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Alan L. Durham

University of Alabama - School of Law, adurham@law.ua.edu

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Alan L. Durham

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LOST ART AND THE PUBLIC DOMAIN

Alan L. Durham*

ABSTRACT

Because a patentable invention must be novel, and it must embody an advancement that would not have been obvious to persons of ordinary skill, the invention must be compared to the “prior art.” Prior art, in the language of the current Patent Act, includes anything that was already “patented, described in a printed publication, or in public use, on sale, or otherwise available to the public.” With certain qualifications, patent law has always required that prior art have been available to the public. A manuscript describing the claimed invention that had never left its author’s desk drawer would not qualify as a printed publication. But what of prior art that was accessible, but ignored; or that was available at one time, but snatched away or forgotten? Can “lost art” be used to challenge the novelty of a claimed invention? It is an important question because of the light it sheds on what it means for prior art to be “available to the public,” a matter that has been the subject of much attention since the recent adoption of the America Invents Act. It also forces us to consider the character of the public domain as applied in the context of patent law; specifically, whether every addition to the prior art is also a contribution to the public domain and, in consequence, irrevocable. I conclude that courts should be guided by the policy of preserving in the public domain advancements that have already made an enduring contribution to public welfare. Lost art that demonstrably failed to provide any lasting benefit to the public should not count against a later inventor who, in a practical sense, has advanced what the Constitution calls “the Progress of . . . [the] useful Arts.”

* Vice Dean and Judge Robert S. Vance Professor of Law, University of Alabama School of Law, J.D., 1988, University of California, Berkeley. I would like to thank Dean Brandon for his support of my research. Thanks also to Professors William Brewbaker and Fred Vars for their suggestions, and to Penny Gibson of the Law School Library for her assistance in locating source materials.

I. INTRODUCTION

In 1851, Chief Justice Taney delivered the opinion of the Supreme Court in *Gayler v. Wilder*,¹ a case involving a patented safe designed to protect its contents from the danger of fire. The validity of the patent turned on the relevance of an earlier safe made by James Conner, the operator of a stereotype foundry, for his own use.² Conner kept the safe in his counting room for a number of years before it passed out of his hands, to be replaced by a safe of a different type.³ No one knew what had become of the original safe, and there was no evidence that its subsequent owners were aware of its fire-proof construction.⁴ The court considered whether, in light of Conner's efforts, the patentee, Daniel Fitzgerald, could still be considered "the original and first inventor" of the subject matter of the patent.⁵ The patent statute then in effect did not allow a patent in any case where the subject matter had already been "known or used by others."⁶

Although the Court admitted that a "literal construction of these particular words" would invalidate the patent, it did not believe that result would be consistent with the intentions of the legislature.⁷ The statute made an exception for inventions that had been known or used only in foreign countries.⁸ The people of this country would not profit from an invention used only in "remote places"—"[t]he means of obtaining knowledge would not be within their reach; and, as far as their interest is concerned, it would be the same thing as if the improvement had never been discovered."⁹ In such cases, it would be "the inventor here" who would give the invention to the public and "place[] it in their possession."¹⁰ So long as "the inventor here" worked independently—"by the effort of his own genius"—he would be considered the original and first inventor, even though the same thing had, in fact, been invented and used before.¹¹ This showed that the legislature intended to

1. 51 U.S. 477, 478 (1850).

2. *Id.* at 495.

3. *Id.*

4. *Id.* at 495–96.

5. Patent Act of 1836, ch. 357, § 6, 5 Stat. 117, 119 (1836) (current version at 35 U.S.C. § 102 (2012)); 51 U.S. at 496.

6. 51 U.S. at 496.

7. *Id.*

8. *Id.* at 496–97.

9. *Id.* at 497. An invention used in a foreign country and memorialized in the form of a patent or printed publication *would* count against the patentee. That is because through the medium of the patent or printed publication knowledge of the invention would be "given to the world and open to the people of this country." *Id.*

10. *Id.*

11. *Id.*

disregard any prior use of the invention that failed to make it “accessible to the public.”¹²

The Court continued on this theme by considering the case of what it called the “lost arts”:¹³

It is well known that centuries ago discoveries were made in certain arts the fruits of which have come down to us, but the means by which the work was accomplished are at this day unknown. The knowledge has been lost for ages. Yet it would hardly be doubted, if any one now discovered an art thus lost, and it was a useful improvement, that, upon a fair construction of the act of Congress, he would be entitled to a patent. Yet he would not literally be the first and original inventor. But he would be the first to confer on the public the benefit of the invention. He would discover what is unknown, and communicate knowledge which the public had not the means of obtaining without his invention.¹⁴

Applying these principles, the Court held that Fitzgerald might be considered the original and first inventor of the fire-proof safe if a jury determined that Conner’s earlier safe had been forgotten.¹⁵ If it had “passed away from the memory of Conner himself, and of those who had seen it, and the safe itself had disappeared, the knowledge of the improvement was as completely lost as if it had never been discovered.”¹⁶ The benefit of the invention had been supplied to the public only upon its rediscovery by Fitzgerald.¹⁷

Justice Daniel, in a dissenting opinion, found the comparison to the lost arts unpersuasive. First, he doubted whether the actual rediscovery of a lost art could claim “the merit of originality, or be the foundation of exclusive right.”¹⁸ Moreover, he found the analogy strained. The term “lost art,” in his

12. 51 U.S. at 497.

13. *Id.*

14. *Id.*

15. *Id.* at 497–98.

16. *Id.* at 498. If the question is one of public benefit, it is interesting that the Court required Conner himself to forget what he had done. *See id.* at 497. Perhaps the Court speculated that if Conner remembered his design he might have revived it at a later time, eventually providing the public with a fireproof safe without any need for Fitzgerald. *See id.* On the other hand, if Conner had been reminded of his otherwise forgotten efforts only by the success of Fitzgerald’s safe, his recollection would not matter. *See id.* at 498 (noting that Fitzgerald’s design “was not the less new and unknown because Conner’s safe was recalled to his memory by the success of Fitzgerald’s”). Under those circumstances, Fitzgerald would still have been essential to providing the public with the benefit of the design. *See id.*

17. *Id.*

18. 51 U.S. at 507 (Daniel, J., dissenting).

view, was “applicable peculiarly to certain monuments of antiquity still remaining in the world, the process of whose accomplishment has been lost for centuries, [and] irretrievably swept from the earth, with every vestige of the archives or records of the nations with whom those arts existed.”¹⁹ In the present case the art had been “lost” for no more than fifteen years, and in such circumstances the Court should defer to the principle expressed in the statute that rights to an invention should be denied to anyone who was not the first to discover it.²⁰ Such a rule was at least “simple and comprehensible,” where the principles adopted by the majority were likely to inspire “uncertainty and confusion,” with their attendant “litigation and mischief.”²¹

The term “lost art” does call to mind the mysterious techniques used by ancient peoples to raise the pyramids of Egypt or the trilithons of Stonehenge—subject matter more appealing to the imagination than construction of a heat-insulated safe. However intriguing they are to contemplate, it is unlikely that the occult arts of antiquity will ever play a role in a patent case except by analogy. Still, putting romance aside, it is legitimate to ask whether, and under what circumstances, prior art of a more modest nature can be “lost” so that it is prior art no longer. Patent law today is no less concerned with the public interest than it was in 1851, and much of what Chief Justice Taney said about the present availability of knowledge as the paramount consideration still rings true. On the other hand, knowledge may be said to enter the public domain when it becomes available to all free of the restraints of intellectual property. One of the defining characteristics of the public domain, according to some definitions, is that what goes in cannot come out, even by action of Congress.²² Is a “lost art” a component of that public domain, irrevocably? Or should the public domain in the context of patent law have a more flexible, time-dependent definition? If so, what does it take for knowledge to become “lost?”

The answers could not be found in the literal terms of the Patent Act of 1836, at least in Chief Justice Taney’s view. It is not certain that they can be found in today’s statute. The most recent language, supplied by the America Invents Act of 2011, appears to place a new focus on the public availability of prior art,²³ perhaps reinforcing Chief Justice Taney’s views on correct patent policy. However, the statute, on its face, denies a patent in cases where the claimed invention was “patented, described in a printed publication, or in

19. *Id.* at 507–08.

20. *Id.*

21. *Id.* at 509.

22. *See infra* note 72.

23. *See infra* notes 141–142 and accompanying text.

public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.”²⁴ It says nothing about the invention *remaining* available, or even *being* available as of that filing date. Perhaps the legislators favored the kind of simple rules that appealed to Justice Daniel, or perhaps they assumed, as most courts seem to have done, that art cannot be lost at all—that whatever is available to the public necessarily remains so. Yet there are situations where that simply is not true, and demonstrating that it is not true may become easier with changes in technology. As we grapple with the meaning of the terms adopted by the America Invents Act, including the question of whether terms like “public use” and “printed publication” mean exactly what they did before, it is worth taking a hard look both at the possibility of “lost art” and at the permanency of patent law’s public domain.

Part II of this article provides an overview of novelty and its place in the general scheme of patent law. Part III examines the specific kinds of prior art that may undermine the novelty of an invention, with particular attention to printed publications and public use. Part IV discusses arguments for and against re-evaluating prior art that had once met the criteria of § 102, but that had ceased to be available to the interested public. I conclude that Chief Justice Taney’s forward-looking emphasis on available knowledge should still be the dominant consideration in defining patent law’s public domain. However, without clarifying legislation, existing case law and the plain meaning of the Patent Act may put obstacles in the way of an optimal treatment of lost art—art, that is, that had the potential to become a permanent feature of the “general store of knowledge,”²⁵ but that demonstrably failed to realize that potential.

II. AN OVERVIEW OF NOVELTY

The United States Constitution gives Congress the power to “promote the Progress of . . . [the] useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries.”²⁶ During the term of a patent, the owner has the exclusive right to make, use, sell, offer to sell, or import into the United States the claimed invention.²⁷ Those exclusive rights provide inventors with an economic incentive to undertake the expense

24. 35 U.S.C. § 102(a) (2012).

25. *See Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481 (1974).

26. U.S. CONST. art. I, § 8, cl. 8.

27. 35 U.S.C. § 271(a) (2012).

and risks associated with technological advancement.²⁸ The Supreme Court discussed the tradeoffs in *Kewanee Oil Co. v. Bicron Corp.*²⁹ Although there are costs to the public in granting exclusive rights, on balance they produce “a positive effect on society through the introduction of new products and processes of manufacture into the economy,” including “increased employment and better lives for our citizens.”³⁰ In order to earn the “reward”³¹ of exclusive rights, an inventor must provide an enabling disclosure of the claimed invention.³² Upon expiration of the patent, “the knowledge of the invention enures to the people, who are thus enabled without restriction to practice it and profit by its use.”³³ The disclosures also serve to “stimulate ideas and the eventual development of further significant advancements in the art.”³⁴ In short, the teachings provided in the patent document constitute “additions to the general store of knowledge . . . of such importance to the public weal” that the government is “willing to pay the high price” of exclusive rights.³⁵

The underlying assumption is that the subject matter of the patent actually represents a contribution to the useful arts. If the purported invention is nothing new, then there is no public benefit to justify the “high price of exclusive rights.” For a colorful description of the danger of patented inventions lacking novelty, one need look no further than *Thompson v. Haight*,³⁶ a case decided under one of the earliest versions of the Patent Act. The court warned that a failure to insist on more than “frivolous and useless alterations” of existing technologies had produced “evils of great magnitude,”

28. See *Kewanee*, 416 U.S. at 480 (referring to “the often enormous costs” of innovation “in terms of time, research, and development”).

29. 416 U.S. 470 (1974).

30. *Id.* at 480.

31. See *id.* (referring to exclusive rights as “this ‘reward for inventions’” (quoting *Universal Oil Co. v. Globe Co.*, 322 U.S. 471, 484 (1944))).

32. See 35 U.S.C. § 112(a) (2012) (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same”); *Streck, Inc. v. Research & Diagnostic Sys., Inc.*, 665 F.3d 1269, 1288 (Fed. Cir. 2012) (explaining that a patent’s enabling disclosure must allow practice of the invention without “undue experimentation”).

33. *Kewanee*, 416 U.S. at 481 (quoting *United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 187 (1933)).

34. *Id.*

35. *Id.*; see also *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989) (“The Patent Clause itself reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the ‘Progress of Science and useful Arts.’”).

36. 23 F. Cas. 1040 (S.D.N.Y. 1826).

as “implements and utensils, as old as the civilization of man” were “by means of some ingenious artifice, converted into subjects for patents.”³⁷ The easy availability of such patents “encourage[d] the flagitious speculations of imposters, and the arrogant pretensions of vain and fraudulent projectors.”³⁸ In other words, the nation was suffering the costs of monopoly without the expected rewards. Yet, from its beginnings to the present day, patent law has been designed with novelty in mind.

The first Patent Act, of 1790, provided for exclusive rights to any applicant who had “invented or discovered any useful art, manufacture, engine, machine, or device, or any improvement therein *not before known or used*.”³⁹ The second Patent Act followed quickly in 1793. It required that the invention be something “not known or used before the application.”⁴⁰ In addition, it provided a defense to infringement in cases where “the thing, thus secured by patent, was not originally discovered by the patentee, but had been in use, or had been described in some public work anterior to the supposed discovery of the patentee.”⁴¹ Thomas Jefferson, who was largely responsible for drafting the Act of 1793,⁴² sharply opposed any patent system that would restrict the public in “the use of what they possessed before.”⁴³ It is worth stressing that the novelty provisions of the 1793 Act concerned events before the date of the patent application *and* events before the date of the patentee’s “supposed discovery.” Either could be said to define what the public “possessed before.”

The Act of 1836 added new language that would survive to the present day. It allowed a patent to be issued only in cases where, before the date of the application, the subject matter had not been “described in any *printed publication* in this or any foreign country,” nor “in *public use or on sale* with the applicant’s consent or allowance.”⁴⁴ The defense, also modified, now applied where the invention “had been described in some public work anterior to the supposed discovery thereof by the patentee, or had been in

37. *Id.* at 1041.

38. *Id.*

39. Patent Act of 1790, ch. 7, § 1, 1 Stat. 109, 110 (emphasis added).

40. Patent Act of 1793, ch. 11, § 1, 1 Stat. 318, 319.

41. *Id.* § 6, 1 Stat. at 322.

42. *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141, 147 (1989).

43. 13 THOMAS JEFFERSON, WRITINGS OF THOMAS JEFFERSON 327 (Monticello ed. 1904). In *Bonito Boats*, the Supreme Court discusses Jefferson’s views and his comparison of a patent that dispossesses the public to *ex post facto* legislation. 489 U.S. at 147.

44. Patent Act of 1836, ch. 357, § 7, 5 Stat. 117, 119 (emphasis added) (current version at 35 U.S.C. § 102(a)(1) (2012)); *see also In re Wyer*, 655 F.2d 221, 226 n.3 (C.C.P.A. 1981) (crediting the 1836 Act with introducing the “‘printed publication’ bar”).

public use, or on sale, with the consent and allowance of the patentee before his application for a patent.”⁴⁵ The Act of 1839 introduced a two-year grace period for events occurring before the date of the patent application,⁴⁶ while removing the requirement that such events have occurred without the applicant’s consent.⁴⁷ In 1870, the term “public work” disappeared. Now the defense simply applied where the invention “had been patented or described in some printed publication prior to his supposed invention or discovery thereof.”⁴⁸

Today, two sets of novelty rules are in play. The first set, adopted in the 1952 Patent Act, applies to patents and patent applications with effective filing dates prior to March 16, 2013. In the discussion that follows, I will refer to those rules using the version of § 102 that predated the recent revisions.

Section 102(b) concerns events that occurred more than one year before the filing of the patent application—a date known as the “critical date.” Adopting some of the same terminology introduced in 1836, § 102(b) disallows a patent where, before the critical date, “the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country.”⁴⁹ Section 102(a), in contrast, concerns events prior to the applicant’s or patentee’s date of invention. Section 102(a) disallows a patent where, before the date of invention, the same invention “was known or used by others in this country, or patented or described in a printed publication in this or a foreign country.”⁵⁰ Section 102(g) provides an additional rule, and one that was central to the first-to-invent patent system. Section 102(g) disallows a patent if “before the applicant’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.”⁵¹

45. § 15, 5 Stat. at 123.

46. Ch. 88, § 7, 5 Stat. 353, 354. In 1939, a revised statute shortened the grace period to one year. Ch. 450, § 1, 53 Stat. 1212, 1212.

47. See *Elec. Storage Battery Co. v. Shimadzu*, 307 U.S. 5, 19 (1939) (“This court construed the [1839] Act, which has been carried forward into the revised statutes, as rendering prior public use a bar whether the use was with or without the consent of the patentee.”).

48. Patent Act of 1870, ch. 230, § 61, 16 Stat. 198, 208. In *I.C.E. Corp. v. Armco Steel Corp.*, 250 F. Supp. 738, 740–41 (S.D.N.Y. 1966), the court viewed “public works” as a potentially a more limited class than “printed publications,” the latter including works printed in any form and distributed to any extent, but found that any distinction intended by Congress had been ignored by the courts.

49. Patent Act of 1952, ch. 950, § 102(b), 66 Stat. 797, 797 (current version at 35 U.S.C. § 102(b) (2012)).

50. *Id.* § 102(a), 66 Stat. at 797.

51. *Id.* § 102(g), 66 Stat. at 797–98.

To complete the picture, § 102(e) disallows a patent where, before the date of invention, the same invention had been the subject of a patent application by another. Here the earlier application must eventually see the light of day, either through publication or by issuing as a patent.⁵² Section 102(d) disallows a patent if the applicant already received a patent on the invention in another country before filing a United States patent application, and the foreign patent was based on an application filed more than one year prior to the United States application.⁵³ This rule encouraged inventors to file their United States applications promptly.⁵⁴ Section 102(c) disallows a patent where the inventor “has abandoned the invention”⁵⁵—meaning, in this case, that the inventor abandoned the right to *patent* the invention.⁵⁶ Finally, § 102(f) states that no patent may be obtained where the applicant “did not himself invent the subject matter sought to be patented.”⁵⁷ A “derivation” defense based on § 102(f) might allege that the purported inventor actually took the idea from someone else.⁵⁸

The rules that apply to patents and patent applications after March 16, 2013 were imposed through the America Invents Act.⁵⁹ The new rules no longer depend on the applicant or patentee’s date of invention. They are concerned instead with dates of filing and public disclosure. The new version of § 102(a) disallows a patent where “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.”⁶⁰ Public use is no longer limited to use in this country. The “known . . . by others” language is gone, but the catch-all category of “otherwise available to the public” has been added. The new version of § 102(b) provides that disclosure of the claimed subject matter by the inventor, or by someone who obtained the subject matter from the inventor, is not disqualifying if it occurs within one year preceding the effective filing date.⁶¹ Furthermore, a disclosure by the inventor within that one-year grace period will protect the inventor in the event of subsequent pre-filing-date

52. *Id.* § 102(e), 66 Stat. at 797.

53. *Id.* § 102(d), 66 Stat. at 797.

54. *See In re Kathawala*, 9 F.3d 942, 947 (Fed. Cir. 1993).

55. § 102(c), 66 Stat. at 797.

56. *See In re Gibbs*, 437 F.2d 486, 489 (C.C.P.A. 1971).

57. § 102(f), 66 Stat. at 797.

58. *See Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1344 (Fed. Cir. 2003).

59. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 114, 125 Stat. 284, 324 (2011).

60. 35 U.S.C. § 102(a) (2012).

61. *Id.* § 102(b).

third-party disclosures that otherwise would have invalidated the patent.⁶² This rule encourages early public disclosures as a form of insurance policy.⁶³

The term “prior art” denotes the kinds of things referenced in § 102 of the Patent Act—printed publications, public uses, offers to sell, and so forth.⁶⁴ Patent claims must be compared to the prior art to determine their validity. If one prior art reference includes all of the elements of a challenged claim, it is invalid (or unpatentable) on grounds of “anticipation.”⁶⁵ If every element of the claimed invention cannot be found in a single prior art reference, but the reference is close, then the claim may be invalid (or unpatentable) on grounds of obviousness.⁶⁶ The same is true if more than one prior art reference can be combined to produce all of the elements of the claim.⁶⁷ Section 103 of the Patent Act governs obviousness, and it disallows a patent “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art.”⁶⁸

Generally speaking, the common thread in the various categories of prior art is that they have made technology available to the public. The Federal Circuit Court of Appeals has called this “a basic principle of patent law, subject to minor exceptions.”⁶⁹ The “real meaning of ‘prior art’ in legal theory . . . is knowledge that is available, including what would be obvious from it, at a given time, to a person of ordinary skill in the art.”⁷⁰ A printed publication, a public use, a prior patent, or a product offered for sale can all

62. *Id.*

63. See ALAN L. DURHAM, PATENT LAW ESSENTIALS: A CONCISE GUIDE 91 (4th ed. 2013).

64. See *id.* at 94.

65. See *ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1344 (Fed. Cir. 2012).

66. See *Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (“[D]ifferences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation.”). The same prior art counts for purposes of assessing anticipation or obviousness. See *In re Bass*, 474 F.2d 1276, 1285 (C.C.P.A. 1972) (“[W]hat is prior art for one purpose is prior art for all purposes.”).

67. See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007) (“[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.”).

68. 35 U.S.C. § 103 (2012). The version of § 103 that applies to patents filed before March 16, 2013 judges obviousness as of the date of invention.

69. *Ooddzon Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1402 (Fed. Cir. 1997).

70. *Id.* (quoting *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1453 (Fed. Cir. 1984)); see also *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1305 (Fed. Cir. 2006) (“Art that is not accessible to the public is generally not recognized as prior art.”); Mark A. Lemley, *Does “Public Use” Mean the Same Thing It Did Last Year?*, 93 TEX. L. REV. 1119, 1120–21 (2015) (“[P]atent law has traditionally required that most categories of prior art be ‘accessible to the public.’”).

serve to disclose to the public technology later claimed in a patent.⁷¹ Once the information is in the hands of the public, patent law's stern commandment is: "thou shalt not take it away."⁷² The "minor exceptions" generally involve situations where information is not available to the public on the date in question, but steps have already been taken to make it available.⁷³ This would be the case with a prior patent application that has not *yet* been disclosed to the public,⁷⁴ or a prior invention that has not been "abandoned, suppressed, or concealed."⁷⁵ This kind of prior art may be called "secret prior art" in recognition of the fact that it has not yet become public.⁷⁶ But a defining characteristic of prior art, outside of these exceptions, is that it is *not* secret.⁷⁷

71. See *Oddzon*, 122 F.3d at 1402.

72. *Kimberly-Clark*, 745 F.2d at 1453–54 ("Society, speaking through Congress and the courts, has said 'thou shalt not take it away.'").

73. See *In re Bergy*, 596 F.2d 952, 965 n.7 (C.C.P.A. 1979) ("Basically, the concept of prior art is that which is publicly known, or at least known to someone who has taken steps which do make it known to the public . . . or known to the inventor against whose application it is being applied.").

74. See *Hazeltine Research, Inc. v. Brenner*, 382 U.S. 252, 256 (1965) (noting a prior patent application may be used as prior art in an obviousness inquiry because the applicant "had done what he could do to add his disclosures to the prior art"); *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U.S. 390, 401 (1926) (noting application for a patent that had yet to issue should be treated as prior art because the applicant "had taken steps that would make it public as soon as the Patent Office did its work").

75. See *In re Bass*, 474 F.2d 1276, 1286–87 (C.C.P.A. 1973) ("[T]he use of a prior invention of another who had not abandoned, suppressed, or concealed it, under the circumstances of this case which include the disclosure of such invention in an issued patent, is available as 'prior art.'"). The words "'not . . . suppressed or concealed' . . . serve[] to prevent the use of truly 'secret' prior invention as prior art." *Id.* at 1286. In a later case, the same court held that a § 102(g) prior invention that was unknown either to the public *or* to the rival inventor at the relevant time would be "secret prior art" and should not be used as prior art for obviousness. *In re Clemens*, 622 F.2d 1029, 1039–40 (C.C.P.A. 1980).

76. See *Baxter Int'l, Inc. v. COBE Labs., Inc.*, 88 F.3d 1054, 1061 (Fed. Cir. 1996) (Newman, J., dissenting).

77. See *Astra Aktiebolag v. Andrx Pharm., Inc. (In re Omeprazole Patent Litig.)*, 483 F.3d 1364, 1380 (Fed. Cir. 2007) (holding secret information is not prior art); *I.C.E. Corp. v. Armco Steel Corp.*, 250 F. Supp. 738, 741 (S.D.N.Y. 1966) (explaining that in the context of public knowledge and use, "the word 'public' . . . has been construed to mean 'not secret'"); Lemley, *supra* note 70, at 1121 ("'[P]ublic' seems to mean . . . 'not secret.'"). The one form of prior art that does not fit the mold is a disclosure to the inventor under § 102(f). Although the disclosure may have occurred in secret, it can nevertheless be compared to the claimed subject matter for determining if the latter is nonobvious. *Oddzon Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1403 (Fed. Cir. 1997). The Federal Circuit recognized the anomaly, but because of certain exceptions then incorporated in § 103, it found the result "inescapable." *Id.* It also found the result "not illogical," because it would prevent an applicant from patenting an obvious variation of an idea derived from another. *Id.*

Although it is clear that prior art, as a rule, must be available to the public, it is not always clear what it means to be “available.” Nor is it clear whether the prior art must *remain* available. Those questions will be addressed in greater depth in Part III.

III. PRIOR ART “AVAILABLE” TO THE PUBLIC

With few exceptions, issued patents and published patent applications are available to anyone who wishes to see them. They are increasingly easy to access, thanks to electronic media, and, at least in theory, they are a source of information to which persons skilled in the technological arts may turn for instruction or inspiration. Not every printed document, much less every use of a prior invention, is similarly accessible, and when products are offered for sale they may or may not disclose the technological advancements they embody. The discussion that follows takes a closer look at the circumstances under which a document, a use, or the technology embodied in a product may be considered sufficiently “available to the public” to constitute prior art.

A. Printed Publications

As previously seen, “printed publications” have been a component of prior art for a very long time.⁷⁸ The term “publication” excludes any document that was accessible to no one,⁷⁹ like the drawings of one inventor that could be found only on the underside of a tablecloth in his mother’s kitchen.⁸⁰ The meaning of “printed” could once be debated, due to the invention of new technologies, including microfilm, that differed substantially from the printing technologies previously employed.⁸¹ Eventually, the courts came to place less emphasis on the medium, and they have treated “printed

78. See DURHAM, *supra* note 63, at 95.

79. See *Alexander Milburn*, 270 U.S. at 400 (“[W]e assume for purposes of decision that it would have been no bar to Whitford’s patent if Clifford had written out his prior description and kept it in his portfolio uncommunicated to anyone.”).

80. Nat’l Tractor Pullers Ass’n v. Watkins, 205 U.S.P.Q. (B.N.A.) 892, 901 (N.D. Ill. 1980); see also *Levi Strauss & Co. v. Golden Trade, S.r.L.*, 1995 WL 225621, at *25 (S.D.N.Y. Apr. 14, 1995) (discussing the same drawings). An unpublished document is not prior art because the public could derive no benefit from it. See *Grinnell Corp. v. Va. Elec. & Power Co.*, 277 F. Supp. 507, 518 (E.D. Va. 1967).

81. See, e.g., *In re Tenney*, 254 F.2d 619, 627 (C.C.P.A. 1958) (holding that microfilm is not “printed”).

publication” as a unitary concept that can embrace any technology that makes a publication sufficiently available to the public.⁸²

Because information can be communicated in so many different ways, the “touchstone” for identifying a printed publication is “public accessibility.”⁸³ How accessible must a publication be, and to whom? Although it has been said that a printed publication must be “generally available,”⁸⁴ the “public” actually refers to persons skilled in the art to which the invention pertains.⁸⁵ On many occasions, the Federal Circuit has expressed the standard of accessibility in the following way: “A given reference is ‘publicly accessible’ upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.”⁸⁶ The decisions must be approached on a case-by-case basis.⁸⁷ The focus is not on whether any particular person saw the publication or could have seen it, but whether, in general, hypothetical persons of skill in the art, exercising reasonable diligence, could have obtained the information “if they

82. See *In re Hall*, 781 F.2d 897, 898 (Fed. Cir. 1986) (“The statutory phrase ‘printed publication’ has been interpreted to give effect to ongoing advances in the technologies of data storage, retrieval, and dissemination.”); *In re Wyer*, 655 F.2d 221, 226 (C.C.P.A. 1981) (finding “[t]he traditional dichotomy between ‘printing’ and ‘publication’ . . . no longer valid,” because, due to changing technology, the “‘probability of dissemination’ of an item very often has little to do with whether or not it is ‘printed’ in the sense of that word when it was introduced into the patent statutes in 1836”).

83. *Suffolk Techs., LLC v. AOL Inc.*, 752 F.3d 1358, 1364 (Fed. Cir. 2014); *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 866 (Fed. Cir. 2010); *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009); *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008).

84. *N. Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 936 (Fed. Cir. 1990).

85. *Garrett Corp. v. United States*, 422 F.2d 874, 878 (Ct. Cl. 1970) (“The public, for purposes of the statute, constitutes that class of persons concerned with the art to which the document relates and thus most likely to avail themselves of its contents.”); see also *Cooper Cameron Corp. v. Kvaerner Oilfield Prods.*, 291 F.3d 1317, 1324 (Fed. Cir. 2002) (printed publications “need only be accessible to the interested public”); *Popeil Bros. v. Schick Elec., Inc.*, 494 F.2d 162, 166 (7th Cir. 1974) (holding a printed publication must be “freely accessible to the class of persons concerned with the art to which the document pertains”). *But cf.* *Pickering v. Holman*, 459 F.2d 403, 407 (9th Cir. 1972) (“Anything that is printed and made accessible to any part of the public is a printed publication.”).

86. See, e.g., *Suffolk Techs.*, 752 F.3d at 1364; *Cordis Corp. v. Bos. Sci. Corp.*, 561 F.3d 1319, 1333 (Fed. Cir. 2009); *SRI Int’l, Inc. v. Internet Sec. Sys.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008); *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006).

87. *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012); *In re Lister*, 583 F.3d at 1311; *Kyocera Wireless*, 545 F.3d at 1350.

wanted to.”⁸⁸ If a publication was accessible in that manner, “it is unnecessary to show that anyone actually inspected the reference.”⁸⁹

Printed publication cases generally fall into three categories: cases in which copies of a document were deposited in libraries or other facilities, where persons skilled in the art might seek them out; cases in which copies of a document were actively circulated to persons skilled in the art; and cases in which documents were merely shown to persons skilled in the art.

Cases in the first category include those involving a single copy of a thesis shelved in a library,⁹⁰ or materials that could be found only in patent application files open to inspection in foreign countries.⁹¹ These examples show that *actual knowledge* of a printed publication to persons skilled in the art may be quite unlikely; it is theoretical accessibility that counts. On the other hand, documents have been found insufficiently accessible where their distribution was restricted by secrecy provisions, confidentiality agreements, or the like.⁹² The availability of indexing or other search tools is also an

88. *Cordis*, 561 F.3d at 1333 (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988)); *see also In re Lister*, 583 F.3d at 1312 (a court “must consider all of the facts and circumstances surrounding the disclosure and determine whether an interested researcher would have been sufficiently capable of finding the reference and examining its contents”); *N. Telecom*, 908 F.2d at 936–37 (evidence failed to show “that anyone could have had access to the documents by the exercise of reasonable diligence”).

89. *In re Lister*, 583 F.3d at 1314; *see also SRI*, 511 F.3d at 1197 (“actual retrieval of a publication is not a requirement for public accessibility”); *In re Tenney*, 254 F.2d 619, 626 (C.C.P.A. 1958) (stating “though the law has in mind the probability of public knowledge of the contents of the publication, the law does not go further and require that the probability must have become an actuality”).

90. *See, e.g., In re Hall*, 781 F.2d 897, 899–900 (Fed. Cir. 1986); *Ex parte De Grunigen*, 132 U.S.P.Q. 152, 154–55 (B.P.A.I. 1958); *Gulliksen v. Halberg*, 75 U.S.P.Q. 252, 253 (B.P.A.I. 1937). In *In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989), the court held that student theses that “had not been either cataloged or indexed in a meaningful way” were not sufficiently accessible to qualify as printed publications. The court reached the same result in *In re Bayer*, 568 F.2d 1357, 1361 (C.C.P.A. 1978), where the inventor’s thesis was neither cataloged nor shelved, though it was known to three members of the graduate committee. Under those circumstances, the likelihood that the public had knowledge of the contents of the thesis was “virtually nil.” *Id.*

91. *See, e.g., Bruckelmyer*, 445 F.3d at 1378–79 (drawings in a Canadian patent application, available for inspection at the Canadian Patent Office, were accessible to researchers exercising reasonable diligence); *In re Wyer*, 655 F.2d 221, 226–27 (C.C.P.A. 1981) (an application on file in the Australian Patent Office constituted a printed publication). A similar case is *In re Lister*, 583 F.3d at 1313–14, where a document was only available for inspection at the United States Copyright Office.

92. *See Cordis*, 561 F.3d at 1334 (stating that “professional norms may support [an] expectation[] of confidentiality” that prevents a document from qualifying as a printed publication); *N. Telecom*, 908 F.2d at 936–37 (holding documents with restricted access were not printed publications).

important factor.⁹³ In the second type of case, the active circulation of copies has taken the place of availability in a library.⁹⁴ In *Massachusetts Institute of Technology v. AB Fortia*,⁹⁵ a paper qualified as a printed publication where the author had offered copies to about fifty to five hundred individuals who attended a conference, and the author actually distributed at least six copies, free of any restrictions, to persons skilled in the art.⁹⁶ A document may also constitute a printed publication when merely displayed to persons skilled in the art. Here the leading case is *In re Klopfenstein*,⁹⁷ where conference presenters pasted copies of their slides to a poster board and exhibited them at professional conferences for a period of a few days.⁹⁸ The display “disseminated” knowledge of its contents, in the sense of making it widespread or generally known.⁹⁹

Some in-between cases involve materials made available electronically. In *Voter Verified, Inc. v. Premier Election Solutions, Inc.*,¹⁰⁰ materials posted on a publicly-accessible website constituted a printed publication.¹⁰¹ Although the site was not indexed, persons skilled in the art were aware of the site as “a prominent forum for discussing such technologies,” and they could have located the materials in question “using [the] website’s own search functions

93. See *SRI*, 511 F.3d at 1196–97 (absence of an index or catalog is a relevant factor); *In re Cronyn*, 890 F.2d at 1161 (shoebox thesis index was insufficient); *Open Text S.A. v. Box, Inc.*, No. 13-cv-04910-JD, 2015 U.S. Dist. LEXIS 11312, at *5–6 (N.D. Cal. Jan. 30, 2015) (printed publications must be indexed so that persons skilled in the art can find them). *But cf.* *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012) (indexing is relevant but not always necessary). The intentions of the author may also play a role. See *SRI*, 511 F.3d at 1197 (finding downloadable paper “was not . . . intended for dissemination to the public”); *Eaton Corp. v. ZF Meritor LLC*, No. 03-74844, 2008 U.S. Dist. LEXIS 26988, at *15 (E.D. Mich. Apr. 3, 2008) (standard for public accessibility is whether a document was “intended for dissemination to the public” and whether persons skilled in the art could find it).

94. See, e.g., *Kyocera Wireless Corp., v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350–51 (Fed. Cir. 2008) (a “widely distributed” reference, not subject to secrecy, was a printed publication); *Popeil Bros. v. Schick Elec., Inc.*, 494 F.2d 162, 166 (7th Cir. 1974) (holding distribution of materials to members of the public in Japan constituted publication of those materials); *Jockmus v. Leviton*, 28 F.2d 812, 814 (2d Cir. 1928) (Hand, J.) (distribution of fifty copies is “quite enough” for a printed publication).

95. 774 F.2d 1104 (Fed. Cir. 1985).

96. *Id.* at 1108–09.

97. 380 F.3d 1345 (Fed. Cir. 2004).

98. *Id.* at 1347.

99. *Id.* at 1348. Factors relating to public accessibility in such cases include “the length of time the display was exhibited, the expertise of the target audience, the existence (or lack thereof) of reasonable expectations that the material displayed would not be copied, and the simplicity or ease with which the material displayed could have been copied.” *Id.* at 1350.

100. 698 F.3d 1374 (Fed. Cir. 2012).

101. *Id.* at 1379–81.

and applying reasonable diligence.”¹⁰² In *Suffolk Technologies, LLC v. AOL Inc.*,¹⁰³ an Internet newsgroup post also qualified as a printed publication.¹⁰⁴ The posts were not indexed or searchable, but they were organized in a hierarchical manner, they were widely disseminated to persons skilled in the art at the time of their appearance, and the post in question had received six responses.¹⁰⁵ In contrast, in *SRI International, Inc. v. Internet Security Systems, Inc.*,¹⁰⁶ the Federal Circuit found issues of fact concerning whether a paper made available on an unindexed but publicly-accessible FTP site constituted a printed publication.¹⁰⁷ The paper had been made available for only seven days, it bore a “relatively obscure filename,” its existence was not advertised, and it was not intended for distribution to the general public.¹⁰⁸ The court compared the paper to a poster exhibited at an “unpublicized conference with no attendees.”¹⁰⁹

Although it makes no legal difference whether a printed publication was accessible to the interested public through temporary display, distribution of copies, or deposit in a library, the difference in practical effect is worth noting. As Judge Learned Hand once observed, circulating copies may be a superior method of getting information into the hands of persons skilled in the art:

A single copy in a library, though more permanent, is far less fitted to inform the craft than a catalogue freely circulated, however ephemeral its existence; for the catalogue goes direct to those whose interests make them likely to observe and remember whatever it may contain that is new and useful.¹¹⁰

102. *Id.* at 1381.

103. 752 F.3d 1358 (Fed. Cir. 2014).

104. *Id.* at 1365.

105. *Id.*

106. 511 F.3d 1186 (Fed. Cir. 2008).

107. *Id.* at 1195.

108. *Id.* at 1197.

109. *Id.*

110. *Jockmus v. Leviton*, 28 F.2d 812, 813–14 (2d Cir. 1928); *see also* *Imperial Glass Co. v. A.H. Heisey & Co.*, 294 F. 267, 269 (6th Cir. 1923) (“Certainly manufacturer’s catalogues so circulated are more effective in spreading information among persons skilled in that art than if the same catalogues were only on file in some public library.”); *In re Bayer*, 568 F.2d 1357, 1361 (C.C.P.A. 1978) (quoting *Jockmus*, 28 F.2d at 813–14). Newsgroup posts have similar virtues. Even if they are only ephemeral and, after the fact, possibly difficult to find, they may be directed initially to the audience most likely to be interested in the subject matter. *See* *Religious Tech. Ctr. v. Netcom On-Line Commc’n Servs.*, 923 F. Supp. 1231, 1256 (N.D. Cal. 1995) (making a similar observation in a trade secret case).

Nevertheless, the distribution of copies or a temporary display means nothing to a diligent researcher who missed the opportunity, unless the information can be obtained second-hand. That researcher may be better off with a document permanently on file in a library, however difficult it may be to track down. Courts that refer to “dissemination and public accessibility” as the “keys” to identifying a printed publication¹¹¹ may be acknowledging, however subtly, that what has been disseminated may *not* be publicly accessible, at least on an on-going basis.¹¹² Similar disregard of future accessibility also appears in the context of public use, discussed in the next section.

B. Public Use

Another form of potentially invalidating prior art is a public use of the invention. The use may be by the inventor or by a third party,¹¹³ but the use must be *public* to qualify as prior art; uses conducted in secret or subject to confidentiality agreements do not count.¹¹⁴ Once again, the issue is public accessibility.¹¹⁵ As in the case of printed publications, the “public” refers to persons of ordinary skill in the art,¹¹⁶ and just as one copy of a document deposited in a library may be said to make its contents available to the public, a single use of the invention by a person who is under no restrictions may constitute a public use.¹¹⁷

111. See, e.g., *In re Klopfenstein*, 380 F.3d 1345, 1348 (Fed. Cir. 2004); *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989); *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1568 (Fed. Cir. 1988).

112. See *World Bottling Cap, LLC*, No. IPR2015-01651, at 8–9 (P.T.A.B. Feb. 11, 2016) (finding a document that is not “discoverable via search” may still be prior art because of physical dissemination; the present inability to locate it “does not undo any prior public dissemination”).

113. *Dey, L.P. v. Sunovion Pharms., Inc.*, 715 F.3d 1351, 1355 (Fed. Cir. 2013); *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1334 (Fed. Cir. 2005).

114. See *DONALD CHISUM, CHISUM ON PATENTS* § 3.05[2] (“A use under conditions of secrecy is not sufficient.”).

115. See *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998); *Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 139 (Fed. Cir. 1986); *Sys. Mgmt. Arts Inc. v. Avesta Techs., Inc.*, 87 F. Supp. 2d 258, 263–64 (S.D.N.Y. 2000).

116. *Sys. Mgmt.*, 87 F. Supp. 2d at 269.

117. *American Seating Co. v. USSC Grp., Inc.*, 514 F.3d 1262, 1267 (Fed. Cir. 2008) (“An invention is in public use if it is shown to or used by an individual other than the inventor under no limitation, restriction, or obligation of confidentiality.”); *Motionless Keyboard Co. v. Microsoft Corp.*, 486 F.3d 1376, 1384 (Fed. Cir. 2007); *Bernhardt, L.L.C. v. Collezione Europa USA, Inc.*, 386 F.3d 1371, 1379 (Fed. Cir. 2004); *Netscape Commc’ns Corp. v. Konrad*, 295 F.3d 1315, 1320 (Fed. Cir. 2002).

The most notorious public use case of all, perhaps because the use seems anything but public, is undoubtedly *Egbert v. Lippmann*, decided in 1881.¹¹⁸ The invention was a more durable corset steel.¹¹⁹ The inventor presented a pair to his “intimate friend,” later his wife, and she wore them in her corsets for years.¹²⁰ Because she was under no obligation of secrecy, the court held this use to be “public,” regardless of whether anyone other than the inventor and his friend had any knowledge of it:

[W]hether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known. If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee, without limitation or restriction, or injunction of secrecy, and it is so used, such use is public, even though the use and knowledge of the use may be confined to one person.¹²¹

The Court was not concerned that the nature of the invention kept it hidden in use,¹²² nor did it ask whether knowledge of the corset steels had actually spread any further. Instead, the Court emphasized what the wearer of the corset steels *might* have done: “She might have exhibited them to any person, or made other steels of the same kind, and used or sold them without violating any condition or restriction imposed on her by the inventor.”¹²³ Justice Miller, dissenting, thought that the use of the corset steels had not been “public” at all. He confessed that

[i]f the little steel spring inserted in a single pair of corsets, and used by only one woman, covered by her outer-clothing, and in a position always withheld from public observation, is a public use of that piece of steel, I am at a loss to know the line between a private and a public use.¹²⁴

Had the inventor asked his friend to abstain from public disclosure of her corset steels, it could have been interpreted as “a piece of irony.”¹²⁵

118. *Egbert v. Lippmann*, 104 U.S. 333 (1881).

119. *Id.* at 335.

120. *Id.* at 335–37.

121. *Id.* at 336.

122. *Id.* (“[S]ome inventions are by their very character only capable of being used where they cannot be seen or observed by the public eye.”); see also *In re Blaisdell*, 242 F.2d 779, 783 (C.C.P.A. 1957).

123. *Egbert*, 104 U.S. at 337.

124. *Id.* at 339 (Miller, J., dissenting).

125. *Id.*

If *Egbert* were decided today, a court might determine that the inventor's friend actually did bear an obligation of confidentiality, based on expectations or understandings that one could imply from the circumstances.¹²⁶ But there are modern counterparts to *Egbert*, including *New Railhead Manufacturing, L.L.C. v. Vermeer Manufacturing Co.*¹²⁷ The invention in *New Railhead* was a patented drilling method. The inventor permitted an acquaintance—the foreman of a drilling team working for a third party—to use the method on his job site.¹²⁸ The object was to see if the drill bits functioned as they should.¹²⁹ Even though the use was not “open and visible in the ordinary sense[,]”¹³⁰ it was “public” because it occurred “at a commercial jobsite on public land on the side of an interstate highway, and the inventor admitted he had no control over the practice of the patented method.”¹³¹ Judge Dyk, dissenting, pointed out that “[t]he use actually took place under public land, hidden from view” and that “[i]n order to understand the method of using the drill bit[,] a person at the job site would have to view the drill bit or see it in operation, and this was impossible to do while the drill bit was underground.”¹³²

Cases like *Egbert* and *New Railhead* certainly contradict the ordinary meaning of “public use.”¹³³ The term “unrestricted use” would seem more appropriate, although those are not the words found in the Patent Act. It is public only in the sense that the public *may* learn of it.¹³⁴ The friend in *Egbert*, for example, could have taken advantage of her liberty to inform everyone

126. See *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1266 (Fed. Cir. 1986) (finding that the inventor of a rotating-cube puzzle had not engaged in a public use when he demonstrated the puzzle to his friends; the “personal relationships and surrounding circumstances” supported the conclusion that “at all times [the inventor] retained control over the puzzle’s use and the distribution of information concerning it”).

127. 298 F.3d 1290 (Fed. Cir. 2002).

128. *Id.* at 1293.

129. *Id.*

130. *Id.* at 1297.

131. *Id.* at 1298.

132. *Id.* at 1300 (Dyk, J., dissenting).

133. This happens in a different way in the context of a use conducted primarily for purposes of experiment. Such a use is not a “public use,” even if it is a use of the invention that occurs in public. See *Dey, L.P. v. Sunovion Pharms., Inc.*, 715 F.3d 1351, 1359 (Fed. Cir. 2013) (“During experimentation, the public might have knowledge of an invention (because they see it), but may not be using the invention within the meaning of the statute (because the inventor is experimenting).”); *Tone Bros. v. Sysco Corp.*, 28 F.3d 1192, 1200 (Fed. Cir. 1994) (experimentation “may negate what otherwise would be considered a public use”).

134. See *Levi Strauss & Co. v. Golden Trade, S.r.L.*, No. 92 Civ. 1667, 1995 U.S. Dist. LEXIS 22145, at *91 (S.D.N.Y. Nov. 30, 1995) (“The fact of public knowledge [does] not have to be shown, just that it was possible for the public to have found out.”).

about her corset steels.¹³⁵ If she did not, a hypothetical researcher of ordinary skill and diligence would be better off combing the libraries of the world for a single doctoral thesis that might disclose the invention. Furthermore, the friend may not have known enough about the corset steels to disclose to others how to make them. Yet the disclosure of such information is not essential when the subject is public use. A printed publication must be *enabling* to anticipate a patent claim—that is, it must include information that would allow a person skilled in the art to practice the invention.¹³⁶ A public use must be public, but it need not be enabling.¹³⁷ In other words, a use of the invention that takes place in public is disqualifying, even if that use does little or nothing to enrich the art.¹³⁸ In 1940, Judge Hand seemed to regret that noninforming public uses were not treated the same as secret uses, and both disqualified as prior art on the ground that “in each case the fund of common knowledge is not enriched.”¹³⁹ But he found that, “rightly or wrongly, the law did not develop so, and it is now too late to change.”¹⁴⁰

Actually, these well-established rules may change, going forward. The recently revised version of § 102 includes the words “otherwise available to the public.”¹⁴¹ Some legislative history suggests that these words modify the phrase “public use” so as to require that such uses be *genuinely* public,

135. See *Netscape Commc'ns Corp. v. Konrad*, 295 F.3d 1315, 1321 (Fed. Cir. 2002) (individuals who saw a demonstration of the invention “were computer personnel who could easily demonstrate the invention to others”).

136. *Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.*, 670 F.3d 1171, 1184 (Fed. Cir. 2012); *Orion IP, LLC v. Hyundai Motor Am.*, 605 F.3d 967, 975 (Fed. Cir. 2010).

137. See *In re Epstein*, 32 F.3d 1559, 1568 (Fed. Cir. 1994) (with public use “there is no requirement for an enablement-type inquiry”); *Sys. Mgmt. Arts Inc. v. Avesta Techs., Inc.*, 87 F. Supp. 2d 258, 269–70 (S.D.N.Y. 2000).

138. See *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1299 (Fed. Cir. 2002) (“[I]t is not public knowledge of his invention that precludes the inventor from obtaining a patent for it, but a public use or sale of it.” (quoting *TP Labs., Inc. v. Prof'l Positioners, Inc.*, 724 F.2d 965, 970 (Fed. Cir. 1984))); *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1570 (Fed. Cir. 1997) (as long as an airline reservation system had been used in public, it did not matter that the use failed to disclose the algorithms necessary to make it work). On the other hand, in *Dey, L.P.*, 715 F.3d at 1355, the court observed that the “skill and knowledge of those observing an invention can shed light on the degree to which it was kept confidential.” Why? Because someone using an invention in the presence of “a small number of uninformed observers” would have less reason to think that the observers could learn something about the invention that they could disclose to others. *Id.* at 1356. Although the court is not clear, this line of reasoning makes more sense if a public use actually does have to disclose something about how the invention works.

139. *Gillman v. Stern*, 114 F.2d 28, 31 (2d Cir. 1940).

140. *Id.* Judge Hand thought it might have been argued, originally, that “public use” only included a use by a prospective patentee—a use that could have been treated as an abandonment of rights. *Id.*

141. 35 U.S.C. § 102(a)(1) (2012 & Supp. 2015).

undoing the basic premises of *Egbert*.¹⁴² How this plays out remains to be seen. The rules spawned by *Egbert* have so long been attached to the phrase “public use” that more explicit actions by Congress may be required to undo them.

C. Commercial Exploitation

The issue of noninforming use often arises in the context of commercial exploitation. Under the rules that apply to older patents, the patent is invalid if the invention was placed on sale before the critical date.¹⁴³ The rule applies whether the invention was offered for sale by the inventor or by a third party.¹⁴⁴ Because the primary purpose of the on-sale bar is to encourage the prompt filing of a patent application,¹⁴⁵ “the question is not whether the sale, even a third party sale, ‘discloses’ the invention at the time of the sale, but whether the sale relates to a device that *embodies* the invention.”¹⁴⁶ The on-sale bar may be triggered by sales activities that occur in secret.¹⁴⁷ Even under the *new* version of § 102, which includes the phrase “otherwise available to the public,” public sales that do not disclose the nature of the invention still qualify as prior art.¹⁴⁸

Some commercial uses of an invention do not require placing the invention itself on sale. A new method, for example, may be used to manufacture an unpatented product. If the method cannot be deduced by examining the product, the method can be commercially exploited without revealing it to anyone. This might be called “commercial use,” but because § 102 does not include that term, commercial uses—even secret ones—have been treated as

142. See Joseph A. Lingenfelter, *Putting the “Public” Back in “Public Use”: Interpreting the 2011 Leahy-Smith America Invents Act*, 31 GA. ST. U. L. REV. 867, 894 (2015). In *Helsinn Healthcare S.A. v. Teva Pharmaceuticals USA, Inc.*, 855 F.3d 1356, 1368–69 (Fed. Cir. 2017), the court declined to address the issue.

143. § 102(b).

144. *Special Devices, Inc. v. OEA, Inc.*, 270 F.3d 1353, 1355 (Fed. Cir. 2001) (“By phrasing the statutory bar in the passive voice, Congress indicated that it does not matter who places the invention ‘on sale.’”); *J.A. LaPorte, Inc. v. Norfolk Dredging Co.*, 787 F.2d 1577, 1581 (Fed. Cir. 1986). The on-sale bar will apply even if the party who placed the invention on sale stole it from the inventor. *Special Devices*, 270 F.3d at 1355.

145. *Special Devices*, 270 F.3d at 1354.

146. *J.A. LaPorte*, 787 F.2d at 1583.

147. *Special Devices*, 270 F.3d at 1357.

148. See *Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.*, 855 F.3d 1356, 1371 (Fed. Cir. 2017).

a potential form of “public use.”¹⁴⁹ The traditional rule, which may be traced to Learned Hand’s decision in *Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts Co.*,¹⁵⁰ distinguishes between uses by the patentee (or applicant) and uses by a third party. If use of the invention by a third party does not make it public, that use will not count as prior art.¹⁵¹ Use of the invention by the patentee (or applicant) that amounts to commercial exploitation will count as “public use,” even if the use does not convey any information about the invention.¹⁵² Such use “forfeits” the right to patent the invention, if it occurred more than one year before the application’s filing date.¹⁵³ The *Metallizing* rule, which defies the ordinary meaning of “public use,”¹⁵⁴ may or may not have survived the recent revisions to § 102. Again, the issue is whether the addition of “otherwise available to the public” means that secret or noninforming use of an invention no longer counts as “public use.”

D. Prior Invention

Before the America Invents Act, § 102(g) prior art consisted of a prior invention, by another, who “had not abandoned, suppressed, or concealed” it.¹⁵⁵ One purpose of § 102(g) was to “encourage[] prompt public disclosure of an invention by penalizing the unexcused delay or failure of a first inventor to share the ‘benefit of the knowledge of [the] invention’ with the public after the invention has been completed.”¹⁵⁶ Although the prior invention may not have been “available to the public” in the manner that a printed publication or public use is, in theory, available to the public, one could expect that the

149. See *Dey, L.P. v. Sunovion Pharms., Inc.*, 715 F.3d 1351, 1355 (Fed. Cir. 2013) (“To decide whether a prior use constitutes an invalidating ‘public use,’ we ask ‘whether the purported use: (1) was accessible to the public; or (2) was commercially exploited.’” (quoting *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1380 (Fed. Cir. 2005))).

150. 153 F.2d 516, 519–20 (2d Cir. 1946).

151. *Woodland Tr. v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983); *D.L. Auld Co. v. Chroma Graphics Corp.*, 714 F.2d 1144, 1147 (Fed. Cir. 1983).

152. *Woodland Tr.*, 148 F.3d at 1370 (“[A]n inventor’s own prior commercial use, albeit kept secret, may constitute a public use or sale under § 102(b), barring him from obtaining a patent.”); see *In re Caveney*, 761 F.2d 671, 675 (Fed. Cir. 1985); *D.L. Auld*, 714 F.2d at 1147.

153. *D.L. Auld*, 714 F.3d at 1147.

154. See *Kinzebaw v. Deere & Co.*, 741 F.2d 383, 390 (Fed. Cir. 1984) (“A commercial use is a public use even if it is kept secret.”).

155. 35 U.S.C. § 102(g) (2006), amended by Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011).

156. *Checkpoint Sys., Inc. v. U.S. Int’l Trade Comm’n*, 54 F.3d 756, 761 (Fed. Cir. 1995) (quoting *Paulik v. Rizkalla*, 760 F.2d 1270, 1280 (Fed. Cir. 1985) (Rich, J., concurring)).

prior invention would be available eventually if neither abandoned nor concealed. Efforts toward any manner of bringing the prior invention to the public, including efforts toward commercializing it, might be considered evidence that the invention was not abandoned or concealed.¹⁵⁷

It is not always clear in the § 102(g) cases whether it is enough to provide the *benefit* of the invention to the public, or whether the prior inventor must also provide *knowledge* of the invention, and if it is the latter what depth of knowledge is required—simply knowledge that the invention exists, or knowledge that enriches the art.¹⁵⁸ In *Apotex USA, Inc. v. Merck & Co.*,¹⁵⁹ the court observed that, even though § 102(g) includes no explicit disclosure requirement, “the spirit and policy of the patent laws encourage an inventor to take steps to ensure that ‘the public has gained knowledge of the invention which will ensure its preservation in the public domain.’”¹⁶⁰ In a contest between two inventors, a process for making medicine tablets could be suppressed or concealed even though the tablets themselves were made available to the public.¹⁶¹ The public might have the benefit of the invention, in the form of the tablets, but no knowledge of the invention. On the other hand, if the tablets could be reverse-engineered to reveal the process that made them, then the tablets would have made “the benefits of [the] invention known to the public.”¹⁶²

In *Fox Group, Inc. v. Cree, Inc.*,¹⁶³ the majority of the Federal Circuit reasoned differently. In that case, the prior inventor exhibited and publicized a low-defect silicon wafer (the “Kyoto wafer”), without revealing the method used to create it. Here the wafer itself was the invention, and the court found that exhibiting the wafer served to make the invention “known to the public,”¹⁶⁴ even though the disclosure did not enable anyone to recreate it.¹⁶⁵ Judge O’Malley found the decision inconsistent with *Apotex*. Under that precedent, she wrote, “a prior inventor must show that the public was clearly given the benefit of an invention, via reverse-engineering, a detailed

157. *See id.* at 763.

158. *See id.* at 762–63 (referring ambiguously to a product that provided the public with the “benefit of the knowledge of [the] invention,” or simply “the benefit of [the] invention”).

159. 254 F.3d 1031 (Fed. Cir. 2001).

160. *Id.* at 1038 (quoting *Palmer v. Dudzik*, 481 F.2d 1377, 1387 (C.C.P.A. 1973)).

161. *See id.* at 1039. In *Checkpoint*, the 102(g) prior art was a prior invention by another person who did not seek patent rights of his own. His efforts had been devoted to introducing the product that embodied the invention. *See* 54 F.3d at 762–63.

162. *Apotex*, 254 F.3d at 1039 n.3.

163. 700 F.3d 1300 (Fed. Cir. 2012).

164. *Id.* at 1307.

165. *Id.* at 1306–07.

disclosure, or otherwise [S]imply disclosing the existence of the product, without more, is insufficient to make an invention publicly known. There must be something more.”¹⁶⁶ Commercializing the invention might provide that “something more,” although it is not clear whether Judge O’Malley would demand a product that could be reverse-engineered or whether the public availability of the product itself would be enough.¹⁶⁷ In any case, Judge O’Malley warned that “[u]nder the majority’s approach, an inventor could publicly announce that it made a product, with no explanation as to how it did so, and then hide it away in a closet indefinitely.”¹⁶⁸ That scenario, if the invention were hidden and forgotten, would entail a genuine “lost art.”

E. Information Otherwise Available

A remaining category of prior art in the older version of § 102(a) is something that was “known . . . by others in this country” before the patentee’s date of invention.¹⁶⁹ Although the statute does not say so explicitly, courts have held that what is “known” under § 102(a) must be publicly available.¹⁷⁰ “Public,” in this context, again refers to persons skilled in the art.¹⁷¹ Like a printed publication (but unlike a public use), prior knowledge under § 102(a) must be enabling.¹⁷² The “known” category overlaps substantially with the public use and printed publication categories of prior art, and perhaps for that reason it seldom receives much attention. It might come into play if public discussions of an invention had not been reduced to a writing. The new category of “otherwise available to the public” serves as a similar catch-all.

166. *Id.* at 1312 (O’Malley, J., dissenting in part).

167. *See id.* at 1312–13.

168. *Id.* at 1313.

169. Patent Act of 1952, Ch. 10, § 102, 66 Stat. 792, 797 (1952) (current version at 35 U.S.C. § 102(a) (2012)).

170. *Minn. Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1306 (Fed. Cir. 2002) (“For prior art to anticipate . . . because it is ‘known,’ the knowledge must be publicly accessible.”); *Woodland Tr. v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (“[I]n order to invalidate a patent based on prior knowledge or use, that knowledge or use must have been available to the public.”); *Carella v. Starlight Archery*, 804 F.3d 135, 139 (Fed. Cir. 1986).

171. *Levi Strauss & Co. v. Golden Trade, S.r.L.*, No. 92 Civ. 1667, 1995 U.S. Dist. LEXIS 22145, at *57 (S.D.N.Y. Nov. 30, 1995).

172. *Minn. Mining & Mfg.*, 303 F.3d at 1301.

F. Information Only Temporarily Available

The cases discussed above concern themselves with the public availability of prior art, but they seldom address the consequences if prior art *ceases* to be available. In spite of the Court's discussion of "lost arts" in *Gayler v. Wilder*, the fireproof construction of the safe was never available to the public at all. It was hidden from view, used only by the inventor, and, as far as the opinion discloses, known only to him.¹⁷³ The prior invention could have contributed to public welfare only if the inventor had decided to revive it. In other cases, the invention may well have been available to the public, according to the standards set by the courts, but the availability was fleeting—potentially creating "lost art" of another sort.

In *SRI*, the paper found by the district court to be § 102(b) prior art was accessible via an FTP site for seven days, unadvertised, as a backup to a copy that had been sent by email to a conference organizer.¹⁷⁴ It could only have been accessed during those seven days, and only by a person who, for his or her own reasons, chose to navigate the site and investigate papers with relatively obscure file names—a process compared by the court to "wander[ing] into [an unpublicized] conference by happenstance."¹⁷⁵ The court reversed summary judgment holding that the paper was sufficiently accessible to the public,¹⁷⁶ but Judge Moore would have affirmed. While noting that "[t]he more transient the display, the less likely it is to be considered a 'printed publication,'"¹⁷⁷ Judge Moore pointed out that the seven days during which the paper could be downloaded was more than twice the duration of the poster board display in *Klopfenstein*.¹⁷⁸ She found no evidence "that seven days was not sufficient time to give the public the opportunity to capture [the] information conveyed by the . . . paper."¹⁷⁹

In *Alcon Laboratories Inc. v. Bausch & Lomb, Inc.*,¹⁸⁰ the alleged printed publication was a list of the ingredients reproduced on the label of a patented drug. One such label was included as a specimen in a trademark application file, where it could have been accessed by the public for a period of five business days.¹⁸¹ The court found that it was not a printed publication, but

173. See *Gayler v. Wilder*, 51 U.S. 477, 495–96 (1850).

174. See *SRI Int'l, Inc. v. Internet Sec. Sys.*, 511 F.3d 1186, 1195 (Fed. Cir. 2008).

175. *Id.* at 1197.

176. *Id.* at 1197–98.

177. *Id.* at 1202 (Moore, J., dissenting in part).

178. *Id.*

179. *Id.* at 1203.

180. 52 U.S.P.Q.2d (B.N.A.) 1927 (N.D. Tex. 1999).

181. *Id.* at 1931–32.

seemed to place more weight on the illegibility of the list than on the brief period of its availability.¹⁸² In *Klopfenstein*, the creators of the poster board displayed it at one conference for “two and a half days[,] and at [another conference] for less than one day.”¹⁸³ That was still long enough for conference attendees to have absorbed its contents.¹⁸⁴

In some cases, temporary availability seems enough to justify the treatment of a disclosure as prior art. In *Klopfenstein*, conference attendees who were skilled in the art undoubtedly saw the poster board display. Those who did see it might have taken the knowledge they gained with them, and they might have used that knowledge later or shared it with others. The disclosures might have become a meaningful contribution to the art. The same is true in public use cases where even though only one person witnessed the use of the invention, that one person, owing to the lack of confidentiality restrictions, might have used the knowledge or passed it along.¹⁸⁵ The foreman in *New Railhead*, for example, might have told others in the drilling profession about the techniques he had employed on his job site. Similarly, although the paper in SRI could be downloaded for only seven days, during that time a particularly industrious or fortunate researcher might have stumbled across it and made use of it. Yet these are all descriptions of what *might have* happened. What if it did not, and the opportunity was lost? Because of the focus of the courts on availability alone, a public use is still a public use even if the members of the audience kept their knowledge to themselves,¹⁸⁶ and a publication is still a publication even if no one ever saw it.¹⁸⁷ Yet, from the perspective of a hypothetical researcher exercising reasonable diligence, if information once available had become *unavailable*, “[t]he means of obtaining [the] knowledge would not be within their reach;

182. *See id.* at 1932 (finding testimony about the illegibility of the label “[m]ore problematic”).

183. *In re Klopfenstein*, 380 F.3d 1345, 1351 (Fed. Cir. 2004).

184. *Id.* at 1352. In *Regents of the University of California v. Howmedica, Inc.*, 530 F. Supp. 846, 860 (D.N.J. 1981), the court found that slides exhibited during a lecture were too “limited in duration” and non-enabling.

185. *See Egbert v. Lippmann*, 104 U.S. 333, 337 (1881) (referring to the uses that the inventor’s friend might have made of her knowledge of the corset steels).

186. *See Netscape Commc’ns Corp. v. Konrad*, 295 F.3d 1315, 1321 (Fed. Cir. 2002) (observing that computer personnel who attended a demonstration “could easily demonstrate the invention to others,” but not inquiring if such a demonstration had actually happened or was going to happen).

187. *See In re Lister*, 583 F.3d 1307, 1313–14 (Fed. Cir. 2009) (dismissing evidence that no one had ever asked to inspect a document on file with the Copyright Office; “once accessibility is shown, it is unnecessary to show that anyone actually inspected the reference.”).

and, as far as their interest is concerned, it would be the same thing as if the [invention] had never been discovered.”¹⁸⁸

Every indication is that courts regard the process of information becoming a component of the prior art—via a public use, a printed publication, or otherwise—as irreversible. In other words, once information has crossed the threshold of availability, however fleetingly, whatever happens later is immaterial. The Federal Circuit once broadly declared that “[a] public use . . . cannot be undone by subsequent actions,”¹⁸⁹ and it would likely say the same of a printed publication. If this is correct, prior art may be lost in a practical sense, when information becomes unobtainable, but it is not lost in a patent law sense so long as one can still prove its former (often hypothetical) availability.¹⁹⁰ Deciding whether this result can be justified depends on a closer look at the policies that underlie patent law in general and the various categories of prior art listed in § 102.

IV. PATENT POLICY AND THE RECOVERY OF “LOST ART”

As previously discussed, the general objective of patent law is to promote the progress of the useful arts by providing inventors with a financial incentive to incur the costs of technological innovation.¹⁹¹ Patents “encourage[] both the creation and the public disclosure of new and useful advances in technology.”¹⁹² Those advances benefit the public in the form of new and better products, increased employment and economic opportunities, and superior lives in general.¹⁹³

The Supreme Court has seldom enlarged upon the broader goals of patent law without stressing the importance of the public domain. In *Graham v. John Deere Co.*,¹⁹⁴ the Court warned that the constitutional language allowing Congress to award patents to inventors is “both a grant of power and a

188. *Gayler v. Wilder*, 51 U.S. 477, 497 (1850).

189. *Eolas Techs., Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1334 (Fed. Cir. 2005). The “subsequent action” considered in that case was a purported abandonment of the invention by the party who disclosed it, not, for example, a belated promise of confidentiality. Nevertheless, the court’s manner of expression does suggest a broad statement of principle.

190. On the matter of proof, see discussion *infra* Part IV.C.

191. See *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 64 (1998) (patents compensate inventors “for their labor, toil, and expense in making the inventions, and reducing the same to practice for the public benefit” (quoting *Seymour v. Osborne*, 78 U.S. 516, 533 (1870))); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480 (1974).

192. *Pfaff*, 525 U.S. at 63.

193. See *Kewanee*, 416 U.S. at 480.

194. 383 U.S. 1 (1966).

limitation.”¹⁹⁵ In the exercise of its power, Congress cannot “enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby.”¹⁹⁶ Specifically, Congress “may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.”¹⁹⁷ In fact, patent law’s “ultimate goal,” as expressed in *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, is not only to preserve the public domain, but to add to it by “bring[ing] new designs and technologies into the public domain through disclosure.”¹⁹⁸ The disclosures add to the public domain because, once a patent expires, others are free to practice what the patent teaches.¹⁹⁹ At that point, “knowledge of the invention enures to the people.”²⁰⁰ The rule, in short, is that patents must be limited to those things “which add to the sum of useful knowledge,”²⁰¹ and the corollary of that rule is that “matter once in the public domain must remain in the public domain.”²⁰²

The Supreme Court has explained that the “stringent requirements for patent protection” are measures designed to put that policy in effect—“to assure that ideas in the public domain remain there for the free use of the public.”²⁰³ Section 102 of the Patent Act, in particular, “exclude[s] from consideration for patent protection knowledge that is already available to the public,” because “monopoly [rights] in such information would not only serve no socially useful purpose, [they] would in fact injure the public by removing existing knowledge from public use.”²⁰⁴ Lower courts have often justified the prior knowledge, printed publication, public use, and on sale categories of prior art in precisely those terms: “[O]nce an invention is in the public domain, it is no longer patentable by anyone.”²⁰⁵ One cannot patent what is already “known” because the later inventor, in such a case, “has not

195. *Id.* at 5.

196. *Id.* at 6.

197. *Id.*; *see also* *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989).

198. *Bonito Boats*, 489 U.S. at 151.

199. *See* *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480–81 (1974).

200. *See id.* at 481 (quoting *United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 187 (1933)).

201. *Graham*, 383 U.S. at 6.

202. *Kewanee*, 416 U.S. at 484.

203. *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979); *see also* *Bonito Boats*, 489 U.S. at 150.

204. *Bonito Boats*, 489 U.S. at 148.

205. *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009) (quoting *In re Hall*, 781 F.2d 897, 898 (Fed. Cir. 1986)); *see also* *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008); *In re Bayer*, 568 F.2d 1357, 1361 (C.C.P.A. 1978).

contributed to the store of knowledge, and has no entitlement to a patent.”²⁰⁶ The printed publication bar “prevent[s] withdrawal by an inventor, as the subject matter of a patent, of that which was already in the possession of the public.”²⁰⁷ The public use and on-sale bars “stem from the same ‘reluctance to allow an inventor to remove existing knowledge from public use.’”²⁰⁸

Courts sometimes discuss the issue in terms of a failure of consideration, or a quid pro quo. Inventors who offer no advancement or disclosure other than what is already in the possession of the public have not upheld their end of the patent bargain.²⁰⁹ To grant a patent under such circumstances could be deemed “a waste of the patent laws.”²¹⁰ Alternatively, the public may suffer in positive terms because it relied on its apparent freedom to use what the patent would take away.²¹¹ Reliance interests often arise where one might

206. *Woodland Tr. v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998).

207. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989) (quoting *In re Wyer*, 655 F.2d 221, 226 (C.C.P.A. 1981)); *see also* *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006); *Alcon Labs., Inc. v. Bausch & Lomb, Inc.*, 52 U.S.P.Q.2d 1927, 1931 (N.D. Tex. 1999).

208. *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1379 (Fed. Cir. 2005) (quoting *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 64 (1998)); *see also* *Motionless Keyboard Co. v. Microsoft Corp.*, 486 F.3d 1376, 1384 (Fed. Cir. 2007).

209. *See Pennock v. Dialogue*, 27 U.S. 1, 23 (1829) (if one could “monopolize that which was already common,” it would mean “no quid pro quo—no price for the exclusive right or monopoly conferred upon the inventor”); *Pickering v. Holman*, 459 F.2d 403, 407 (9th Cir. 1972) (“The publication bar goes upon the theory that the idea is already in the public domain and there can be no consideration offered in exchange for the grant of the monopoly.”); *In re Bayer*, 568 F.2d at 1359–60 (referring to “the theory that the patent grant is in the nature of a contract between the inventor and the public,” and observing that “if knowledge of the invention is already accessible to the public there is a failure of consideration”); *In re Tenney*, 254 F.2d 619, 624 (C.C.P.A. 1958) (stating “in consideration for the patent grant, something must be given to the public which it did not have before”).

210. *Levi Strauss & Co. v. Golden Trade, S.r.L.*, 1995 U.S. Dist. LEXIS 4899, at *116 (S.D.N.Y. Nov. 30, 1995).

211. *See Dey, L.P. v. Sunovion Pharms., Inc.*, 715 F.3d 1351, 1355 (Fed. Cir. 2013) (one policy underlying the public use bar “is ‘discouraging the removal, from the public domain, of inventions that the public reasonably has come to believe are freely available’” (quoting *Tone Bros. v. Sysco Corp.*, 28 F.3d 1192, 1198 (Fed. Cir. 1994))); *Baxter Int’l, Inc. v. COBE Labs., Inc.*, 88 F.3d 1054, 1058 (Fed. Cir. 1996); *Lough v. Brunswick Corp.*, 86 F.3d 1113, 1119–20 (Fed. Cir. 1996). This rationale may apply most often to commercial uses. *See, e.g., In re Caveney*, 761 F.2d 671, 676 (Fed. Cir. 1985) (the on-sale bar supports “a policy against removing inventions from the public domain which the public justifiably comes to believe are freely available due to commercialization”). However, the policy can apply to publications as well. *See, e.g., Pickering*, 459 F.2d at 407 (“The publication bar prevents patent rights from springing up which might prejudice those who practice the invention, reasonably assuming it was not or could not be the subject of a monopoly.”).

conclude from the passage of time that no one can lay claim to material that seems unencumbered by intellectual property rights.²¹²

Preserving and increasing the public domain is not the sole interest underlying the categories of prior art set forth in § 102. Another goal is to ensure promptness—both in introducing technological advancements to the public, and in beginning the process of seeking a patent that will lead, on its expiration, to unrestricted use of the invention.²¹³ An inventor who proceeds deliberately runs the risk of preemption by a printed publication, a public use, or a later inventor.²¹⁴ An inventor may choose instead to commercially exploit the invention while keeping it a secret, but, after the passage of one year, such use will bar the inventor from obtaining a patent. This one-or-the-other alternative²¹⁵ prevents the effective extension of the patent term that would occur if an inventor could rely on secrecy until competitors entered the scene, only then to turn to patent system to secure a period of exclusive rights.²¹⁶ In short, an inventor who exploits the invention commercially, or who discloses it publicly, must seek a patent quickly or forfeit the opportunity.²¹⁷

With these policies in mind, let us consider the following hypothetical. Inventor A, a university student, invents a formula that, after one application, safely and permanently restores gray hair to its original color. He makes the formula the subject of his senior thesis, one copy of which he personally shelves in a locked room at his university library. The library includes the

212. See *Lacks Indus. v. McKechnie Vehicle Components USA, Inc.*, 322 F.3d 1335, 1353 (Fed. Cir. 2003) (Newman, J., dissenting) (referring to potential reliance by “would-be competitors” on the apparent availability of knowledge later sought to be patented).

213. See *Woodland Tr. v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (§ 102(b) “is primarily concerned with the policy that encourages an inventor to enter the patent system promptly”).

214. The risks of the latter have been alleviated to a degree by the defense of prior use introduced in the America Invents Act. See 35 U.S.C. § 273 (2012).

215. See *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 68 (1998) (“As succinctly stated by Learned Hand: ‘It is a condition upon an inventor’s right to a patent that he shall not exploit his discovery competitively after it is ready for patenting; he must content himself with either secrecy, or legal monopoly.’” (quoting *Metallizing Eng’g Co. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516, 520 (2d Cir. 1946))).

216. See *Lough*, 86 F.3d at 1119 (the public use bar “prohibit[s] the inventor from commercially exploiting the invention for a period greater than the statutorily prescribed time”); *Tone Bros.*, 28 F.3d at 1198.

217. See *Netscape Commc’ns Corp. v. Konrad*, 295 F.3d 1315, 1320 (Fed. Cir. 2002) (“The public use bar serves the policies of the patent system, for it encourages prompt filing of patent applications after inventions have been completed and publicly used, and sets an outer limit to the term of exclusivity.” (quoting *Allied Colloids v. Am. Cyanamid Co.*, 64 F.3d 1570, 1574 (Fed. Cir. 1995))); *TP Labs., Inc. v. Prof’l Positioners, Inc.*, 724 F.2d 965, 968 (Fed. Cir. 1984) (“The general purpose behind all the [§ 102(b)] bars is to require inventors to assert with due diligence their right to a patent through the prompt filing . . . of a patent application.” (quoting 2 DONALD S. CHISUM, CHISUM ON PATENTS § 601 (1981 & Supp. 1983) (alteration in original))).

thesis in its catalog, and it may be retrieved and inspected in the library's reading room upon request. The thesis includes no claims of any legal right nor any request of confidentiality. Outside of the thesis, Inventor A discloses the formula only to his faculty advisor, Professor B. He provides a sample to Professor B for her own use. She warns Inventor A that under university policies disclosures to her are not confidential. Hoping to defray some of the costs of his student loans, Inventor A places an advertisement in the school newspaper, offering a gray hair remedy and providing his telephone number. After a few weeks with no response, he discontinues the advertisement. On graduation day, tragedy occurs. Lightning strikes the library and it burns to the ground. All of the contents of the library are consumed, except for the records (kept in a fireproof safe) demonstrating that no one ever consulted Inventor A's thesis. Professor B is overcome by smoke inhalation. On her hospital bed, she tells Inventor A, in the presence of witnesses, that his invention was miraculous, and that while she was sorely tempted to tell others the formula, she never did. With that, she dies. Inventor A, devastated by the loss of his mentor, abandons the invention and tells no one about it. Twenty years later, as his own hair begins to gray, Inventor A decides to develop the formula after all. But he finds that, in the meantime, Inventor C, working independently, has devised the same formula and obtained a patent for it. Inventor A contemplates challenging the validity of the patent.

Inventor A might claim that his thesis was a printed publication, even though it ceased to be available before anyone had a chance to read it. He might claim that providing the sample to Professor B was a public use, even though she shared it with no one. Finally, he might claim that he had placed the invention on sale, even though no one acquired the product or learned anything about what made it work. If we could return in time to the moment that Inventor A deposited his thesis in the library, shared his invention with Professor B, or advertised his formula in the newspaper, his actions were undoubtedly sufficient to generate prior art applying well-established case law. Yet it is equally clear from a perspective later in time that Inventor A did nothing to enrich the art or otherwise benefit the public. Where does that leave Inventor C?

A. *Statutory Interpretation*

Looking first at statutory language, Inventor A has a solid argument if "public use," "printed publication," and "on sale" are interpreted in the usual manner. If Inventor C filed for a patent before March 16, 2013, the older version of § 102 would apply. It refers, in § 102(a), to events "before the invention thereof by the applicant for patent," and, in § 102(b), to events

“more than one year prior to the date of the application.” If Inventor C filed after March 16, 2013, which we will assume to be the case, the newer version of § 102 would apply. It disallows a patent if “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.”²¹⁸ “Before” can be ambiguous. If I say to my daughter “you have to put on your shoes before you go outside,” I mean that her shoes should be on her feet *when* she goes outside. If I find her barefoot, she might point out that she *had* put on her shoes, before she took them off again. If Congress had substituted “*on* the effective filing date of the claimed invention” for “*before* the effective filing date of the claimed invention,” it would clearly have discounted, for example, public uses that had ceased to be public uses. Its failure to do so suggests that the on-going availability of prior art is immaterial. On the other hand, Congress could have been clearer still by using the words “*at any time before* the effective filing date of the claimed invention.”

If it is true that Congress meant by the addition of “otherwise available to the public” to eliminate as prior art uses that were effectively hidden, perhaps it would have preferred availability to be judged on an on-going basis. Ultimately, a use that was available to the public, but that ceased to be available, does not enrich the art any more than a use that was never available to the public at all. Although Congress might have agreed, there is no indication that Congress actually considered the issue. Based on the literal meaning of “before,” Inventor A probably prevails.

On the other hand, plain meaning has not prevented courts in the past from arriving at some unlikely interpretations of § 102—including the interpretation of “public use” that includes some uses that are secret.²¹⁹ Even if “before” leaves little room to argue, one might contend, with some credibility, that terms like “public use,” “printed publication,” and “on sale” imply continued availability to the public. Courts have said that, in effect, terms used in § 102 should be defined by the policies they serve.²²⁰ The next question, therefore, is whether it would support or undermine those policies to treat lost art as prior art under § 102.

218. 35 U.S.C. § 102(a) (2012).

219. *See, e.g., TP Labs.*, 724 F.2d at 972.

220. *See Tone Bros.*, 28 F.3d at 1198 (“[I]n order to determine whether an invention was in public use . . . a court must consider how the totality of the circumstances of the case comports with the policies underlying the public use bar.”); *J.A. LaPorte, Inc. v. Norfolk Dredging Co.*, 787 F.2d 1577, 1582 (Fed. Cir. 1986) (“[T]he purposes of the on-sale bar, in effect, define its terms.”).

B. *Protecting the Public Domain*

As previously discussed,²²¹ the Supreme Court has stated emphatically that one of the overriding principles of patent law is to ensure that information in the public domain remains there. Inventor A in our hypothetical could argue that his actions did place the formula in the public domain because persons skilled in the art could have found his formula in the university library, Professor B could have shared her knowledge without violating any duties of confidentiality, and so forth. Had the question arisen before the tragedy of the library fire, a court, applying the customary standards, would have agreed. Should we find that subsequent events *removed* the formula from the public domain, we would be disregarding one of patent law's central tenets— “[ensuring] that ideas in the public domain remain there for the free use of the public.”²²²

One response to this argument is that the Supreme Court was speaking to occasions where an *action of government* might remove information from the public domain—for example, by granting a monopoly on a technology already within the grasp of persons skilled in the art.²²³ If anything was lost to the public domain in our hypothetical, it was because of happenstance, not because of government action. The library burned, Professor B lost her life, and the newspaper advertisement failed; these are the occurrences that diminished the sum of information available to the public. To say that the public domain may be reduced through the passage of time and the course of events seems much less repugnant than saying that government may take from the public what it already possesses.

Furthermore, one should not employ the term “public domain” too casually. Critical examination of the public domain is a phenomenon of recent origin,²²⁴ and the widespread use of the term seems to date only to the opinions of Judge Learned Hand,²²⁵ who sometimes referred to the “public

221. See *supra* notes 202–203 and accompanying text.

222. *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979); see also *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989).

223. See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 6 (1966) (explaining that Congress may not “enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby”).

224. See James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 LAW & CONTEMP. PROBS. 33, 59 (2003) (crediting David Lange's *Recognizing the Public Domain*, 44 LAW & CONTEMP. PROBS. 147 (1981) with initiating contemporary analysis of the public domain).

225. See Tyler T. Ochoa, *Origins and Meanings of the Public Domain*, 28 U. DAYTON L. REV. 215, 243 (2002).

demesne.”²²⁶ In his foundational article, David Lange called usage of the term “amorphous and vague.”²²⁷ The problem, at least in part, is that there are many competing definitions of the “public domain”²²⁸—at least thirteen, according to Pamela Samuelson’s tally of 2006.²²⁹

One plausible definition of the public domain in a patent law context is a negative definition: The public domain is simply the totality of all things that are not subject to intellectual property rights.²³⁰ This public domain includes the subject matter of expired patents,²³¹ discoveries without known utility,²³² and the building blocks that have been singled out as “basic tools of scientific and technological work” available to all—laws of nature, natural phenomena, and abstract ideas.²³³ It also includes some things, like natural laws, that are not prior art under § 102, and it excludes, at least temporarily, some things that *are* prior art under § 102, like the subject matter of patents that have not yet expired. Importantly, the negative public domain includes things that are not subject to intellectual property rights but that *could be*, without contradicting any basic principles. A few decades ago one might have said that business methods were in the negative public domain because they were categorically excluded from the subject matter of patents. When the Federal Circuit decided otherwise in its 1998 *State Street* decision,²³⁴ business methods ceased to be a part of the public domain—at least categorically—because they could be patented. Subsequently, the Supreme Court, avoiding the broader language of *State Street*, characterized certain business methods as unpatentable abstract ideas.²³⁵ Perhaps at that point the public domain re-expanded.

226. See, e.g., *W. States Mach. Co. v. S. S. Hepworth Co.*, 147 F.2d 345, 348 (2d Cir. 1945).

227. Lange, *supra* note 224, at 177 (“In contrast to the interests which receive recognition, the public domain tends to appear amorphous and vague, with little more of substance in it than is invested in patriotic or religious slogans on paper currency.”).

228. See Boyle, *supra* note 224, at 68 (“Just as there are many ‘properties,’ so too there are many ‘public domains.’”).

229. See Pamela Samuelson, *Enriching Discourse on Public Domains*, 55 DUKE L.J. 783, 788 (2006).

230. See Ochoa, *supra* note 225, at 217 (observing that “many sources simply state that the public domain is the body of ideas and works that are not subject to intellectual property protection,” but criticizing that approach as one that “simply begs the question”).

231. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480–81 (1974).

232. See *Brenner v. Manson*, 383 U.S. 519, 534 (1966).

233. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 71 (2012) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

234. *State St. Bank & Tr. Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

235. *Bilski v. Kappos*, 561 U.S. 593, 609 (2010).

The business method example illustrates the weakness of the negative public domain. It stands for nothing, other than the present state of affairs. It cannot be what courts have in mind when they speak of the importance of the public domain and the necessity of preserving it. The alternative is a positive public domain, best seen in the patent law context as a collection of unencumbered resources available for the use of persons skilled in the art.²³⁶ This public domain serves two important social goals. First, it allows the public to enjoy the fruits of technological progress, supplied to them through persons skilled in the art operating in a competitive marketplace. Countless products that we buy at attractive prices incorporate public domain technologies for which, fortunately, no one has to pay. Second, the public domain serves as the baseline, inspiration, and tool set for further technological achievements—the discoveries of the future building upon the discoveries of the past.²³⁷ These new achievements may be patentable, but soon they too will enter the public domain and become building blocks in turn. Society would be ill-served if these resources were taken away without any compensating benefit. This, then, is the public domain to be jealously guarded, and this is the public domain that courts and scholars must have in mind when they insist on its “irrevocable nature.”²³⁸

Protecting the public domain has become a rallying cry, similar to protecting the “environment”—a rallying cry that unites interests opposed to the expansion of intellectual property rights in a variety of fields.²³⁹ It is an important rhetorical counterweight to the sacredness of “private property.”²⁴⁰ Hence, for anyone concerned about the over-expansion of intellectual property, the idea of prior art exiting the public domain may inspire

236. See Samuelson, *supra* note 229, at 808–09 (discussing the public domain as a “domain of accessible knowledge”).

237. See *id.* at 826–27 (referring to the many positive functions of the public domain, including serving as “a building block for the creation of new knowledge” and an “enabler of competitive imitation” or “follow-on creation”); see also Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 968 (1990) (describing copyright’s public domain as “a device that permits the rest of the system to work by leaving the raw material of authorship available for authors to use”); A. Samuel Oddi, *Plagues, Pandemics, and Patents: Legality and Morality*, 51 IDEA 1, 15 (2011); A. Samuel Oddi, *The Tragicomedy of the Public Domain in Intellectual Property Law*, 25 HASTINGS COMM. & ENT. L.J. 1, 13 (2002) (recognizing the importance of the public domain as the stimulus for further creation).

238. Ochoa, *supra* note 225, at 215; see also *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 484 (1974) (“[M]atter once in the public domain must remain in the public domain.”); Samuelson, *supra* note 229, at 794 (referring to Diane Zimmerman’s “mandatory public domain,” so called because “what goes into [this public domain] must stay there” (alteration in original)).

239. See Boyle, *supra* note 224, at 70–73.

240. See *id.* at 70; Ochoa, *supra* note 225, at 257–61 (discussing the importance of viewing the public domain as public *property*, owned by everyone).

resistance. We should remember, however, that what is important about the positive public domain is that it is an *available* resource.²⁴¹ If information becomes unavailable, through no one's fault, then the basic tradeoff that is the premise of patent law should be operable once again. Exclusive rights for a limited time should be a fair price, and a good investment, in exchange for the *rediscovery* of useful technology. If Inventor A's discovery was genuinely lost, until recovered by Inventor C, then the rhetoric of the public domain should not prevent Inventor C from receiving a reward that was well earned. If terms like "public use" and "printed publication" can be defined in terms of policy, we could justifiably exclude instances in which information had been available to the public but ceased to be. In fact, incentivizing the rediscovery of such information should *add* to the public domain.²⁴²

C. When is Prior Art "Lost?"

The foregoing argument depends on the notion that information once available to the public can become "lost." Perhaps that never happens, or it happens so rarely that it can be overlooked.

One category of prior art that has received little discussion in this article is the category of prior patents. The disclosures of prior patents can certainly be neglected, but there can be few instances in which they do not remain available to the public. In *Western States Machine Co. v. S. S. Hepworth Co.*,²⁴³ Judge Hand conceded that a prior patent had "made no impression upon the art[.]"²⁴⁴ but that did not deprive it of its capacity to invalidate a later patent. Although "[a] patent may have lain for years unheeded, as little [a] contribution to the sum of knowledge as though it had never existed, an idle gesture long since drifted into oblivion[.]" it would still serve as prior art to a later discovery "as though it had entered the very life blood of the industry."²⁴⁵ He imagined an exception for "prior patents in Limbo, when they have really gone to the place of departed spirits[.]" but devising such an

241. See *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1453 (Fed. Cir. 1984) (referring to the "basic principle . . . that no patent should be granted which withdraws from the public domain technology already *available* to the public" (emphasis added)); Samuelson, *supra* note 229, at 808 (discussing the public domain of *available* knowledge).

242. See Samuelson, *supra* note 229, at 808 ("If increased patenting enlarges the domain of accessible knowledge, perhaps the public domain of science is enhanced, not harmed, by the additional patents.").

243. 147 F.2d 345 (2d Cir. 1945).

244. *Id.* at 350.

245. *Id.*

exception was not a task for the courts.²⁴⁶ However old a patent may be, it remains a resource available to researchers motivated to find it. Moreover, drawing lines between “unheeded” patents and those that comprise the “life blood of the industry” would be fraught with difficulty. It is no surprise that Congress has never embraced Learned Hand’s “Limbo” for unappreciated prior patents.

Printed publications are another matter. Documents may be removed from a library, and in the world of digital information it is a trivial task to take materials offline. In fact, the ephemeral nature of electronic materials has called into question whether they should be treated as printed publications at all.²⁴⁷ If a publication was available, but no person skilled in the art took advantage of that availability until it was too late, from the public’s perspective it would be the same as though the publication had never existed. It did nothing to improve their welfare, nor could it do so in the future. Perhaps courts should assign publications of that sort to a Limbo of their own.

The problem does not seem one of policy but of evidence. While library records may show that no one checked out a document, it may be impossible to show that no one consulted it while it lay on the shelf. Perhaps persons skilled in the art *did* see the now absent document, and perhaps they put its teachings to use or held them in reserve until needed. That would be a problem in some cases; it need not be a problem in every case. As more information becomes available electronically, it may be quite feasible to demonstrate that no one ever downloaded a file or visited a web page. In doubtful cases, the matter could be resolved by placing the burden of proof on the inventor to demonstrate that a document formerly available became unavailable before it made any contribution to the art.

One could treat other kinds of prior art similarly. If a limited audience, under no obligations of secrecy, witnessed an invention in use, that use could be considered, for the time being, a public use. But if an inventor could demonstrate that knowledge of the invention stopped there—perhaps the inventor secured promises of confidentiality afterwards, or the witnesses simply did not pass on what they knew—then, in retrospect, the use could be treated as not a public use, because it did not, in fact, make any contribution to the art. In the same way, if courts interpreting the America Invents Act ultimately decide that commercial uses must inform the public, they could distinguish between uses that added to the sum of knowledge and those that, for whatever reason, missed their opportunity. Again, the burden of proof

246. *Id.*

247. See Max Stul Oppenheimer, *In Vento Scribere: The Intersection of Cyberspace and Patent Law*, 51 FLA. L. REV. 229, 261–63 (1999).

could be placed on the inventor. The patentee in *New Railhead*, for example, might have been compelled to supply evidence that the foreman of the drilling team had shared his knowledge with no one before entering into a belated nondisclosure agreement.²⁴⁸

One problem with this approach would be deciding what it means to “add to the sum of knowledge” or make “contribution to the art.” A teaching may be ignored because there is no pressing need for it. If conditions change and the teaching can be discovered by a researcher exercising reasonable diligence, then what was formerly overlooked may become the “life blood of the industry.” The on-going potential to contribute should be all that is required in such cases. A patent should not take from the public information that it already possesses, even if its potential, in terms of concrete advantages to the public, is still unrealized. It makes sense, therefore, to treat the *availability* of information as paramount.²⁴⁹ If an interested researcher who needs the information can find it, then that information can rightly be considered a component of the art, even if it has not yet been put to use.

On the other hand, must information be available *to all* before it can be treated as a permanent addition to the public domain? Must it be available to any hypothetical researcher exercising reasonable diligence? Suppose that fifty persons skilled in the art viewed a poster board disclosing an invention, but swore afterward that they had not communicated the information to anyone else. If those fifty individuals actually represented *everyone* of skill in a highly-specialized art, it would hardly seem to matter. Even one person, like the drilling foreman in *New Railhead*, might use what he had learned without passing it on. If so, perhaps informing even that one person made a small contribution to the art.²⁵⁰ In the extreme cases, it would not be difficult to determine whether art had or had not been “lost.” If the art became inaccessible before anyone could take advantage of it, clearly it was lost; if it remained available to any interested researcher, clearly it was not. In-between cases may be difficult, but no more so than deciding whether something constitutes a printed publication or a public use in the first instance. The emphasis should be on future availability of the reference to the practitioners who need it, because that is how prior art can make a meaningful contribution to public welfare.

248. See *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1299 (Fed. Cir. 2002).

249. See discussion *supra* Part I.

250. Recall that in *Gayler v. Wilder* the Court suggested that the design of the fireproof safe would have been “lost” only if the inventor himself had forgotten it. 51 U.S. 477, 498 (1850) (“[I]f the Conner safe had passed away from the memory of Conner himself . . . the knowledge of the improvement was as completely lost as if it had never been discovered.”).

D. Forfeiture

Now let us vary the hypothetical so that Inventor A seeks a patent for himself, and he asks us to ignore the events of his university days. Let us also imagine that there is no Inventor C, whose own actions might stand in the way. Can Inventor A argue that he is entitled to a patent because his thesis, his disclosures to Professor B, and his failed newspaper advertisement made no enduring contribution to the art? Perhaps not, because his actions may have forfeited his chance to seek exclusive rights.

Patent law is intended to encourage promptness in disclosing technological advancements and in securing exclusive rights.²⁵¹ The sooner an invention is made the subject of a patent, the sooner the public has the benefit of the patent's disclosures, and the sooner the public will have the full benefits available on the patent's expiration.²⁵² If nothing stood in the way of Inventor A patenting his formula years ago, his lack of diligence may be reason enough to deny him a patent today. The penalty would encourage Inventor A, and others in his position, to bring the benefits of an invention to the public with greater dispatch.

Once an invention is "ready for patenting," the inventor should file an application promptly or risk forfeiting the advantages of the patent system.²⁵³ A non-experimental commercial use of the invention typically occurs when the invention is ready for patenting; if the invention is complete enough to be economically exploited, there may be little justification for delay. The same is true of a printed publication, which must include an enabling description of the invention to anticipate.²⁵⁴ The description in the publication often might

251. *Woodland Tr. v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (referring to "the policy that encourages an inventor to enter the patent system promptly"); *see also* *Lacks Indus. v. McKechnie Vehicle Components USA, Inc.*, 322 F.3d 1335, 1353 (Fed. Cir. 2003) (Newman, J., dissenting) ("The statutory rule that an inventor is not entitled to a patent if he publishes or offers to sell or publicly uses the invention more than a year before he files a patent application is designed to press the inventor into timely participation in the patent system."); *Netscape Commc'ns Corp. v. Konrad*, 295 F.3d 1315, 1320 (Fed. Cir. 2002) (explaining that the public use bar "serves the policies of the patent system [by] encourag[ing] prompt filing of patent applications after inventions have been completed and publicly used"); *In re Caveney*, 761 F.2d 671, 676 (Fed. Cir. 1985) (explaining that one of the policies underlying the on-sale bar is "a policy favoring prompt and widespread disclosure of inventions to the public"); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983) ("Early public disclosure is a lynchpin of the patent system.").

252. *See Pennock v. Dialogue*, 27 U.S. 1, 19 (1829) (explaining that the patent system can best promote the progress of the useful arts "by giving the public at large a right to make, construct, use, and vend the thing invented, at as early a period as possible").

253. *See Pfaff v. Wells Elecs.*, 525 U.S. 55, 67–68 (1998); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 149 (1988).

254. 35 U.S.C. § 102 (2012).

have served for a patent application as well.²⁵⁵ Public use may be a less reliable measure of completeness, but perhaps it is fair to expect that within one year of a non-experimental public use an inventor should be ready to file. Accordingly, if Inventor A sought a patent, one might simply say that he slept on his rights too long, regardless of whether his earlier activities had contributed anything to the sum of human knowledge.²⁵⁶

If Inventor A had commercially exploited his formula while delaying his patent application, his conduct would raise an additional concern—that, in effect, Inventor A had extended the period during which he could benefit from exclusive use of the invention. Preventing this extension is one of the reasons for the on-sale bar and the public use bar.²⁵⁷ If Inventor A's advertisement had been successful and he had sold his formula during the intervening years (protecting it as trade secret until others discovered it independently), he should not be permitted to patent the formula at this late date.²⁵⁸ The system forces inventors to choose promptly between the limited term of patent protection and the uncertain benefits of trade secrecy.

In the original version of our hypothetical, it is difficult to see any place for a forfeiture theory because Inventor A never sought a patent. As Learned Hand found in *Metallizing*, issues of forfeiture that may sacrifice one's own

255. There are exceptions. For example, an anticipating publication need only enable one species of a claimed genus; the enabling disclosures of a patent must support the entirety of the claimed genus. *See* *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008) (“A patentee who chooses broad language must make sure the broad claims are fully enabled.”); *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1381 (Fed. Cir. 2003) (“An anticipatory reference need only enable subject matter that falls within the scope of the claims at issue, nothing more.”); Alan L. Durham, *Patent Scope and Enablement in Rapidly Developing Arts*, 94 N.C. L. REV. 1099, 1110–15 (2016) (discussing scope enablement). Additionally, an anticipating publication need not describe how to use the invention, if it describes how to make it. A patent specification must reveal both. *See* *Rasmusson v. Smithkline Beecham Corp.*, 413 F.3d 1318, 1325–26 (Fed. Cir. 2005).

256. Denying a patent to Inventor A might delay the public disclosure of his formula even longer, perhaps indefinitely, by taking from him the incentive of exclusive commercial exploitation. In the long run, however, the penalty of forfeiture may serve the cause of early disclosure.

257. *See* *Netscape Commc'ns Corp. v. Konrad*, 295 F.3d 1315, 1320 (Fed. Cir. 2002) (one of the policies behind the public use bar is to “set[] an outer limit to the term of exclusivity”); *Tone Bros. v. Sysco Corp.*, 28 F.3d 1192, 1198 (Fed. Cir. 1994) (explaining that the public use and on-sale bars “prohibit[] the inventor from commercially exploiting the invention for a period greater than the statutorily prescribed time”).

258. *See* *Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516, 518 (2d Cir. 1946) (after he had “[held] back from the knowledge of the public the secrets of his invention . . . it would materially retard the progress of science and useful arts’ to allow [an inventor] fourteen years of legal monopoly ‘when the danger of competition should force him to secure the exclusive right’” (quoting *Pennock v. Dialogue*, 27 U.S. 1, 19 (1829))).

ability to obtain a patent need not affect the rights of a third party—in the hypothetical, Inventor C.²⁵⁹ Inventor C was not responsible for anything that Inventor A may have done. Hence, the only question relevant to Inventor C is whether Inventor A had already given to the public the benefits for which Inventor C took credit. If, in fact, no one profited from Inventor A’s abortive disclosures, then the answer seems to be no.

E. Abandonment and Reliance

In *Metallizing*, Judge Hand distinguished between forfeiture and abandonment, the latter involving a voluntary relinquishment of rights.²⁶⁰ Abandonment “presupposes a deliberate, though not necessarily an express, surrender of any right to a patent.”²⁶¹ The “legal source” of the principle of abandonment is that “by renouncing the right the inventor irrevocably surrenders it.”²⁶²

An inventor’s deliberate abandonment of rights has long been coupled with the theme of irrevocability. In *Whittemore v. Cutter*,²⁶³ the court found that if the inventor of improvements to a machine had “suffered them to be used freely and fully by the public at large for . . . many years,” then “he must be deemed to have made a gift of them to the public, as much as a person, who voluntarily opens his land as a highway, and suffers it to remain for a length of time devoted to public use.”²⁶⁴ In *Pennock v. Dialogue*,²⁶⁵ the Supreme Court took up the highway analogy:

It has not been, and indeed cannot be denied, that an inventor may abandon his invention, and surrender or dedicate it to the public. This inchoate right, thus once gone, cannot afterwards be resumed at his pleasure; for, where gifts are once made to the public in this way, they become absolute. Thus, if a man dedicates a way, or other easement to the public, it is supposed to carry with it a permanent right of use.²⁶⁶

259. *See id.* at 519–20 (although the inventor’s own prior use and the prior use of a third party may come under the same statutory heading, they are relevant “for quite different reasons”).

260. *Id.* at 520 (explaining “forfeiture has nothing to do with abandonment”).

261. *Id.*

262. *Id.* In contrast, the “legal source” of forfeiture is “the fiat of Congress that it is part of the consideration for a patent that the public shall as soon as possible begin to enjoy the disclosure.” *Id.*

263. 29 F. Cas. 1123, 1124 (D. Mass. 1813).

264. *Id.*

265. 27 U.S. 1 (1829).

266. *Id.* at 16; *see also* *Shaw v. Cooper*, 32 U.S. 292, 318 (1833).

Abandonment of this sort must be deliberate, even if the inventor's only action is to "suffer" the invention to be used by the public.²⁶⁷

If all that is required to make an irrevocable gift to the public is a voluntary act of relinquishment, Inventor A supplied that by depositing his thesis in the library, where it could be seen by anyone who wished, and by sharing his formula with Professor B, who was under no duty to keep it confidential. Why should such actions be irrevocable? That is not so clear. It may seem hypocritical for an inventor to confer a gift to the public (while perhaps, at the time, congratulating himself on his benevolence), only to change his mind later and take it away. But the unattractiveness of such conduct in the abstract is little reason to ignore patent law's fundamental emphasis on public benefit.

One issue may be public reliance on the apparent abandonment of rights to the invention. The policies supporting the on-sale bar include "a policy against removing inventions from the public domain which the public justifiably comes to believe are freely available . . ." ²⁶⁸ The same policy supports the public use bar.²⁶⁹ Perhaps where inventors allow the public to believe that an invention is "freely available," they should not be permitted to disappoint the public by withdrawing it. Disappointment alone seems a weak justification for denying an inventor the right to a patent. The disappointment may be more intense if members of the public were actually using the invention, and expected to continue. If the gray hair preventative required daily application, and members of the public had been using it already, it would be distressing to them if Inventor A could cut off their supply by obtaining a patent. Unless Inventor A was ready to supply their needs at competitive prices, it would be a step backwards from their perspective, not an advancement in the useful arts.²⁷⁰ A more tangible form of reliance would occur if investments were at stake. Perhaps a would-be competitor had already built a facility to supply the formula to the public in the belief that no patent interests would stand in its way. If that would-be competitor had been misled by Inventor A's actions, or simply his lack of diligence, then it would be unjust to render those investments worthless.

267. See *Shaw*, 32 U.S. at 317–19; *Whittemore*, 29 F. Cas. at 1124 (gift to the public may be by "acquiescence or assent"). If "knowledge of the invention [were] surreptitiously obtained and communicated to the public," that would not lead to an abandonment, unless the inventor acquiesced or failed to exercise vigilance to protect his rights. *Shaw*, 32 U.S. at 319.

268. *In re Caveney*, 761 F.2d 671, 676 (Fed. Cir. 1985).

269. *Cont'l Plastic Containers v. Owens Brockway Plastic Prods., Inc.*, 141 F.3d 1073, 1079 (Fed. Cir. 1998) ("The primary policy underlying the 'public use' case is that of detrimental public reliance."); *Tone Bros. v. Sysco Corp.*, 28 F.3d 1192, 1198 (Fed. Cir. 1994).

270. See *TP Labs., Inc. v. Prof'l Positioners, Inc.*, 724 F.2d 965, 968 (Fed. Cir. 1984) (identifying one of the purposes of the § 102(b) bars as "protecting the public in its use of the invention where such use began prior to the filing of [a patent] application").

One might point out that the reasoning here is circular. Section 102 itself is the principle reason one can justifiably conclude that an invention is freely available, where the invention had been used publicly or offered for sale for a period of time without evidence of a patent application. More importantly, detrimental reliance simply does not occur in every case where an inventor has taken the steps that might serve to dedicate an invention to the public. In the original version of the hypothetical, no one relied on Inventor's A's actions to conclude that the formula was available. Hence, public reliance is no reason to conclude that his actions made an irrevocable contribution to the public domain.

V. CONCLUSION

Section 102 of the Patent Act uses simple terms to accomplish a number of goals. It encourages promptness in disclosing inventions, it prevents inventors from extending the term of their exclusive rights beyond that contemplated by the patent laws, it protects individuals who have justifiably relied on their apparent freedom to use an invention, it ensures that inventors have earned their patent reward by making a meaningful contribution to public welfare, and it prevents inventors from taking away what the public already possesses. When courts define terms like "public use" with so many goals in mind, it is apt to lead to confusion. In the context of our hypothetical, one might say that Inventor A's "public use" of his formula irrevocably forfeited his own right to patent, simply because he delayed without adequate excuse; it is something quite different to say that the same "public use" should deny Inventor C's right to a patent, unless, in retrospect, Inventor A's actions served to add his formula to the general fund of knowledge, or they reasonably convinced someone that the formula could be used without restraint. Although familiar terms like "public use" and "printed publication" survived the adoption of the America Invents Act, the statute's emphasis on prior art "available to the public" provides some excuse for exploring such distinctions.

When Justice Taney discussed "lost arts" in *Gayler v. Wilder*,²⁷¹ he rightly considered the interest of the public in fostering technological advancement. If this is the overriding goal of patent law—as the Constitution and the courts assure us that it is—then there should be a place for recognizing that prior art can be "lost" in the sense that its potential to contribute to the public welfare never came to fruition. That should be taken into account when we consider whether an alleged public use, printed publication, or commercialization of

271. 51 U.S. 477, 497 (1850).

an invention should stand in the way of a later inventor who worked independently, and who, unlike the first inventor, *did* make a meaningful and lasting contribution to progress of technology. Because preserving the public domain is an important consideration, art should be considered “lost” only in the clearest cases, and the burden of proof should be on the party who seeks exclusive rights. Nevertheless, in those clear cases, a reflexive reverence for the public domain should not prevent us from recognizing that conditions can change, and that the progress of the useful arts and the interests of the public can be best served by rewarding with patent rights the rediscovery of an art that has ceased to be “available” to interested practitioners. If the literal terms of § 102 and the legacy of court decisions stand in the way, then it is a matter worthy of the attention of Congress when it once again turns its attention to patent reform.