclosed in works of fiction, the disclosure would rarely include a description of every single element of a claimed invention. As a result, fiction is unlikely to satisfy the strict identity requirement for anticipation. Even if each element of the invention were disclosed, authors of fiction seldom give enough detail to enable a PHOSITA to make and use the invention. However, additional references could be used to show that a work of fiction is in fact enabling, even if it does not appear so on its face.³⁷ This makes the enablement requirement somewhat easier to satisfy than the strict identity requirement for works of fiction.

To illustrate the lack of technical detail in fiction, it is instructive to consider two famous inventions from science fiction authors: the transporter from *Star Trek*³⁸ and the flux capacitor from *Back to the Future*.³⁹ The transporter was a device that could teleport crew members of the space ship to and from other locations, such as the surface of a nearby planet.⁴⁰ The flux capacitor was a box with tubes, wires, and lights that made it possible for a DeLorean to travel through time.⁴¹ Neither of these inventions is shown in detail. The inner workings and components of the devices are not disclosed, and there is insufficient information to enable a

³⁷ *In re Donohue*, 766 F.2d 531, 534 (Fed. Cir. 1985).

³⁸ STAR TREK: THE MOTION PICTURE (Paramount Pictures 1979).

³⁹ BACK TO THE FUTURE (Universal Pictures 1985).

⁴⁰ STAR TREK: THE MOTION PICTURE, *supra* note 38.

⁴¹ BACK TO THE FUTURE, *supra* note 39.

PHOSITA to make and use either invention.⁴² Thus, these works of fiction are not anticipatory references and therefore would not preclude an inventor of such actual devices from patenting them.⁴³

There is an argument to be made that since fiction is rarely anticipatory, it is not worth utilizing the PTO's already limited resources to search it. But however likely it may be, works of fiction can and do anticipate inventions.⁴⁴ To say that fiction should not be searched just because it is unlikely that fictional references will anticipate patent claims is tantamount to saying that that PTO should not search for prior art when a patent application is directed to very new technology. In such a case, it may be that there is very little prior art that could anticipate the invention. However, it is the PTO's mandate to conduct an examination of the application⁴⁵ to ensure that the issuance of a patent would not appropriate something that was already in the public domain; this is one of the primary reasons Congress insists that patentable inventions be novel.⁴⁶ Thus, the PTO has a statutory duty to conduct an examination ensuring the novelty of inventions regardless of the likelihood that they are anticipated. Therefore, works of fiction cannot be ignored in the examination process solely on the basis that they are unlikely to anticipate. With enabling fictional prior art out there like the Donald Duck comic strip and the

⁴² For example, the only significant information disclosed in *Back to the Future* regarding how to make and use the time machine was (1) the outward appearance of the flux capacitor, (2) that plutonium was required to produce 1.21 gigawatts of power, and (3) that the DeLorean needed to reach the speed of 88 mph in order to travel through time. *BACK TO THE FUTURE*, *supra* note 39. From these facts alone, a PHOSITA could surely not proceed to construct a time machine without undue experimentation.

⁴³ As of the date of this publication, neither time machines nor teleporters have been invented or sufficiently disclosed in fiction. For this reason, the title of this paper ("Keeping Time Machines and Teleporters in the Public Domain") is somewhat facetious.

⁴⁴ *See supra* Part I (discussing how a Donald Duck cartoon and the science fiction novel *Stranger in a Strange Land* anticipated real world inventions).

⁴⁵ 35 U.S.C. § 141 (Supp. III 2003) (amending 35 U.S.C. § 141 (2000)).

⁴⁶ *Id.* (requiring examination of "the alleged new invention"); *See also* MUELLER, *supra* note 32, at 136.

Robert Heinlein novel discussed above, searching fiction is a proper if not mandatory part of patent examination.

B. Works of Fiction Should Not Be Considered Printed Publications Under § 102

Even when inventions are in fact anticipated by fictional references, there are policy questions of whether they should be allowed to destroy the novelty of an invention in the same way as a non-fiction technical reference. Under the meaning of § 102, printed publications must be “sufficiently accessible to the public interested in the art.”⁴⁷ One could argue that a work of fiction is not the sort of reference that would naturally be consulted by inventors to help them with their invention, and thus the fiction should not be deemed a printed publication for anticipation purposes. Technical references are certainly more “fitted to inform the craft”⁴⁸ in that they are often specifically geared towards an audience of PHOSITAs. However, an anticipatory reference need not be directed as such;⁴⁹ the standard for what constitutes a printed publication focuses on a member of the public who is interested in the art and not on a PHOSITA.⁵⁰ Thus, as long as an interested member of the public would reasonably be able to obtain the reference, that reference can anticipate. Works of fiction are regularly accessed by the public in libraries and stores across the nation, and are typically easier to come by than technical

⁴⁷ *In re Klopfenstein*, 380 F.3d 1345, 1348 (Fed. Cir. 2004).

⁴⁸ *Jockmus v. Leviton*, 28 F.2d 812, 813-14 (2d Cir. 1928) (noting that a freely circulated catalogue which “goes direct to those whose interests make them likely to observe and remember whatever it may contain that is new and useful” is better at informing the PHOSITAs of a particular art than a single book in a library).

⁴⁹ References used to support a finding of obviousness under 35 U.S.C. § 103 are required to be analogous art. *See infra* Part III.D.

⁵⁰ This is not a mere semantic distinction. The courts clearly know what a PHOSITA is, but do not discuss the legal determination of whether a reference is a printed publication in terms of a PHOSITA. *See, e.g.*, *Klopfenstein*, 380 F.3d at 1348 (noting that “dissemination and public accessibility are the keys” for that determination).

or scientific documents.⁵¹ Therefore, as a general matter, works of fiction are sufficiently accessible to the interested public to be printed publications under § 102.

C. Fiction Too Easily Obviates Inventions

Even if an invention is not anticipated under § 102, it still must be non-obvious under § 103 to be patentable.⁵² If a PHOSITA would have found the invention as a whole to be obvious at the time it was made, then the inventor is not entitled to a patent under § 103.⁵³ To be deemed obvious, there must be some suggestion, motivation, or teaching toward the claimed invention.⁵⁴ The suggestion can come from the teachings in the prior art, the knowledge of the PHOSITA, or the nature of the problem to be solved.⁵⁵ In addition, a PHOSITA must have a reasonable expectation of success in making or using the claimed invention.⁵⁶ For example, suppose that reference A discloses a race car and explains how it is used for racing. Reference B teaches that material X exhibits frictional qualities that would be superior to rubber when used in tires at high speeds. In that case, a race car with tires made from material X would presumably be an obvious and unpatentable invention. The combination of A and B is suggested by reference B, and provides a reasonable expectation that it will yield a better race car.

⁵¹ Many works of fiction in the public domain can be even found online for free at sites like Project Gutenberg. Gutenberg.org, Main Page - Gutenberg, <http://www.gutenberg.org> (last visited Jan. 7, 2007). Google has also created a book search system that includes copyrighted works. *See infra* Part II.E.i.a.

⁵² 35 U.S.C. § 103 (2000).

⁵³ *Id.*

⁵⁴ *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991).

⁵⁵ *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

⁵⁶ *Id.*

References relied upon to show obviousness do not need to be enabling⁵⁷ as long as they provide the suggestion and reasonable expectation of success. In our previous example, reference B does not need to enable a PHOSITA to make a tire out of material X, let alone a race car with such tires. It is enough for reference B to suggest the advantages of using material X for tires. Moreover, even if a reference discloses an inoperable device, it can still be used to support a finding of obviousness; the reference is prior art for whatever it teaches.⁵⁸

Fiction is overflowing with teachings, motivations, and suggestions that could potentially obviate inventions. Fundamentally, the subject matter of fiction does not exist; the disclosures are mostly about people, places, and things that are not real. The mere fact that useful inventions disclosed in fiction are not real provides motivation to make them. Thus, with no enablement or operability requirement for obviousness references, anything disclosed in fiction that appears to be useful could potentially render a real world version of it obvious. From ray guns, flying cars, and artificial intelligence to medical treatments, business methods, and new uses for old products, fiction can potentially obviate a tremendous number of valuable inventions. If such references are used in obviousness rejections, it may discourage real world inventors from making them if they are unable to obtain patents.

From the disclosure of the time machine in *Back to the Future*, it is safe to assume that if somebody invented an operable flux capacitor, placing it into a Delorean (or any other automobile) to make a time machine would be an obvious invention. However, this is not a very troublesome situation. The inventor of the flux capacitor could still obtain a patent on that device by itself, which would afford the inventor an appropriate scope of protection for the

⁵⁷ *Loral Fairchild Corp. v. Victor Co. of Japan*, 931 F. Supp. 1014, 1026-27, (E.D.N.Y. 1996) (“A non-enabling document . . . still qualifies as prior art for obviousness purposes.” (citing *Symbol Tech., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991))).

⁵⁸ *Beckman Instruments v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989).

invention.⁵⁹ A real flux capacitor would most likely be nonobvious since the scant disclosure in the film is insufficient to teach or suggest all the elements of the device, or to support a reasonable expectation of success. Patent examiners are capable of determining when a disclosure sufficiently obviates an invention, so there is no reason to think that fictional works will be unduly cited against applicants seeking to patent very new technology.

Inventions like the time machine in *Back to the Future* are not problematic to real world inventors because the vital technology of the invention does not exist at the time that the fictional work is made. It is a different situation when the technology behind the invention exists, or at least substantially exists, at that time. Where the technology involved is simpler, better known, or more predictable, a fictional disclosure is more likely to include details of the invention that support a reasonable expectation of success. For example, consider the hot air balloon⁶⁰ and submarine⁶¹ disclosed in Jules Verne's fictional works. The technology in those books is much simpler and older than that of time travel, and so Verne was able to provide fairly detailed descriptions of the inventions. Thus, Verne could more easily provide the necessary teachings to support a finding of obviousness than could the writers of *Back to the Future*.

However, a finding of obviousness depends on more than just the prior art itself and the differences between the prior art and the claimed invention.⁶² The level of ordinary skill in the

⁵⁹ A patent on the flux capacitor would be even broader than a patent on a flux capacitor in a Delorean. Any making, use, offer for sale, sale, or importation of a flux capacitor would infringe the patent, regardless of the vehicle in which it is used. 35 U.S.C. § 271(a) (2000).

⁶⁰ JULES VERNE, FIVE WEEKS IN A BALLOON: A VOYAGE OF EXPLORATION AND DISCOVERY IN CENTRAL AFRICA 10-17 (Samson Low, Marston, Low, & Searle 2d ed. 1874) (1863).

⁶¹ JULES VERNE, 20,000 LEAGUES UNDER THE SEA 77-83 (HarperCollins 2000) (1870).

⁶² *Graham v. John Deere*, 383 U.S. 1, 17 (1966) (holding that “the scope and content of the prior art” and “[the] differences between the prior art and the claims at issue” are two factors relevant to the obviousness of an invention).

art and other objective evidence of obviousness must also be evaluated.⁶³ Therefore, even if Verne’s disclosures were enabling or operable, an actual inventor could show that the level of ordinary skill in the arts of fluid mechanics, mechanical engineering, and materials science is fairly low, and that therefore the inventions would not have been obvious to a PHOSITA when they were made (i.e., no reasonable expectation of success).⁶⁴ Also, the inventor could show that the invention has been commercially successful due to its claimed features⁶⁵ (e.g., if competitors were licensing or copying them), that the invention solves a long felt need, or that others have tried and failed to make the invention. Therefore, even if an obviousness rejection appears to be proper based on the prior art, inventors of truly meritorious and sufficiently new inventions have recourse in such factual showings. Thus, there are already sufficient safeguards in place in the patent laws that protect inventors against unduly cited obviousness references.

D. Fiction Should Not Be Considered Analogous Art for Obviousness Purposes

Prior art references relied upon to show obviousness must be analogous art.⁶⁶ There are two ways in which prior art will be deemed analogous: it must be either “in the same field of endeavor” or “reasonably pertinent to the particular problem with which the inventor is involved.”⁶⁷ To be in the same field of endeavor, it is not enough that the reference and the

⁶³ *Id.* (holding that “secondary considerations such as commercial success, long felt but unsolved need, failure of others, etc.” are relevant).

⁶⁴ 35 U.S.C. § 103 (2000) (requiring that obviousness be determined “at the time the invention was made”).

⁶⁵ Evidence of commercial success supports nonobviousness only if the success is causally related to the claimed features of the invention. *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1324 (Fed. Cir. 2004).

⁶⁶ *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992).

⁶⁷ *Id.* at 658-59.

invention merely pertain to the same industry.⁶⁸ Rather, they must both relate to similar objectives within that industry.⁶⁹

Presumably, the vast majority of fictional works are not in the same field of endeavor as technical references. Fiction's field of endeavor is essentially narrative for the purposes of entertainment or commentary. Technical references such as textbooks, scientific journals, patents, and patent applications are in the field of endeavor for their particular scientific objectives. Therefore, if fiction is to qualify as analogous prior art, it will almost certainly have to be in the sense that it is reasonably pertinent to a particular problem.

A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it.⁷⁰

Thus, fiction can be thought of as analogous art for a particular invention if, by virtue of the fictional subject matter, an inventor facing a similar problem would be inclined to consult the work of fiction.

There are some fundamental problems with fiction being considered analogous art in this manner. To illustrate, first consider the previous example of the Donald Duck

⁶⁸ *Id.* at 658.

⁶⁹ *Id.* at 659 (noting that the invention related to *storage* of refined liquid hydrocarbons while the reference related to *extraction* of crude petroleum; the court found that they were in different fields of endeavor despite the fact that they both were related to the petroleum industry).

⁷⁰ *Id.*

sunken yacht cartoon. There, Donald was facing the same problem that inventor Carl Kroyer faced in real life. In this sense, the cartoon was surely reasonably pertinent to the problem faced by Kroyer. Thus, the subject matter of the cartoon lends itself to Kroyer's attention. Even the title of the cartoon, "The Sunken Yacht," tends to suggest that an inventor in Kroyer's situation would logically think to consult it. Thus, on the surface the cartoon seems to be analogous art. Except for one thing: it is a cartoon, a work of fiction. There is a compelling argument that no matter how pertinent a fictional reference may be to a particular problem, a real world inventor would not logically seek out or consult it simply because it is fictional.⁷¹

To further complicate this quandary, consider Robert Heinlein's waterbed from *Stranger in a Strange Land*. There, Heinlein apparently faced a problem that was reasonably pertinent to that facing Charles Hall since they both invented a waterbed. The waterbed was included in Heinlein's story merely to help set the scene in the main character's hospital room.⁷² Although technically disclosed in the pages of the book, the waterbed is only a miniscule part of the book's subject matter. *Stranger in a Strange Land* is about a human being who was born on Mars and subsequently comes to Earth, learning what it means to be human while at the same time teaching the people of Earth how to adapt to him and his views. The book is not about waterbeds. Neither its title, nor its basic plot would indicate that any disclosure of a waterbed is contained within it. Therefore, its overall subject matter would not lend itself to the attention of

⁷¹ Inventors are probably skeptical that authors of fiction could offer meaningful or valuable contributions to their work, since most authors have no technical experience in the inventor's field. Some inventors might even find it offensive to suggest that they should consult fiction for help.

⁷² ROBERT A. HEINLEIN, *STRANGER IN A STRANGE LAND* 12, 47 (Ace Books 1987) (1961).

one attempting to build a waterbed. And yet, inside the book is a detailed disclosure of a waterbed.

The foregoing illustrates a very common example of how inventions are disclosed in works of fiction. Since a fictional work is intended to tell a story, the disclosure of an invention is typically merely a peripheral part of the narrative. It is often included to help bring the characters and their world to life. It does not necessarily move the story forward by itself. However, when such disclosures relate to the same problems faced by an inventor, that fact supports using the reference as analogous art for obviousness purposes,⁷³ and there is authority to support this assertion. Supreme Court cases over the last century have showed a “clear trend to expand the area of analogous art that must be considered prior art.”⁷⁴ The Federal Circuit has followed in kind. In *In re Heune*, a reference about titanium screws used in aircrafts was found to be analogous art for an invention related to absorbable bone screws used inside the human body.⁷⁵ The PTO instructs its examiners to follow this liberal standard for what constitutes analogous art: “for search purposes, a tea mixer and a concrete mixer may both be regarded as relating to the mixing art, this being the necessary function of each. Similarly a brick-cutting machine and a biscuit cutting machine may be considered as having the same necessary function.”⁷⁶

⁷³ *Princeton Biochemicals, Inc. v. Beckman Coulter*, 411 F.3d 1332, 1339 (Fed. Cir. 2005).

⁷⁴ 2 Chisum on Patents § 5.03[a][i] (MB) (2006).

⁷⁵ *In re Heune*, No. 99-1514, 2000 U.S. App. LEXIS 19978, at *14-15 (Fed. Cir. 2000) (noting that despite the great differences between the fields of endeavor and their respective problems, both the inventor and the reference were concerned with stabilizing and maintaining screw alignment). Decision without published opinion 243 F.3d 556.

⁷⁶ U.S. PATENT & TRADEMARK OFFICE, MANUAL FOR PATENT EXAMINING PROCEDURE § 904.01(c) (8th ed., 2001, rev. Aug. 2006), available at http://www.uspto.gov/web/offices/pac/mpep/mpep_e8r5_0900.pdf.

Deeming a prior art reference analogous to a particular invention is to consider it part of the body of knowledge that constitutes ordinary skill in that art, charging the specific patent applicant with constructive knowledge of the reference. If a fictional work contains a disclosure that is reasonably pertinent to the problem an inventor is facing, that work can fairly be considered analogous art regardless of the likelihood that the particular inventor would actually have consulted it. Just as an inventor making bone screws would not likely consult a reference about aircraft construction and an inventor making biscuit slicers would not likely consult references about masonry, an inventor making waterbeds would not likely consult science fiction and an inventor trying to raise sunken ships would not likely consult comic strips. However, surgical inventors are charged with knowledge of aircraft construction and biscuit-related inventors are charged with knowledge of masonry. This is just a natural consequence of using an objective standard (that of a PHOSITA) rather than a subjective one (that of the inventor). Patent law deems the hypothetical PHOSITA reasonably likely to consult certain technical sources that, in reality, a particular inventor may never think to consult.

There is nothing unfair about the patent system acknowledging the reality that sometimes inventors enjoy reading or watching works of fiction.⁷⁷ Waterbed inventors should be charged with knowledge of science fiction and those trying to raise sunken ships should be charged with knowledge of comic books, provided that the particular references are reasonably pertinent. Inventors are part of society and are exposed to the same sources of popular culture in the prior art as everyone else. The PTO can fairly charge inventors with knowledge of fictional works just as it charges them with knowledge of technical references. What matters is that the *disclosure* in

⁷⁷ Some might argue that this goes against the statutory requirement that obviousness be determined from the perspective of a PHOSITA, 35 U.S.C. § 103 (2000), effectively creating a new standard: the PHOSITA who is also an avid reader and movie buff, attending the theater and watching television regularly.

the prior art is analogous, not the type of work in which the disclosure is contained. Therefore, fictional disclosures can properly serve as analogous prior art for the purpose of obviousness if they are reasonably pertinent to the particular problem faced by an inventor – regardless of the likelihood that the particular inventor would actually consult the work.

E. Searching Fiction Could Cause Substantial Increases in Costs and Decreases in Efficiency on Both Sides of the Patent System

There are several pragmatic and economic concerns associated with the patent office searching fiction. This section will explore some of the more compelling effects upon the PTO and the patent applicants.

i. Effects at the PTO

In the face of limited resources and a massive backlog of applications, efficiency is necessarily the magic word for the PTO if it is to improve the quality of its examiners and patents.⁷⁸ There is a compelling argument to be made that the examiners' time would be best spent focusing on technical documents as prior art rather than fiction. Since the prior art search is the crux of the patent examination, this argument relies on probability. Prior art that can properly be the basis of anticipation and obviousness rejections is more likely to be found in technical references than fiction since the purpose of a technical reference is to inform those in the field of the scientific subject matter. Fiction, on the other hand, is primarily for the purpose of entertainment or commentary. The detail of the invention in a technical reference is therefore more likely to anticipate or obviate an invention.⁷⁹ Thus, technical references are better sources of prior art than fictional works in this sense.

⁷⁸ Lemley, *supra* note 17, at 1495-96.

⁷⁹ See *supra* Parts III.A, III.C.

To suddenly enact a requirement that patent examiners search fiction could detract from the quality and quantity of their technical prior art searches unless they spent more time overall in their examinations. At first glance, an obvious solution is to either have examiners spend more time on each application or hire more examiners.⁸⁰ Both of these solutions require significant expense on the part of the PTO, which would also result in added cost to the patent applicants.⁸¹ Moreover, it is difficult to speculate exactly how many invalid patents would be prevented from being issued as a result of even doubling the man-hours spent searching prior art.⁸² Mark Lemley suggests that the increase in rejected applications may not be very substantial.⁸³

The PTO has proposed a different solution in its strategic plan: outsourcing the prior art search to a certified search service (CSS).⁸⁴ Although it is possible that outsourcing could help avoid the potential inefficiency and increased costs at the PTO in searching fiction, this unprecedented proposal has been subject to criticism.⁸⁵ Noting that “the prior art search is a discretionary component of the quasi-judicial examination process,”⁸⁶ John A. Jeffery argues that the search itself involves a substantive examination that should not be outsourced.⁸⁷ Having patent examiners perform the search maintains a certain uniformity, credibility, and reliability that is lost when non-government entities are the ones locating the prior art.⁸⁸ Jeffery suggests,

⁸⁰ Lemley, *supra* note 17, at 1508.

⁸¹ *Id.* These expenses incurred by applicants would not come from the preparation of the patent application, but rather from its prosecution. *Id.*

⁸² *Id.* at 1508-09.

⁸³ *Id.*

⁸⁴ John A. Jeffery, *Preserving the Presumption of Patent Validity: An Alternative to Outsourcing the U.S. Patent Examiner’s Prior Art Search*, 52 CATH. U. L. REV. 761, 762 (2003).

⁸⁵ *Id.* at 762-63.

⁸⁶ *Id.* at 780.

⁸⁷ *Id.* at 790-91.

⁸⁸ *Id.* at 791-96.

however, that outsourcing to a CSS could perhaps be appropriate for searching non-patent literature as a supplement to the examiner's search, particularly in fields where the majority of prior art is not found in patent documents.⁸⁹

Although a CSS may be better equipped to locate certain kinds of non-patent literature,⁹⁰ a non-patent search still involves some substantive examination. Jeffery's proposal is tenable only if the CSS is truly just a supplement to the examiner's own search, which would still include non-patent prior art. This way, the CSS could bring more obscure non-patent documents to the examiner's attention, adding some additional information and guidance to the search. By not giving the CSS full responsibility for the non-patent search, the examiner still maintains control over the substance of the examination.

Ideally, examiners would be able to continue their searches without the aid of a CSS. However, in order to conduct more comprehensive searches without sacrificing quality and efficiency, the PTO will need to follow through with certain goals in its strategic plan: hiring and retaining more examiners, training them more effectively, and improving their ability to locate prior art through the use of information technology.

Mark Lemley has taken the position that the PTO would be ill-advised to invest great amounts of money into conducting more thorough patent examinations.⁹¹ Although the number of invalid patents issued might be reduced, from a cost-benefit perspective, he says that the numbers simply do not support more comprehensive examinations.⁹² Lemley's conclusion, which is based on substantial statistical analysis, hinges upon the fact that the vast majority of

⁸⁹ *Id.* at 799.

⁹⁰ *Id.*

⁹¹ Lemley, *supra* note 17, at 1510-11.

⁹² *Id.*

patents are never litigated or licensed.⁹³ Rather than wasting the PTO's resources on "examining the ninety-five percent of patents that will either never be used, or will be used in circumstances that don't crucially rely on the determination of validity," Lemley proffers that "society ought to resign itself to the fact that bad patents will issue, and attempt to deal with the problem ex post, if the patent is asserted in litigation."⁹⁴

Lemley's position makes economic sense, but ultimately must yield to the public interest in keeping invalid patents from issuing in the first place. His argument is flawed because it assumes that performing more comprehensive examinations necessarily requires that examiners spend much more time per application.⁹⁵ It is true that suddenly requiring examiners to conduct more rigorous and extensive examinations would result in more time and money spent at the PTO. However, if the PTO follows its plan to provide better training to examiners, retain experienced examiners, and utilize information technology tools more effectively, examination efficiency will surely increase.⁹⁶ Better-trained and more experienced examiners will be able to more quickly locate the pertinent prior art and determine if that prior art properly anticipates the invention or renders it obvious. Since these examiners will be able to perform those functions faster, the scrupulousness of examination can then heighten without increasing the time spent per application. While this happens, fiction can become a routine part of the examiners' search without sacrificing the quality of examination.

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ *Id.* at 1508.

⁹⁶ Here, I use the term "examination efficiency" to mean man-hours spent per patent application, not necessarily economic efficiency (money spent by the PTO per application).

a. Practical Problems Searching Fiction: How Google Could Save the Day

Simply hiring more examiners and training them to be more efficient at searching will only go so far with regard to fiction. Fiction is a unique source of non-patent prior art because, quite often, the general subject matter of a fictional work in no way indicates the invention disclosures contained therein.⁹⁷ While a database containing the titles and abstracts of scientific journal articles may be enough to locate the relevant prior art of that sort, such databases of fictional works would be insufficient for locating pertinent fictional prior art. For example, searching for keywords in a library catalog, an internet search engine, or even Amazon.com will not always reveal peripheral invention disclosures in works of fiction. A full text and keyword searchable database of fictional works would be needed to ensure that such disclosures are found.⁹⁸

Google recently launched an enormous book marketing venture which provides the first ever vehicle for effective and efficient searching of fictional prior art: the Google Book Search Project.⁹⁹ With the help of publishers¹⁰⁰ and libraries,¹⁰¹ Google has been scanning the full text of millions of books into their databases. The stated goal of the project is to “make the full text of all the world’s books searchable by anyone.”¹⁰² The system allows users to search the full text of books in order to discover ones of interest or relevance. Google does not, however, provide

⁹⁷ See *supra* Part III-D.

⁹⁸ Books in Project Gutenberg are not full text searchable, and are limited to those works in the public domain. See Gutenberg.org, *supra* note 50.

⁹⁹ Google.com, Google Book Search, <http://books.google.com/intl/en/googlebooks/about.html> (last visited Jan 7, 2007).

¹⁰⁰ Google.com, Google Book Search: Partner Success Stories, <http://books.google.com/googlebooks/success.html> (last visited Jan 7, 2007).

¹⁰¹ Google.com, Google Book Search Library Project, <http://books.google.com/googlebooks/library.html> (last visited Jan 7, 2007).

¹⁰² Google.com, Official Google Blog: Making Books Easier to Find, <http://googleblog.blogspot.com/2005/08/making-books-easier-to-find.html> (last visited Jan 7, 2007).

the actual books to the users; rather, Google provides the user with information on where they can purchase or borrow the book from third party booksellers or libraries.¹⁰³ The contents of every book can then be searched for keywords; the results show how the search terms appear in the context of the book.¹⁰⁴

However, the full text of the books will not be generally available to the user; the amount of text that can be viewed depends on whether the book is under copyright protection or is in the public domain.¹⁰⁵ Users will be able to browse the full text of books in the public domain.¹⁰⁶ For books that are under copyright, the user can see their search terms as they appear within a few snippets of text from the book, and with the copyright owner's permission, may be able to browse a few pages of the book as well.¹⁰⁷

Google faces some substantial obstacles in the book search project, particularly with regard to the works presently under copyright. Obtaining licenses and permission from each copyright holder would be an extremely onerous ordeal, especially in the case of "orphan" works whose authors are unavailable or difficult to find.¹⁰⁸ To avoid these hardships, Google's strategy has been to scan books into their database without regard to copyright, but allow the copyright holders to remove their works from the system if they so desire.¹⁰⁹ This controversial opt-out strategy goes against traditional notions of copyright law. Typically, one who desires to copy or distribute a work protected by copyright must first secure permission from the copyright

¹⁰³ Google.com, *supra* note 99.

¹⁰⁴ Emily Anne Proskine, *Google's Technicolor Dreamcoat: A Copyright Analysis of the Google Book Search Library Project*, 21 BERKELEY TECH. L. J. 213, 217-18 (2006).

¹⁰⁵ *Id.* at 218.

¹⁰⁶ Google.com, *supra* note 99.

¹⁰⁷ *Id.*

¹⁰⁸ Proskine, *supra* note 104, at 218-19.

¹⁰⁹ *Id.* at 219.

holder.¹¹⁰ Even absent the opt-out provision, Google maintains that its book search project complies with copyright law under the doctrine of fair use.¹¹¹

Whether use of a copyrighted work is considered to be “fair” depends on four factors: (1) “the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes,” (2) “the nature of the copyrighted work,” (3) “the amount and substantiality of the portion used in relation to the copyrighted work as a whole,” and (4) “the effect of the use upon the potential market for or value of the copyrighted work.”¹¹²

Here, Google’s use of the copyrighted works is not primarily commercial since it does not make a profit by directly supplying the books to the users or making their full texts available. Rather, Google is primarily creating a vehicle to help users find books they may wish to read or consult. The transformative nature of the use is also considered when evaluating the “purpose and character of the use.”¹¹³ Here, Google’s scanning of the books’ texts serves a new purpose beyond merely copying and distributing: the copied text is placed into a database that enables users to search the full text of the entire library in a matter of seconds, visualize their results, and get connected to a place where the user could purchase or borrow the book.¹¹⁴ Although Google does profit from selling advertising on its website, the marketability of the system is due more to the full text searching than the act of copying the individual books.¹¹⁵ Thus, the nature of Google’s use tends to weigh in favor of fair use.¹¹⁶

¹¹⁰ *Id.*

¹¹¹ *Id.* at 221-22.

¹¹² 17 U.S.C. § 107 (2000).

¹¹³ *Id.* § 107(1).

¹¹⁴ Proskine, *supra* note 104, at 227.

¹¹⁵ Surely the Google Book Search Project is more marketable the more books are copied into it. However, it is the full text keyword searching of the entire database that distinguishes Google’s system from all other libraries and makes it especially valuable.

¹¹⁶ Proskine, *supra* note 104, at 226.

Since Google is copying many creative (as opposed to factual) works from libraries in their entirety, fair use factors (2) and (3) seem to weigh against Google.¹¹⁷ However, since the works of fiction are already published, that factor weighs in favor of Google.¹¹⁸ Whether Google's project will negatively affect the "potential market for or value of the copyrighted work"¹¹⁹ is a question being strongly debated by publishers.¹²⁰ Ultimately, it seems very likely that this factor will also weigh in favor of fair use since Google's use is intended to guide people to where they can legitimately obtain copies of the books.¹²¹ Arguably, Google's project will actually improve the publishers' market since it will lead users to those books that they would not otherwise have found.¹²² Given the opt out provision, the transformative nature of Google's use, and the absence of competition with publishers, the fair use factors will likely balance in favor of Google.¹²³

Since the PTO lacks the resources to create a book search system like Google's of its own, the Google Book Search Project may be the only tool presently available for examiners to locate pertinent fictional prior art. However, the Google database is only as useful to the PTO as the database is comprehensive. If too many copyright holders opt out of the system, then its usefulness in locating the pertinent fictional prior art diminishes. Ultimately, Google's use of copyrighted works may well be upheld as fair even without the opt-out provision.¹²⁴ The courts may likely find Google's use to be fair, particularly in light of the strong public interest in

¹¹⁷ *Id.* at 227-28. Creative works are afforded more protection than factual ones since facts are in the public domain and cannot be appropriated. *Id.*

¹¹⁸ *Id.* Authors of published works have already chosen to disseminate them, so the works are given less protection. *Id.*

¹¹⁹ 17 U.S.C. 107(4) (2000).

¹²⁰ Proskine, *supra* note 104, at 229.

¹²¹ *Id.*

¹²² *Id.* at 230.

¹²³ *Id.* at 232.

¹²⁴ *Id.*

allowing the project to proceed.¹²⁵ Surely, if Google's use of such a system is fair, then the PTO's internal use would be even more so. The character of the PTO's use would be farther removed from any commercial exploitation of the copyrighted works than Google's use. Using such a database to perform the quasi-judicial government function of patent examination weighs heavily in favor of fair use.¹²⁶ Also, such use by the PTO would not be apparent or available to the public, and so would not detract at all from publishers' capacity to sell books. Therefore, the PTO's use of Google's Book Search System (or any similar system) to accomplish a fictional prior art search would almost certainly be fair.

ii. Effects on Patent Applicants

The process of filing and prosecuting a patent is already a long and expensive ordeal, usually taking around three years and costing applicants between \$10,000 and \$30,000.¹²⁷ A more thorough examination, which includes searching fiction as proposed herein, could potentially add to these costs.¹²⁸ While the initial cost of preparing and filing the application will not be substantially affected, the costs to prosecute the application may increase due to examiners uncovering more prior art to serve as bases for their rejections.¹²⁹ Patent applicants will need to invest more time and money to overcome such rejections. These increased costs, along with the decreased likelihood of actually obtaining a patent, might deter inventors from

¹²⁵ *Id.* There are numerous invaluable benefits to having a full text keyword searchable library available aside from connecting consumers to books of interest. The ease and speed at which knowledge and scholarship can be accessed by anyone with a computer is a phenomenal accomplishment by Google. The Google Book Search Project is one of the most significant steps toward the free and widespread dissemination of information since the invention of the printing press.

¹²⁶ *See* 4 Nimmer on Copyright § 13.05[D][2] (MB) (2006) (noting that reproductions of works in connection with judicial proceedings are usually fair since they serve a different qualitative function than the original work).

¹²⁷ Lemley, *supra* note 17, at 1498.

¹²⁸ *Id.* at 1508.

¹²⁹ *Id.*

even applying.¹³⁰ The specter of inventors avoiding the patent system altogether is a troublesome thought; having the PTO function as a centralized source for the dissemination of new inventions is one of the most effective ways to “promote the progress of science and the useful arts.”¹³¹ However, it also goes against the purpose of the patent system to improvidently grant patents to undeserving inventors.

Having to negotiate and argue with the PTO over prior art is part of the quid pro quo of getting a patent; overcoming examiners’ rejections to secure a patent is nothing new. If the PTO sees fit to search for additional prior art, such a decision is surely within its mandate to “make a thorough investigation of the available prior art.”¹³² However, if the PTO searches fiction, some might argue that there is a greater likelihood that the fictional prior art cited against the patent applicants will be improper for anticipation and obviousness purposes.¹³³ For example, the PTO may cite a fictional book as an anticipation reference when, in fact, the book’s disclosure falls short of being enabling. Such prior art is a “nuisance”¹³⁴ to patent applicants.

David S. Wainwright defines nuisance prior art to be “that art which may literally appear to anticipate or obviate a subsequent real invention in the eyes of a layman, but which actually doesn’t in the eyes of one of ordinary skill in the field.”¹³⁵ Nuisance prior art annoys patent applicants because it can be a difficult ordeal to overcome it. Patent applicants may have to come forward with substantial evidence to show that a reference is lacking sufficient disclosure to: (1) enable the invention, (2) strictly anticipate the invention, (3) suggest, teach, or motivate

¹³⁰ *Id.* at 1509.

¹³¹ U.S. CONST. art I, § 8, cl. 8.

¹³² 37 C.F.R. § 1.104(a) (2006).

¹³³ *See supra* Parts III.A, III.C.

¹³⁴ David S. Wainwright, *Patenting Around Nuisance Prior Art*, 81 J. PAT. & TRADEMARK OFF. SOC’Y 221, 221 (1999).

¹³⁵ *Id.*

the invention, or (4) support a reasonable expectation of success in making or using the invention.¹³⁶ When faced with nuisance prior art, patent applicants may decide to abandon their applications. Some may do so because they believe that the reference actually does anticipate or obviate their invention, while others may recognize that the reference is “technical junk,” but opt to abandon protecting their invention in light of the cost-prohibitive burden of disqualifying the reference.¹³⁷

Since these evidentiary showings and arguments can be quite costly, patent applicants may choose to “patent around” the nuisance art and still obtain meaningful patent protection for their invention.¹³⁸ One of the most effective ways for patent applicants to accomplish this is to distinguish their inventions from the nuisance art by emphasizing what disclosure or teaching the nuisance art lacks, and limiting their own invention claims in that particular regard.¹³⁹ Concededly, this is an imperfect solution to a nuisance prior art problem; patentees will still be stuck with claims that are narrower in scope than those to which they may have actually been entitled.

Fiction certainly has the capacity to be a frequent source of nuisance prior art. However, that argument presupposes that fiction will be cited improperly more often than technical references. There is simply no support for such an assertion; the standard for whether a reference is a proper anticipation or obviousness reference is independent of what type of reference it is. Any given document is either enabling or it is not; it is either analogous art or it is not. Examiners are equally competent to make those determinations with regard to fictional

¹³⁶ See *supra* Parts III.A, III.C.

¹³⁷ *Id.* at 222.

¹³⁸ *Id.* at 226.

¹³⁹ *Id.* For example, if the nuisance art is nonenabling because of a lack of description of element X or step Y, one could emphasize the importance of those components and include them explicitly in the claims. *Id.* at 227.

works and technical documents. Moreover, as the PTO improves the quality of examiners' training and retains more experienced examiners, the amount of nuisance prior art cited against applicants will surely decrease. Better trained and more experienced examiners are inherently more capable of detecting when prior art references are lacking certain disclosures required by the patent laws. Also, examiners are called upon to cite only the "best" prior art references, not all of them; a questionable reference will not be cited if there is better, more illustrative prior art available.¹⁴⁰ Thus, searching fiction will not likely have a substantial effect deterring inventors from utilizing the patent system.

F. Fictional Authors' Intent in Creating their Works Does Not Justify their Use in Anticipation and Obviousness Rejections

When authors of fiction include invention disclosures in their works, their intent in doing so raises some policy questions as to whether such disclosures should be considered by the PTO at all. Most authors do not purport to create a useful and operable invention in their fictional works, let alone commercialize any such invention. Conceivably, however, some authors may nevertheless disclose a useful and operable invention while knowing practically nothing about the art to which it pertains. Such authors may not even think that the invention would work. When authors do not appreciate the value of their own work, it is arguably unfair to deem such a disclosure an anticipatory or obviating event. Precluding real inventors who did appreciate the value of the invention from obtaining a patent may be contrary to one of the goals of the patent system: encouraging prompt and full disclosure of inventions so that they may benefit the public.¹⁴¹

¹⁴⁰ 37 C.F.R. 1.104(c) (2006).

¹⁴¹ *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 607 (1950) (noting that disclosure of inventions is "one of the primary purposes of the patent system").

An inventor who files a patent application is helping to share the information with the PHOSITAs of that field more effectively than an author of fiction. PHOSITAs can easily locate relevant inventions in patents and published patent applications by searching the PTO database. In this way, the latest technology is effectively disseminated to those who work in the field, and society benefits as a result. Even when they contain pertinent invention disclosures, works of fiction are not usually directed toward PHOSITAs, but rather are directed to the public at large for entertainment purposes. Thus there is an argument that the PTO should disregard disclosures in fiction because the authors of such works are not trying to benefit the scientific community. To allow fictional invention disclosures to anticipate or obviate real inventions would provide a disincentive for inventors who are trying to benefit the scientific community to apply for patents. This could hinder the progress of science rather than promote it.¹⁴²

When an author of fiction discloses an invention without appreciating it, similar policy considerations are implicated as when an invention is inherently disclosed in the prior art¹⁴³, but the prior “inventor” was unaware.¹⁴⁴ In *Tilghman v. Proctor*,¹⁴⁵ the plaintiff patented a method for separating the components of fats and oils.¹⁴⁶ A different person had previously used tallow to lubricate steam engines, which by chance ended up separating out the fat acid from the tallow.¹⁴⁷ This event inherently disclosed the patented method in the sense that one might have been able to deduce the process by which the fats and oils were separated, even though it wasn’t

¹⁴² See *supra* Part II.E.ii.

¹⁴³ An invention would be inherently anticipated if an element of the invention was not explicitly disclosed by the prior art reference, but must necessarily be present. *Smithkline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343 (Fed. Cir. 2005). For example, if a prior art document discloses a method involving water at a temperature of 10° F, it is inherent that the water is frozen.

¹⁴⁴ See generally, MUELLER, *supra* note 32, at 129-30.

¹⁴⁵ 102 U.S. 707 (1881).

¹⁴⁶ *Id.* at 708.

¹⁴⁷ *Id.* at 711.

understood at the time.¹⁴⁸ The Court noted that since the patented process was “never fully understood” as performed in the steam engine, those who might have found it to be useful “never derived the least hint from this accidental phenomenon.”¹⁴⁹ There were other prior art examples of supposed inherent anticipation, where those performing the process also didn’t appreciate its value.¹⁵⁰ As to these events, the court noted:

They revealed no process for the manufacture of fat acids. If the acids were accidentally and unwittingly produced, whilst the operators were in pursuit of other and different results, without exciting attention and without its even being known what was done or how it had been done, it would be absurd to say that this was an anticipation of Tilghman’s discovery.¹⁵¹

This was the Court’s view in 1881, and it seems that it would strongly oppose the use of fictional prior art where the authors do not understand or recognize the worth of their invention disclosures.

Despite this landmark Supreme Court case, recent Federal Circuit decisions have taken the opposite viewpoint. The current view is that a reference can inherently anticipate an invention regardless of any recognition in the prior art.¹⁵² A PHOSITA does not need to recognize that the invention or any particular feature of it was present in the prior art at the time the prior art was created.¹⁵³ Similarly, even if an author of fiction is unaware that an invention disclosed in their work is actually useful, and even if the invention disclosure was accidental, the

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Tilghman*, 102 U.S. at 711-12.

¹⁵² *See Smithkline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343 (Fed. Cir. 2005); *Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1321 (Fed. Cir. 2004); *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1378 (distinguishing *Tilghman* since it wasn’t clearly shown that the claimed process was actually performed in the prior art); *See also* MUELLER, *supra* note 32, at 130-31.

¹⁵³ *See Smithkline Beecham Corp.*, 403 F.3d at 1343; *Toro Co.*, 355 F.3d at 1321; *Schering Corp.*, 339 F.3d at 1378 (distinguishing *Tilghman* since it was not clearly shown that the claimed process was actually performed in the prior art); *See also* MUELLER, *supra* note 32, at 130-31.

disclosure will likely be allowed to serve as anticipatory prior art. Also, patent law does not currently look to the author's subjective purpose in writing their works to determine if an invention satisfies the statutory requirement that an invention be "useful."¹⁵⁴ The PTO looks from the perspective of the PHOSITA; if a PHOSITA would recognize a specific, substantial, and credible utility from the disclosure, the invention satisfies the utility requirement.¹⁵⁵

Thus, there is no good reason to categorically exclude fiction as prior art on the basis that authors do not intend to invent or do not appreciate the value of their invention disclosures. It is important to note that there are many authors with scientific backgrounds who may in fact be attempting to invent in their works, even if the inventions are solving problems in a fictional setting. For example, Michael Crichton has a technical background and graduated from Harvard medical school.¹⁵⁶ Many of his novels deal with how scientists respond to fictional situations, and those responses could have real world utility.¹⁵⁷ Finally, it should be noted that some authors are also actual inventors. Samuel Clemens, better known by his pen name, Mark Twain, obtained three patents during his lifetime.¹⁵⁸

¹⁵⁴ 35 U.S.C. § 101 (2000).

¹⁵⁵ U.S. PATENT & TRADEMARK OFFICE, MANUAL FOR PATENT EXAMINING PROCEDURE § 2107 (8th ed. 2001, rev. ed. Aug. 2006), *available at* http://www.uspto.gov/web/offices/pac/mpep/mpep_e8r5_2100.pdf.

¹⁵⁶ MichaelCrichton.com, About Michael Crichton, <http://www.michaelcrichton.com/aboutmc/biography.html> (last visited Jan. 7, 2004).

¹⁵⁷ For example, *The Terminal Man* is a story about an epileptic who is subjected to a revolutionary, but plausible treatment. Electrodes are placed into his brain to deliver an electric shock, offsetting the voltage which causes his seizures. Crichton describes the procedure in detail. MICHAEL CRICHTON, *THE TERMINAL MAN* 21 (Avon Books 2002) (1972).

¹⁵⁸ P.J. Federico, *Mark Twain as an Inventor*, 85 J. PAT. & TRADEMARK OFF. SOC'Y 50, 53 (Supp. 2003) (Twain's patents were for: (1) improved adjustable and detachable garment straps, (2) a self-pasting scrap book, and (3) a game to help players remember important historical dates).

IV. FICTION MUST BE SEARCHED TO MAINTAIN THE INTEGRITY OF THE PATENT SYSTEM

There are numerous and substantial costs to society when the PTO grants an invalid patent. Patentees may opportunistically license their patents to competitors who are paying the excessive royalties only as an alternative to litigating the validity of the patent.¹⁵⁹ Alternatively, competitors may waste resources in an attempt to design their activities around the patent or even abandon their research altogether for fear of getting sued for infringement.¹⁶⁰ Litigating patent validity is very costly in terms of both money and time and can result in several years of uncertainty as to the legal rights of both patentees and their competitors. This uncertainty can leave all parties hesitant to proceed in their business or research.¹⁶¹ Financiers may choose to invest in companies because of their patent portfolios, but if the portfolios contain invalid patents, those investments take away money from more deserving companies.¹⁶² Consumers may be forced to pay exorbitant prices for products covered by bad patents.¹⁶³ Finally, the credibility of the patent system suffers when too many invalid patents are granted; this makes valid patents seem less valuable overall and harms innovation.¹⁶⁴ These are all legitimate and serious concerns since they tend to impede the “progress of science and the useful arts.”¹⁶⁵ If the PTO can decrease the number of improvidently granted patents, society would greatly benefit by reducing the specter of all these harmful societal costs.

¹⁵⁹ Lemley, *supra* note 17, at 1517.

¹⁶⁰ *Id.* at 1516-17.

¹⁶¹ *Id.* at 1520.

¹⁶² Jay P. Kesan, *Carrots and Sticks to Create a Better Patent System*, 17 BERKELEY TECH. L. J. 763, 767 (2002).

¹⁶³ *Id.* at 767-68.

¹⁶⁴ Lemley, *supra* note 17, at 1522.

¹⁶⁵ U.S. CONST. art I, § 8, cl. 8.

From an economic standpoint, Mark Lemley asserts that putting more time, effort, and money into patent examinations is a poor solution to the problem of invalid patents.¹⁶⁶ Lemley posits that “litigation of a few patents is a far more efficient way of determining validity than giving a detailed ex ante examination to all patents.”¹⁶⁷ Demanding that the PTO ensure validity of all its patents may be tantamount to asking it to perform miracles.¹⁶⁸ In light of significant budgetary constraints and overwhelming numbers of patent applications to examine, it is not feasible to ask that the PTO spend as much time on each application as would be spent by an attorney litigating the patent’s validity.¹⁶⁹ Patent attorneys are likely to spend as much time in a single week of litigation as a patent examiner may spend on the entire patent prosecution.¹⁷⁰ However, simply increasing the quantity of examination is unlikely to make a significant difference unless the quality of examination is improved.¹⁷¹

Although perfect examinations may be an impossible goal to reach, it is nevertheless a goal worth striving for. Of course, reaching this goal must be attempted within the means available to the PTO. If more examiners are hired, retained, and well-trained, and the PTO succeeds in utilizing better information technology as an examination tool,¹⁷² examinations can become both more efficient and more thorough.¹⁷³ In light of the strong public interest in the PTO not granting invalid patents, the PTO must continually strive to improve examiner efficiency and increase the quality of examination.

¹⁶⁶ Lemley, *supra* note 17, at 1514.

¹⁶⁷ *Id.*

¹⁶⁸ Kesan, *supra* note 162, at 765.

¹⁶⁹ *Id.* at 765-66.

¹⁷⁰ *Id.*

¹⁷¹ *Id.* at 766.

¹⁷² Uspto.gov, *supra* note 19.

¹⁷³ *See supra* Part III.E.i.

Searching fiction is one of many ways to improve the patent system with respect to patent validity.¹⁷⁴ The more pertinent prior art that is considered by the patent examiner, the more likely it is that an issued patent will be valid.¹⁷⁵ With the advent of the Google Book Search Project, patent examiners finally have the tools available to conduct meaningful prior art searches of fictional works. Properly trained examiners will be able to quickly locate the relevant disclosures within the books' texts and recognize whether the disclosure properly anticipates or obviates the invention. While initially the extent of fiction searching may need to be limited to conserve examiners' time, as the PTO's efficiency increases through the strategic plan initiatives, the searches can become more comprehensive.

I will not speculate as to how often works of fiction will actually anticipate or obviate inventions. All I can say is that it can and has happened. Therefore I propose that the PTO initiate a first attempt to incorporate fictional prior art searches into the examination process. For this attempt, the searches should be initially limited to art units in which the technology involved is relatively simple, such as rudimentary mechanical devices or processes. That way, it is more likely that the disclosures in fiction will be substantial and detailed enough to actually anticipate or obviate the claims. Examiners should be trained to use keywords and syntax in a manner that yields an appropriate amount of pertinent fictional prior art to examine. They should also be able to improvise their search strategies to accommodate for the fact that the authors may use different terminology than inventors. Although the full text Google Book Search is essential for searching fiction, examiners can also use other internet sites to search for plot summaries, which

¹⁷⁴ Another way is to create a system of pre-grant third party opposition, where interested persons could challenge a patent's validity at the PTO before it issues. Lemley, *supra* note 17, at 1524. Such a system could end up bringing additional pertinent prior art to the examiner's attention, though it is likely that very few applications would be subject to such proceedings. *Id.* at 1525.

¹⁷⁵ Kahn v. General Motors Corp., 135 F.3d 1472, 1480 (Fed. Cir. 1998).

will help guide them to pertinent sources outside of Google's database.¹⁷⁶ After the PTO has thus incorporated fiction into the examination process for a period of time, it will then be fit to decide how and when to further implement the searches. Meanwhile, society can take comfort in knowing that the PTO is taking steps to look out for the public interest, and is promoting the progress of science and technology by keeping prior art inventions in the public domain.

One of this country's deep-rooted values is a disdain for monopolies, and it is in this spirit that Thomas Jefferson once referred to a patent as an "embarrassment."¹⁷⁷ Jefferson nevertheless supported the grant of a monopoly in the instance of truly meritorious and useful inventions because such a system works to the advantage of society by fostering ingenuity.¹⁷⁸ The "embarrassment of an exclusive patent" is tolerable when it encourages invention, not when it only benefits the patentee personally.¹⁷⁹ Against this historical background, the PTO must strive to improve examination quality to ensure that those patent applications unworthy of protection are rejected. It is bad enough that the PTO grants invalid patents. It would be worse if examination tools like the Google Book Search Project went to waste at the PTO. A key part of "promoting the progress of science and the useful arts" is keeping anticipated or obvious inventions in the public domain so that the inventive community may freely use them. This is best accomplished by conducting a comprehensive prior art search, and that includes works of fiction.

¹⁷⁶ Websites like Wikipedia or Amazon.com would be very useful for this purpose. Amazon.com's "Search Inside" feature also allows users to search the text of some particular books, one at a time, in similar fashion to Google's Book Search Project. Amazon.com, Search Inside, <http://www.amazon.com/gp/help/customer/display.html/002-6507730-2100830?ie=UTF8&nodeId=14061791> (last visited Jan. 7, 2007).

¹⁷⁷ *Graham v. John Deere Co.*, 383 U.S. 1, 9 (1966) (quoting letter from Thomas Jefferson to Isaac McPherson (Aug. 1813), VI Writings of Thomas Jefferson, at 181 (Washington ed.)).

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*