

# The Scope of the Prior Art

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## ABSTRACT

*The courts and the U.S. Patent and Trademark Office (“USPTO”) assess whether an invention may be patented by comparing it to the state of the art, which the patent community terms the “prior art.” Heavily influenced by Oliver Wendell Holmes Jr. and Learned Hand, and more recently expanded by the America Invents Act, the Patent Act features the broadest definition of prior art in U.S. history. No matter how remote, evanescent, or obscure, any activity or publication that occurs one day before the inventor files a patent application—anywhere in the world—may prove patent-defeating.*

*The government also holds patent proprietors accountable for information it deliberately withholds from the public. The USPTO maintains pending patent applications—including information on climate change mitigation, public safety, life-saving medications, and other inventions of extraordinary social significance—in confidence for at least eighteen months and possibly far longer. Collectively, the agency withholds patent applications from the public for a duration of over one million years, each and every year. Yet this body of information, held in secrecy at a time when its disclosure would prove of greatest value, qualifies as prior art as of its filing date.*

*Patent law’s prior art definition poorly serves innovation policy. It extends inefficient patent races, and it adds to the persistent concern that USPTO examiners fail to identify the most relevant prior art when deciding whether to approve a patent or not. Worse yet, judicial invalidation of issued patents hinges upon a story in which innovative firms should have taken existing knowledge into account before engaging in their own research and development efforts. Proprietors of invalidated patents are deemed to have acted inefficiently and endeavored to pilfer the public domain by obtaining propriety rights in old inventions. This account simply does not hold where only the most exhaustive, financially unconstrained search could unearth secluded activities in distant lands, where members of the public could not discern secret prior art maintained by the USPTO under any legitimate circumstances, and where the USPTO has no realistic way to research the full scope of the prior art.*

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*This Article calls for fundamental reconsideration of the role of obscurities and secrets as patent-defeating prior art. It asserts that a reference should qualify as prior art only if a skilled searcher could have located it with a reasonable effort, that secret prior art at the USPTO should be restricted or eliminated altogether, and that the moribund “prior commercial use” statute should be reinvigorated.*

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#### INTRODUCTION

An invention must be novel and must not have been obvious to a skilled artisan to be eligible for patenting.<sup>1</sup> The courts and U.S. Patent and Trademark Office (“USPTO”) make these determinations by comparing claimed inventions to the state of the art—which, in patent parlance, is termed the “prior art.”<sup>2</sup> Heavily influenced by rulings from Oliver Wendell Holmes Jr.<sup>3</sup> and Learned Hand,<sup>4</sup> and more recently modified by the Leahy-Smith America Invents Act (“AIA”),<sup>5</sup> the Patent

<sup>1</sup> 35 U.S.C. §§ 102(a), 103.

<sup>2</sup> *Id.* § 102(a).

<sup>3</sup> See *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U.S. 390 (1926).

<sup>4</sup> See *Metallizing Eng’g Co. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516 (2d Cir. 1946).

<sup>5</sup> Leahy-Smith America Invents Act (AIA), Pub. L. No. 112-29, 125 Stat. 284 (2011).

Act<sup>6</sup> defines prior art more broadly than at any time in history. With limited exceptions, any patent, printed publication, sales offer, public use, and any other publicly available information—available anywhere in the world one day before a patent application is filed—provides a basis for invalidating an issued patent.<sup>7</sup>

Judicial opinions interpret each of these five categories of prior art references expansively. Courts deem even a single, limited use that results in negligible disclosure of an invention to be “public” within the meaning of the Patent Act. For example, a concealed use of an invention by a “public” of one person meets the minimal standard of accessibility established by the Supreme Court.<sup>8</sup> One copy of a dissertation in a foreign university library similarly qualifies as a “printed publication,”<sup>9</sup> as does a document that one could consult only by personally visiting the Australian Patent Office.<sup>10</sup> So, too, do other miscellaneous documents, including conference poster board presentations, industry white papers, postings on internet discussion forums, slide decks, videos, and working group documents.<sup>11</sup> The activities-based prior art categories act similarly, for even a single sales offer, public use, unrecorded oral statement, or other obscure disclosure made anywhere in the world may prove patent-defeating.<sup>12</sup>

Patent law’s prior art definition poorly serves innovation policy.<sup>13</sup> It contributes to the persistent concern that USPTO examiners fail to

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<sup>6</sup> 35 U.S.C. §§1–376.

<sup>7</sup> *See id.* § 102(a)(1).

<sup>8</sup> *Egbert v. Lippman*, 104 U.S. 333, 336 (1881).

<sup>9</sup> *In re Hall*, 781 F.2d 897, 899–900 (Fed. Cir. 1986). The Federal Circuit has also held, in *Centripetal Networks, Inc. v. Cisco Systems, Inc.*, 847 F. App’x 869, 876 (Fed. Cir. 2021), that a manual available only to those willing to pay \$25,000 for the accompanying product and that was kept password-protected on a website qualified as a prior art printed publication. *See generally* Leah Ehler, *The Printed Publication Bar and the Price of Publicly Available Information*, 101 N.C. L. REV. 1229 (2023) (arguing that the high standard set by *Centripetal Networks* for identifying publicly available publications undermines the objective of the patent system).

<sup>10</sup> *In re Wyer*, 655 F.2d 221, 226 (C.C.P.A. 1981). Since 1998, the Australian Patent Office has been known as IP Australia. *About Our Agency*, AUSTRALIAN GOVERNMENT: IP AUSTRALIA, <https://www.ipaustralia.gov.au/about-us/our-agency> [<https://perma.cc/6DCP-E3JL>]. The same result holds for drawings available only at the Canadian Intellectual Property Office by personal inspection. *See Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1377–78 (Fed. Cir. 2006).

<sup>11</sup> *See, e.g.*, *Huawei Techs. Co. v. Iancu*, 813 F. App’x 505, 508 (Fed. Cir. 2020) (working group document); *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1379–83 (Fed. Cir. 2018) (slide decks and videos); *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1381 (Fed. Cir. 2012) (online forum); *In re Klopfenstein*, 380 F.3d 1345, 1350–52 (Fed. Cir. 2004) (poster board presentation); *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1189–90 (Fed. Cir. 2003) (white paper).

<sup>12</sup> Timothy R. Holbrook, *What Counts as Extraterritorial in Patent Law?*, 25 B.U. J. SCI. & TECH. L. 291, 296–99 (2019). In one notable decision, the Supreme Court deemed an invention found only inside the walls of a “burglar-proof” safe to qualify as prior art. *See Hall v. Macneale*, 107 U.S. 90, 96–97 (1883).

<sup>13</sup> *See* Alan Devlin, *Revisiting the Presumption of Patent Validity*, 37 SW. U. L. REV. 323, 342 (2008) (“[T]here is little, if any, long-term social value associated with invalidating patents on the basis of prior art not within the realistic purview of the inventor . . .”).

identify the most relevant prior art when deciding whether to approve a patent or not.<sup>14</sup> Worse yet, judicial invalidation of issued patents is based upon a story in which innovative firms should have reviewed the pertinent prior art before engaging in their own research and development efforts.<sup>15</sup> Proprietors of invalidated patents are deemed to have acted inefficiently and, worse yet, have attempted to pilfer the public domain by obtaining propriety rights in old inventions. This account simply does not hold where only the most exhaustive, financially unconstrained search could unearth secluded activities in distant lands.

On the other hand, when patents are enforced, accused infringers commonly devote considerable resources toward an eleventh-hour, litigation-driven search to unearth any prior art reference, however obscure, that discloses the patented invention.<sup>16</sup> If successful, this search invalidates a patent of considerable value to the public.<sup>17</sup> Otherwise, the parties would not have indulged in one of the most time-consuming, complex, and costly forms of litigation on the planet.<sup>18</sup> In contrast, prior art that cannot be discovered through reasonable means can hardly be deemed to have contributed to public welfare. If used to invalidate a patent, it further upsets the reliance interests of the patent proprietor and reduces incentives to engage in research and development (“R&D”).<sup>19</sup>

Even more problematic than obscure prior art is secret prior art. Under the so-called “*Milburn* rule,”<sup>20</sup> patent applications that the

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<sup>14</sup> See, e.g., Sean B. Seymore, *The Null Patent*, 53 WM. & MARY L. REV. 2041, 2046–47 (2012) (noting the contention that patent examiners fail to identify the most relevant prior art); Bhaven N. Sampat, *When Do Applicants Search for Prior Art?*, 53 J.L. & ECON. 399, 399 (2010) (noting “growing concern that resource-strained examiners face difficulties in identifying relevant prior art”); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1528 (2001) (“[Examiners] regularly miss the most relevant prior art.”).

<sup>15</sup> See Seemantani Sharma, *Traditional Knowledge Digital Library: “A Silver Bullet” in the War Against Biopiracy?*, 17 J. MARSHALL REV. INTELL. PROP. L. 214, 223 (2017) (noting the “Libraries before Laboratories” view of prior art definition).

<sup>16</sup> See *In re Portola Packaging, Inc.*, 110 F.3d 786, 789 (Fed. Cir. 1997) (“Congress also was aware that newly discovered prior art often is identified only after a patent is issued because a potential infringer generally has greater resources and incentives to search for and find prior art than does the [USPTO].”); Devlin, *supra* note 13, at 342–43.

<sup>17</sup> See Devlin, *supra* note 13, at 343.

<sup>18</sup> See AM. INTELL. PROP. L. ASS’N, 2019 REPORT OF THE ECONOMIC SURVEY 50 (2019) (estimating median costs for patent litigation of up to four million dollars).

<sup>19</sup> See Jonathan S. Masur & Lisa Larrimore Ouellette, *Real-World Prior Art*, 76 STAN. L. REV. 703, 710–15 (2024) (evaluating the societal benefits of patents and prior art); Jonathan S. Masur & Adam K. Mortara, *Patents, Property, and Prospectivity*, 71 STAN. L. REV. 963, 967 (2019).

<sup>20</sup> The *Milburn* rule descends from *Alexander Milburn Co. v. Davis-Bournoville Co.*, 270 U.S. 390 (1926). E.g., *In re Mathews*, 408 F.2d 1393, 1395–96 (C.C.P.A. 1969). Sometimes the *Milburn* rule is referred to as a “springing” rule, e.g., Stephen Yelderman, *Prior Art in the District Court*, 95 NOTRE DAME L. REV. 837, 866–68 (2019) (adopting this terminology), analogized to the “mailbox” rule of contract law, e.g., Sean B. Seymore, *When Patents Claim Preexisting Knowledge*, 50 U.C. DAVIS L. REV. 1965, 1975 (2017), or deemed a “*nunc pro tunc*” or “now for then” rule, see Robert P. Merges, *Priority and Novelty Under the AIA*, 27 BERKELEY TECH. L.J. 1023, 1038 (2007).

USPTO either publishes or allows to be issued as granted patents qualify as prior art as of their filing date.<sup>21</sup> The result is that the USPTO rewards patentees that maintain technologies in secret for at least eighteen months and possibly far longer.<sup>22</sup> The practical effect of the troubling *Milburn* rule is that the government deliberately withholds valuable technical information from the public at a time when its disclosure would be of greatest value.

This Article calls for fundamental reconsideration of the role of obscurities and secrets as patent-defeating prior art. In Part I, this Article asserts that the patent system's prior art definition should express many of its core innovation policy goals, including promoting information disclosures, encouraging efficient R&D, and preserving the public domain. Part II of this Article describes how a series of judicial and legislative developments resulted in the most expansive prior art definition in the history of the United States, extending to remote and even inaccessible sources of information.

In Part III, this Article offers a critical analysis of the scope of the prior art. Our current definition aspires to maintain a robust public domain. But it considerably exceeds the administration abilities of the USPTO, thwarts the ability of the best-intentioned enterprise to conduct due diligence across the vast spectrum of prior art, and upsets the expectation of technology implementers that have commercialized products and processes with the understanding that they have acquired secure patent rights. The patent-defeating nature of sales offers, public uses, and even oral disclosures that took place anywhere in the world may also discourage enterprises from publicizing their activities to ensure that their work remains in the public domain. Worse yet, our current standards with respect to secret prior art make the USPTO complicit in extending patent races, limiting the diffusion of technical information and encouraging wasteful R&D and patent acquisition expenditures.

Part IV of this Article addresses these concerns by advocating three doctrinal reforms to the patent system. First, courts should recognize that a reference should rise to the level of prior art only if a skilled searcher could have located it with a reasonable effort. Second, Congress should limit the *Milburn* rule by narrowing its scope, reducing the time the USPTO withholds information from the public, or eliminating it altogether. Finally, in order to account for the reliance interests of third parties, the "prior commercial use" defense, now fallen into a

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<sup>21</sup> 35 U.S.C. § 102(a)(2).

<sup>22</sup> *See id.* § 122(b)(1)(A) (calling for the publication of pending patent applications "promptly after the expiration of a period of 18 months from the earliest filing date for which a benefit is sought"); *id.* § 122(b)(2) (establishing exceptions to the eighteen-month publication rule). This Article uses the term "patentees" collectively to refer to patent applicants and proprietors.

state of desuetude, should be reinvigorated.<sup>23</sup> The Article ends with a brief Conclusion.

## I. PRIOR ART DEFINITION AS INNOVATION POLICY

Prior art plays a foundational role within the patent system.<sup>24</sup> To qualify for the proprietary rights granted by the patent system, an inventor must create something that is both novel and nonobvious.<sup>25</sup> Stated differently, an invention may be patented only if it is not fully anticipated by a single prior art reference<sup>26</sup> or if one or more prior references within the scope of the prior art would not render the invention obvious to a skilled artisan.<sup>27</sup> Novelty and nonobviousness are arguably not merely statutory requirements but also constitutional ones.<sup>28</sup>

Virtually every exercise within the patent system involves the identification of references that qualify as prior art. The USPTO reviews each patent application in light of earlier patents, publications, and other references authorized by Congress and the courts.<sup>29</sup> The prior art definition plays a key role during patent enforcement, as accused infringers commonly assert the affirmative defense of invalidity in federal court.<sup>30</sup> Further, the sole bases for petitioning the USPTO to cancel a patent's claims in an *inter partes* review proceeding consist of earlier patents and publications, which qualify as prior art as specified by section 102 of the Patent Act.<sup>31</sup> Determining the scope of the prior art—within the

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<sup>23</sup> *Id.* § 273.

<sup>24</sup> See Timothy R. Holbrook, *Patent Prior Art and Possession*, 60 WM. & MARY L. REV. 123, 123 (2018) (“One would think that, as a central, crucial component of patent law, prior art would be thoroughly theorized and doctrinally coherent. Nothing could be further from the truth.”); see also Masur & Ouellette, *supra* note 19, at 707; Camila A. Hrdy & Sharon K. Sandeen, *The Trade Secrecy Standard for Patent Prior Art*, 70 AM. U. L. REV. 1269, 1271 (2021).

<sup>25</sup> 35 U.S.C. §§ 102, 103.

<sup>26</sup> See, e.g., *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (explaining that a patent may not be granted if “prior art . . . disclose[s] every limitation of the claim[]”).

<sup>27</sup> See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966) (describing nonobviousness as a prerequisite to patentability); see also *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007).

<sup>28</sup> See *Graham*, 383 U.S. at 6 (“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.”). *But see* *Eldred v. Ashcroft*, 537 U.S. 186, 199 (2003) (upholding the Copyright Term Extension Act of 1998 as consistent with the “limited [T]imes” requirement of Article I, Section 8, Clause 8 of the Constitution).

<sup>29</sup> 37 C.F.R. § 1.104(a) (the patent examiner “shall make a thorough investigation of the available prior art”).

<sup>30</sup> See, e.g., *Rosaire v. Baroid Sales Div., Nat'l Lead Co.*, 218 F.2d 72, 73 (5th Cir. 1955) (appellee, responding to lawsuit for patent infringement, asserted that patent was invalidated by prior art). For the affirmative defense of invalidity, see 35 U.S.C. § 282(b)(2).

<sup>31</sup> 35 U.S.C. § 311(b) (petition for *inter partes* review); see also *id.* § 301(a)(1) (citation of prior art); *id.* § 302 (request for *ex parte* reexamination).

boundaries set by Congress and the courts—amounts to one of the fundamental day-to-day tasks demanded by the system.

Deciding which references qualify as prior art at first blush appears straightforward. Surely, they consist of patents, publications, uses, or other activities that occurred prior to some relevant act by a patentee. But further reflection suggests that establishing the timing of the inquiry, as well as identifying the sorts of references that should qualify as prior art, amounts to a nuanced inquiry that holds important consequences for the U.S. innovation environment.<sup>32</sup> The process of research, development, and patent acquisition incorporates many milestones, including the dates that an inventor conceived of an invention, practiced it, drafted publications explaining it, filed patent applications claiming it, and procured issued patents both in the United States and abroad. In a world where innovation advances relentlessly, and multiple enterprises compete to develop innovative products,<sup>33</sup> the temporal aspect of the prior art definition often determines who will obtain a patent, if anyone at all.

Decisionmakers must further resolve whether appropriately timed references qualify as potentially patent-defeating prior art or not. Some references may consist of celebrated articles in high-impact journals<sup>34</sup> or even a widely distributed *For Dummies* instructional reference book.<sup>35</sup> But, others arise in geographically remote places<sup>36</sup> or from fields of technical endeavor distant to the patented invention.<sup>37</sup> They may have been poorly indexed or documented or even been purposefully concealed.<sup>38</sup> Determining which of these references should bear upon patent validity holds considerable consequences for innovation policy, in particular, the enhancement of knowledge flows, the promotion of efficient innovation, and the provision of intellectual property rights

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<sup>32</sup> See Amy R. Motomura, *Innovation and Own Prior Art*, 72 HASTINGS L.J. 565, 579–93 (2021) (describing the complex history of legislation and litigation that define the timing and content of a prior art inquiry).

<sup>33</sup> See Laura G. Pedraza-Fariña, *Patent Law and the Sociology of Innovation*, 2013 WIS. L. REV. 813, 827.

<sup>34</sup> See, e.g., *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1371 (Fed. Cir. 1986) (citing as a reference “the work of Nobel Prize winners G. Kohler and C. Milstein disclosing a Nobel Prize-worthy method for producing monoclonal antibodies in vitro (outside the body) published in an August 7, 1975, article”).

<sup>35</sup> See *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 910 (Fed. Cir. 2022) (discussing the *RFID for Dummies* manual). The acronym RFID refers to radio-frequency identification. *Id.* at 904.

<sup>36</sup> See Margo A. Bagley, *Patently Unconstitutional: The Geographical Limitation on Prior Art in a Small World*, 87 MINN. L. REV. 679, 686 (2003).

<sup>37</sup> See, e.g., Jeffrey T. Burgess, *The Analogous Art Test*, 7 BUFF. INTELL. PROP. L.J. 63, 65, 66 n.14 (2009).

<sup>38</sup> See Stephen Yelderman, *The Value of Accuracy in the Patent System*, 84 U. CHI. L. REV. 1217, 1272–76 (2017).

that are timely, stable, and do not divert significant financial resources from the innovation process itself.<sup>39</sup>

The connections between the prior art definition and innovation policy goals—at times not made explicit—deserve further explanation. Perhaps the most readily understood aspiration is the preservation of the public domain.<sup>40</sup> The public domain, in this context, consists of scientific and technical knowledge that is not subject to proprietary rights.<sup>41</sup> The absence of patent rights allows anyone to use that knowledge without the permission of another.<sup>42</sup> Because innovative activities build upon what others have done, a robust public domain provides a vast array of “building blocks” to promote further innovation.<sup>43</sup>

Conservation of the public domain also protects the reliance interests of technology implementers. Individuals and enterprises should not be liable for patent infringement by doing no more than applying advances made long ago.<sup>44</sup> If the public has reasonably “come to believe” that an invention is “freely available” for them to use—through commercialization, publication, or other disclosures—then the prior art definition should preclude that invention from patenting.<sup>45</sup>

The prior art definition should not only maintain the public domain but also expand it. Patent doctrine should promote the continual construction of an accessible library of technical information, which

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<sup>39</sup> See generally Stuart Minor Benjamin & Arti K. Rai, *Fixing Innovation Policy: A Structural Perspective*, 77 GEO. WASH. L. REV. 1 (2008) (describing how patent policy can affect innovation).

<sup>40</sup> See *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 584 U.S. 325, 336 (2018) (The Patent Act’s “statutory requirements prevent the ‘issuance of patents whose effects are to remove existent knowledge from the public domain.’” (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 6 (1966))).

<sup>41</sup> Cf. Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CALIF. L. REV. 1331, 1337 (2004) (noting that the term “public domain” has multiple meanings in different contexts).

<sup>42</sup> See *id.* at 1332. Of course, simply because information rests in the public domain does not mean that all are equally equipped to harness it. See *id.* (explaining that “knowledge, wealth, power, and ability” allow some to use material in the public domain more than others). In addition, enterprises may lack sufficient incentives to invest in public domain information to develop a marketable product. See Ian Ayres & Lisa Larrimore Ouellette, *A Market Test for Bayh-Dole Patents*, 102 CORNELL L. REV. 271, 276–77 (2017) (discussing the argument that exclusive rights are necessary to incentivize inventors to take risks to develop marketable products).

<sup>43</sup> See Mark A. Lemley, *Patenting Nanotechnology*, 58 STAN. L. REV. 601, 606 (2005) (discussing the implications of patents on basic ideas that animate an industry).

<sup>44</sup> See Alan L. Durham, *Lost Art and the Public Domain*, 49 ARIZ. ST. L.J. 1257, 1284–86 (2017).

<sup>45</sup> See, e.g., *Tone Bros. v. Sysco Corp.*, 28 F.3d 1192, 1198 (Fed. Cir. 1994) (in determining whether to remove an invention from the public domain, the court should consider whether the public reasonably believes the inventions are available); *In re Caveney*, 761 F.2d 671, 676 (Fed. Cir. 1985) (expressing a policy against removing inventions from the public domain if the public believes they are available); *Pickering v. Holman*, 459 F.2d 403, 407 (9th Cir. 1972) (“The publication bar prevents patent rights from springing up which might prejudice those who practice the invention . . .”).



enterprises may efficiently consult while engaging in R&D themselves.<sup>46</sup> A primary way the patent system builds the public domain is through the limited duration of patent rights. At the end of a patent's twenty-year term,<sup>47</sup> others may practice the claimed invention without regard to the expired patent.<sup>48</sup> And even during the term of a patent, others may build upon its disclosure in support of their own R&D efforts.<sup>49</sup>

The rules defining prior art may further support the "ultimate goal of the patent system . . . to bring new designs and technologies into the public domain through disclosure."<sup>50</sup> Even if an individual or enterprise declines to pursue patent protection on an innovative product or process, the prior art definition should nonetheless encourage the disclosure of that technology to the public through other means—for example, through public uses or sales of the invention, or through publications describing it.<sup>51</sup> Innovators who fail to sufficiently disclose their inventions to the public should be unable to prevent others who later independently develop the invention from patenting it themselves.<sup>52</sup>

Patent law's prior art definition should also promote efficient research. Enterprises should perform a search for existing knowledge before embarking on their own, presumably more costly, inventive efforts.<sup>53</sup> Patentees should therefore be held accountable to prior art

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<sup>46</sup> See Peter Lee, *Transcending the Tacit Dimension: Patents, Relationships, and Organizational Integration in Technology Transfer*, 100 CALIF. L. REV. 1503, 1517 (2012) ("In its ideal form, patent disclosure creates an 'invisible college of technology' that allows artisans to understand and practice new inventions.").

<sup>47</sup> See 35 U.S.C. § 154(a)(2).

<sup>48</sup> See *Coats v. Merrick Thread Co.*, 149 U.S. 562, 572 (1893) ("[P]laintiffs' right to the use of the embossed periphery expired with their patent, and the public had the same right to make use of it as if it had never been patented.").

<sup>49</sup> See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481 (1974) ("When a patent is granted and the information contained in it is circulated to the general public and those especially skilled in the trade, such additions to the general store of knowledge are of such importance to the public weal that the Federal Government is willing to pay the high price of . . . exclusive use for its disclosure, which disclosure, it is assumed, will stimulate ideas and the eventual development of further significant advances in the art.").

<sup>50</sup> *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989).

<sup>51</sup> See *Rosaire v. Baroid Sales Div., Nat'l Lead Co.*, 218 F.2d 72, 75 (5th Cir. 1955) (explaining "one of the basic principles underlying the patent laws is the enrichment of the art, and . . . a patent is given to encourage disclosure of inventions" by inventors who developed the same invention as the patent applicant).

<sup>52</sup> See, e.g., *Lockheed Aircraft Corp. v. United States*, 553 F.2d 69, 74 (Ct. Cl. 1977) (a classified document does not qualify as prior art because it was not available to the public).

<sup>53</sup> Donald S. Chisum, *Foreign Activity: Its Effect on Patentability Under United States Law*, 11 INT'L REV. INDUS. PROP. & COPYRIGHT L. 26, 35 (1980) ("[A] basic policy consideration [is] . . . the encouragement of broad and thorough searches of all secondary sources for a solution to a technical problem prior to engaging in primary innovative work, which is generally more costly. This is the same policy consideration which supports the use of any publication or patent as prior art, however old and whether or not in fact known to practitioners with ordinary skill in the pertinent art.").

references that they should have been able to identify through reasonable effort.

Because the USPTO requires inventors to disclose all information material to patentability, the agency will only be unaware of prior art if the applicant does not know of it either.<sup>54</sup> But as the government entity with the most significant patent expertise, the agency should also be able to reliably identify relevant prior art references even if the applicant has not identified them.<sup>55</sup> Otherwise, examiners risk awarding proprietary rights to undeserving inventions.

The USPTO's ability to administer the prior art definition dependably promotes the issuance of quality patents that may be reliably enforced. Informed agency decision-making also supports the reliance interests of patent proprietors.<sup>56</sup> Once a patent issues, patentees may make significant investments based upon the exclusive rights the government has granted them.<sup>57</sup> These investments may potentially be diminished, or even rendered valueless, if the patent is later determined to have been improvidently granted in view of the prior art.<sup>58</sup>

The prior art definition should also ameliorate the disadvantages of patent races. Under the somewhat stylized patent race model, firms compete to patent a discrete invention.<sup>59</sup> The winner of the race obtains a patent and precludes others from using the invention, resulting in wasted expenditures by the losers.<sup>60</sup> Information sharing among competitors provides one way to allow laggards to catch up to their competitors or to drop out of the race altogether in a prompt manner.<sup>61</sup> A prior art definition that encourages information sharing, within or without the patent system, could reduce the social losses associated with patent races.

The prior art definition should further reflect the push-and-pull nature of optimally timed patent filings. On one hand, sound innovation

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<sup>54</sup> John F. Duffy, *Reasoned Decisionmaking vs. Rational Ignorance at the Patent Office*, 104 IOWA L. REV. 2351, 2358 (2019).

<sup>55</sup> Cf. Shahrokh Falati, *Patent Eligibility of Disease Diagnosis*, 21 N.C. J.L. & TECH. 63, 136–38 (2020) (appreciating that the USPTO should be able to administer the patent eligibility standard under section 101 of the Patent Act).

<sup>56</sup> See Masur & Mortara, *supra* note 19, at 980–81 (noting concerns over the investment-backed expectations of patent owners).

<sup>57</sup> See Scott G. Greene, Note, *The Return of the King: Rethinking Lear, MedImmune, and the Effects of Licensee Estoppel in the Context of AIA Post-Grant Procedures*, 71 N.Y.U. ANN. SURV. AM. L. 81, 94 (2015).

<sup>58</sup> See Greg Reilly, *The PTAB's Problem*, 27 TEX. INTELL. PROP. L.J. 31, 46 (2019).

<sup>59</sup> See Neil C. Thompson & Jeffrey M. Kuhn, *Does Winning a Patent Race Lead to More Follow-On Innovation?*, 12 J. LEGAL ANALYSIS 183, 187 (2020).

<sup>60</sup> Gideon Parchomovsky, *Publish or Perish*, 98 MICH. L. REV. 926, 926–27 (2000).

<sup>61</sup> See Douglas Lichtman, Scott Baker & Kate Kraus, *Strategic Disclosure in the Patent System*, 53 VAND. L. REV. 2175, 2188 (2000) (noting the possibility of signaling by the leader of a patent race).

policy encourages the prompt filing of applications.<sup>62</sup> The USPTO currently publishes most pending patent applications eighteen months after they are filed.<sup>63</sup> In addition, patents ordinarily last, at most, twenty years from the date of filing.<sup>64</sup> The more promptly patent applications are filed, the more quickly they inform the public and the sooner they expire. Each of these measures hastens information flows and enrichment of the public domain.<sup>65</sup>

On the other hand, patent applications should preferably concern viable technology suitable for commercialization. Prior art rules that encourage early filing potentially result in patent applications with an incomplete disclosure of the technical and market information concerning an invention.<sup>66</sup> Early filings may lead to a surfeit of patent applications on early stage inventions, a lack of clarity in a patent's specification and claims, and the issuance of patents on speculative inventions that have never been reduced to practice.<sup>67</sup> Balancing the goals of encouraging the prompt filing of patent applications while also ensuring those applications disclose sufficiently developed technologies amounts to a nuanced policy choice.

Although these different innovation policies guide the prior art definition, they cannot possibly do so conclusively. Many of them point in different directions, leaving the policymaker to assess their competing merits in particular circumstances.<sup>68</sup> This Article next considers how Congress and the courts have done so across the long history of American patent law.

## II. THE EXPANDING SCOPE OF THE PRIOR ART

The earliest U.S. patent statute, the Patent Act of 1790,<sup>69</sup> stipulated that an invention was patentable if, until the date of invention, it was

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<sup>62</sup> *Allied Colloids Inc. v. Am. Cyanamid Co.*, 64 F.3d 1570, 1574 (Fed. Cir. 1995) (“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.”); see also Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 269–70 (1977) (explaining how the American patent system rewards inventors that file early).

<sup>63</sup> 35 U.S.C. § 122(b)(1)(A).

<sup>64</sup> *Id.* § 154(a)(2).

<sup>65</sup> See John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 483 (2004) (observing that early patenting or publication of pending applications accelerates the dissemination of information).

<sup>66</sup> See Christopher A. Cotropia, *The Folly of Early Filing in Patent Law*, 61 HASTINGS L.J. 65, 69 (2009) (arguing that the emphasis on early filing forces inventors to file for a patent before fully exploring the implementation or commercial viability of the invention).

<sup>67</sup> *Id.* at 103–04.

<sup>68</sup> See Motomura, *supra* note 32, at 565 (noting that “there is rarely a perfect time to file a patent application”).

<sup>69</sup> Patent Act of 1790, ch.7, § 1, 1 Stat. 109 (repealed 1793).

“not before known or used.”<sup>70</sup> By the time Congress enacted the Patent Act of 1952,<sup>71</sup> the statutory prior art definition had grown considerably in complexity and breadth. The next major codification of prior art principles, the AIA in 2011, further expanded the range of information appropriate for use in patentability determinations. The modern history of the prior art definition is worth tracing, as it demonstrates the increasing range of references to which patentees are held to account.

#### A. *The 1952 Act*

Section 102 of the Patent Act of 1952 consisted of a poorly organized and sometimes redundant list of events that collectively defined which references qualified as prior art.<sup>72</sup> The seven subsections of section 102 may nonetheless be broadly grouped into two categories. The first, as exemplified by section 102(a), considered when the applicant developed the claimed invention in the real world—on the laboratory bench, at the workshop, or in the garage.<sup>73</sup> Events that occurred before this date of invention qualified as prior art.

Under section 102(a), patents or “printed publication[s]” that were available anywhere in the world, prior to the invention date, constituted prior art.<sup>74</sup> In addition, an invention that was “known or used by others” in the United States prior to the invention date constituted prior art.<sup>75</sup> As a practical matter, patentees could eliminate a reference cited under section 102(a) prior art by proving an earlier invention date.<sup>76</sup> The patent bar referred to this step as antedating or “swear[ing] behind” a reference by demonstrating an earlier invention date.<sup>77</sup>

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<sup>70</sup> *Id.* at 109–10.

<sup>71</sup> Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792 (1952) (codified as amended in scattered sections of 35 U.S.C.).

<sup>72</sup> See Holbrook, *supra* note 24, at 134–35.

<sup>73</sup> Patent Act of 1952, ch. 10, § 102(a), 66 Stat. 792, 797 (codified as amended at 35 U.S.C. § 102).

<sup>74</sup> *Id.*

<sup>75</sup> *Id.* Section 102(a) stipulated that information known or used “by others” qualified as prior art and further established patents or printed publications as prior art regardless of their author. *Id.* Despite this distinction in wording, the courts concluded that a publication describing the inventor’s own work did not qualify as prior art under section 102(a). *In re Katz*, 687 F.2d 450, 454 (C.C.P.A. 1982) (rejecting a “literal reading” of section 102(a) and concluding that “one’s own work is not prior art under § 102(a) even though it has been disclosed to the public in a manner or form which otherwise would fall under § 102(a)”). The *Katz* opinion provides another example of the lack of judicial adherence to the literal wording of section 102 in assessing the scope of the prior art. See *id.*

<sup>76</sup> See Eamon M. Condon, Case Note, *The Old and New Divides of Patent Law: From the Theory of Antedation to Defining Immediately Envisageable Limited Classes*, 39 SANTA CLARA HIGH TECH. L.J. 267, 271 (2022).

<sup>77</sup> See, e.g., *Apator Miitors APS v. Kamstrup A/S*, 887 F.3d 1293, 1294 (Fed. Cir. 2018).

The other category, termed the “statutory bars,” was best exemplified by section 102(b).<sup>78</sup> Under section 102(b), a reference may preclude patenting if, more than one year prior to the filing date, the invention was “patented or described in a printed publication” anywhere or “in public use or on sale” in the United States.<sup>79</sup> The practical effect of section 102(b) is that, prior to the AIA, inventors were afforded a one-year grace period to file a patent application after they, or anyone else, had placed the invention before the public.<sup>80</sup> In combination with section 102(a), any reference available more than one year before the filing date could bar the application.<sup>81</sup> A reference that became available less than one year before the filing date could be antedated if the applicant could demonstrate an earlier invention date.<sup>82</sup>

An example illustrates the interaction of sections 102(a) and (b) prior to the enactment of AIA. Suppose that Lamarr filed a patent application on March 1, 2010, claiming a global positioning system (“GPS”) tracker.<sup>83</sup> The USPTO examiner then cited a journal article, published on January 1, 2010, as anticipatory prior art. Because the journal article was published within one year of Lamarr’s filing date, she may avoid the reference by showing that she invented her GPS tracker prior to January 1, 2010.<sup>84</sup> On the other hand, suppose that the USPTO examiner cited a book that was published on February 1, 2009. Because the book was publicly available more than one year prior to Lamarr’s filing date, it qualified as prior art even if Lamarr had invented her GPS tracker prior to that date.<sup>85</sup>

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<sup>78</sup> Another, more obscure statutory bar, section 102(d), addressed delays by an inventor who has previously obtained patent protection abroad. See *In re Kathawala*, 9 F.3d 942, 944–46 (Fed. Cir. 1993). In addition, section 102(c) barred a patent where the inventor abandoned the invention. See *Racing Optics, Inc. v. Avoc Corp.*, 195 F. Supp. 3d 1140, 1144–45 (D. Nev. 2016); *Kendall v. Winsor*, 62 U.S. (21 How.) 322, 329 (1858).

<sup>79</sup> Patent Act of 1952, ch. 10, § 102(b), 66 Stat. 792, 797 (codified as amended at 35 U.S.C. § 102).

<sup>80</sup> See Margo A. Bagley, *The Need for Speed (and Grace): Issues in a First-Inventor-to-File World*, 23 BERKELEY TECH. L.J. 1035, 1050 (2008) (explaining that an inventor would lose the right to file a patent application if they waited longer than one year). See generally Mark D. Janis, *Mr. Nicolson’s Cane*, 59 ARIZ. L. REV. 647 (2017) (discussing the “public use” statutory bar and the experimental use doctrine).

<sup>81</sup> Patent Act of 1952, ch. 10, § 102(a)–b, 66 Stat. 792, 797 (codified as amended at 35 U.S.C. § 102).

<sup>82</sup> See Dennis D. Crouch, *Is Novelty Obsolete? Chronicling the Irrelevance of the Invention Date in U.S. Patent Law*, 16 MICH. TELECOMMS. & TECH. L. REV. 53, 56–57 (2009).

<sup>83</sup> The reference is to the Austrian-American actor and inventor Hedy Lamarr, a pioneer in the field of wireless communications. See Alice George, *Thank This World War II-Era Film Star for Your Wi-Fi*, SMITHSONIAN MAG. (Apr. 4, 2019), <https://www.smithsonianmag.com/smithsonian-institution/thank-world-war-ii-era-film-star-your-wi-fi-180971584/> [<https://perma.cc/AKD7-D5ER>].

<sup>84</sup> See *supra* notes 73–75 and accompanying text.

<sup>85</sup> See *supra* note 81 and accompanying text.

Although the Patent Act of 1952 set these basic parameters, it did not further define such statutory terms as “public use” or “printed publication.” This effort was left to the courts, which afforded them an expansive interpretation that at times exceeded the reasonable capacity of section 102’s wording.<sup>86</sup> As will be seen, inventors seeking U.S. patents soon find themselves accountable not only to obscure prior art references but also to those that had been deliberately concealed.

### B. *Obscurities*

At first blush, such terms as “public use” or “printed publication” in section 102 would seem to require that the provision of information is broadly known, exposed to general view, or at least readily available for anyone to view.<sup>87</sup> Review of the judicial opinions interpreting section 102, however, would quickly dispel this initial impression. The prior art categories of section 102 have in fact been afforded an extraordinarily expansive reading, as demonstrated by three judicial opinions that are mainstays of patent law syllabi in law schools across the nation.

A long-time classroom staple, *Egbert v. Lippman*,<sup>88</sup> sets out the “classical standard” for deciding whether a “public use” has occurred.<sup>89</sup> In that case, the inventor provided a pair of corset springs to a friend.<sup>90</sup> The friend used the corset springs in a concealed manner for several years, without commercial benefit to the inventor, before the inventor sought patent protection.<sup>91</sup> The Supreme Court nonetheless concluded that a “public use” had occurred because the inventor gave the corset springs “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.”<sup>92</sup> A dissenting opinion observed that the majority’s holding seemed to remove the term “public” from the statute:

If 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*

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<sup>86</sup> See Sharon K. Sandeen, *Lost in the Cloud: Information Flows and the Implications of Cloud Computing for Trade Secret Protection*, 19 VA. J.L. & TECH. 1, 69 n.189 (2014).

<sup>87</sup> See Durham, *supra* note 44, at 1275–76 (arguing that judicial interpretation of that “public use” — only that access to the information is unrestricted — contradicts the ordinary meaning of the phrase).

<sup>88</sup> 104 U.S. 333 (1881). See generally Kara W. Swanson, *Getting a Grip on the Corset: Gender, Sexuality, and Patent Law*, 23 YALE J.L. & FEMINISM 57 (2011) (exploring the legacy of *Egbert v. Lippman* as a seminal case in patent law through a feminist analysis).

<sup>89</sup> *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1382 (Fed. Cir. 2005).

<sup>90</sup> *Egbert*, 104 U.S. at 335.

<sup>91</sup> *Id.* at 335, 337.

<sup>92</sup> *Id.* at 336.

use of that piece of steel, I am at a loss to know the line between a private and a public use.<sup>93</sup>

*Egbert v. Lippman* might be justified as a matter of forfeiture by the inventor, who allowed use of the invention for more than a decade prior to filing a patent application.<sup>94</sup> But the courts have also allowed the obscure uses of third parties to qualify as prior art. In *Rosaire v. Baroid Sales*,<sup>95</sup> for example, the asserted patent claimed a method for prospecting oil.<sup>96</sup> The accused infringer argued that a third party, the Gulf Oil Corporation, had previously conducted field trials using the same method.<sup>97</sup> According to the accused infringer, Gulf Oil Corporation had conducted the field trials near the town of Palestine, Texas, without any deliberate effort to maintain it in secrecy.<sup>98</sup> For its part, the patentee asserted that these uses should not qualify as prior art because they had been abandoned and were never revealed to the public through a publication or other disclosure.<sup>99</sup> The Court of Appeals for the Fifth Circuit struck the patent down, explaining:

With respect to the argument advanced . . . that the lack of publication of [the] work deprived an alleged infringer of the defense of prior use, we find no case which constrains us to hold that where such work was done openly and in the ordinary course of the activities of the employer, a large producing company in the oil industry, the statute is to be so modified by construction as to require some affirmative act to bring the work to the attention of the public at large.<sup>100</sup>

The court acknowledged its holding was inconsistent with the policy goal of “enrichment of the art” through disclosure of new technologies.<sup>101</sup> It found no authority, however, requiring that prior “public knowledge” must be shown in order to invalidate a patent.<sup>102</sup>

The term “printed publication” has been construed in a similarly expansive manner. One case among many,<sup>103</sup> *In re Hall*,<sup>104</sup> concluded

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<sup>93</sup> *Id.* at 339.

<sup>94</sup> *See id.* at 337.

<sup>95</sup> 218 F.2d 72 (5th Cir. 1955).

<sup>96</sup> *Id.* at 72; *see also* Craig Allen Nard, *Legal Fictions and the Role of Information in Patent Law*, 69 VAND. L. REV. 1517, 1527–28 (2016) (summarizing the court’s holding in *Rosaire*).

<sup>97</sup> *Rosaire*, 218 F.2d at 73.

<sup>98</sup> *Id.* at 74.

<sup>99</sup> *Id.* at 73.

<sup>100</sup> *Id.* at 74–75.

<sup>101</sup> *Id.* at 75.

<sup>102</sup> *Id.*

<sup>103</sup> *See In re Lister*, 583 F.3d 1307, 1311–13 (Fed Cir. 2009); *In re Klopfenstein*, 380 F.3d 1345, 1348–50 (Fed. Cir. 2004); *In re Cronyn*, 890 F.2d 1158, 1159–61 (Fed Cir. 1989).

<sup>104</sup> 781 F.2d 897 (Fed. Cir. 1986).

that a dissertation found in the library of Freiburg University constituted a “printed publication” within the meaning of section 102.<sup>105</sup> The Federal Circuit accepted testimony that the dissertation had been “indexed in a special dissertations catalogue” and shelved in late 1977.<sup>106</sup> The court concluded that the dissertation—which existed as a single copy in a university library in what was then West Germany—was sufficiently accessible “to those interested in the art exercising reasonable diligence” and was therefore patent-defeating.<sup>107</sup>

Thinly reasoned judicial opinions such as *Rosaire v. Baroid Sales* and *In re Hall* insufficiently account for the difficulties the patent applicant, USPTO, and other interested parties would possess in learning of obscure prior art references. Of course, the time and expense of traveling to Freiburg to inspect the university libraries there—or hiring another to do so—may, by itself, be considered reasonable burdens for patent applicants to bear. Similarly, requiring oil prospectors to inquire about abandoned field trials in eastern Texas might, conceivably, be deemed an appropriate exercise prior to seeking patent protection. The difficulty with these conclusions is that the duties of inquiry imposed upon patent applicants are not limited to Freiburg or Palestine but rather to every library, oil field, or other potential source of information on the entire planet.

These holdings nonetheless form part of a long line of cases allowing obscure uses and documents to serve as prior art.<sup>108</sup> Any reference that is not deliberately maintained in confidence, or as a trade secret, now qualifies as prior art. Stated differently, in the Patent Act, terms such as “public” or “publication” mean “not secret.”<sup>109</sup> As described next, however, even secret information may qualify as patent-defeating prior art in appropriate circumstances.

### C. *Secrets*

Over the past century, patent law has also come to recognize wholly secret information as prior art. Information that the USPTO deliberately withholds from the public for months or years qualifies as prior art as of the date the agency obtained the information.<sup>110</sup> In addition, trade secrets maintained by the patentee may also qualify as prior art.<sup>111</sup> With both rulings extending the scope of the prior art to which

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<sup>105</sup> *Id.* at 898–900.

<sup>106</sup> *Id.* at 898.

<sup>107</sup> *See id.* at 898, 900.

<sup>108</sup> *See supra* notes 8–11 and accompanying text.

<sup>109</sup> *See* Mark A. Lemley, *Does “Public Use” Mean the Same Thing It Did Last Year?*, 93 TEX. L. REV. 1119, 1121 (2015).

<sup>110</sup> *See infra* Section II.C.1.

<sup>111</sup> *See infra* Section II.C.2.



patentees are held to account, the logic of secret prior art deserves further exploration.

### 1. Withheld Information

Beyond references that are merely obscure, patent law also recognizes prior art that is wholly secret—at least for a period of time. Under current law, no matter how diligent, costly, and wide-ranging an investigation, no researcher could learn of a secret reference prior to conducting research or filing a patent application.<sup>112</sup> To the contrary, patent law rewards inventors for retaining knowledge of critical public importance as a trade secret at a time when its disclosure would be most valuable.

This troubling state of affairs forms the legacy of the decision of Justice Oliver Wendell Holmes Jr. in *Alexander Milburn Co. v. Davis-Bournonville Co.*<sup>113</sup> Understanding the so-called “*Milburn rule*” requires a working knowledge of the rules governing public disclosure of filed applications and issued patents under U.S. law. The USPTO maintains patent applications in confidence until certain events occur.<sup>114</sup> The agency publishes these applications, intuitively enough, on the day they are granted as issued patents.<sup>115</sup> In addition, the agency publishes pending applications promptly after eighteen months from the filing date.<sup>116</sup> The eighteen-month publication rule is subject to some exceptions. If the application is no longer pending—which means that the application has been withdrawn, or it already issued as a granted patent—then it will not be published.<sup>117</sup>

Applicants may also opt out of pre-grant publication if they certify that they will not pursue patent protection on their inventions in other countries.<sup>118</sup> Congress adopted this unusual rule out of the recognition that foreign patent offices ordinarily publish all pending patent

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<sup>112</sup> See C. Douglass Thomas, *Secret Prior Art—Get Your Priorities Straight!*, 9 HARV. J.L. & TECH. 147, 149 (1996).

<sup>113</sup> 270 U.S. 390 (1926).

<sup>114</sup> 35 U.S.C. § 122(a); see Jay Z. Zhang, *Patent Application Publication Under § 122(b): A New Adventure with Unforeseen Consequences*, 85 J. PAT. & TRADEMARK OFF. SOC'Y 715, 715–16 (2003).

<sup>115</sup> See 35 U.S.C. § 153 (“Patents . . . shall be recorded in the Patent and Trademark Office.”). As a practical matter, the USPTO issues patents on Tuesdays. See USPTO Officially Transitions to Issuing Electronic Patent Grants in 2023, 88 Fed. Reg. 12560, 12561 (Apr. 18, 2023) (to be codified at 37 C.F.R. pt. 1).

<sup>116</sup> 35 U.S.C. § 122(b)(1)(A). The agency publishes applications on a Thursday of each week. See USPTO, MANUAL OF PATENT EXAMINING PROCEDURE § 1120 (9th ed. 2023).

<sup>117</sup> 35 U.S.C. § 122(b)(2)(A)(i).

<sup>118</sup> *Id.* § 122(b)(2)(B). See generally Richard Gruner, *The Secrecy Gambit: Why Do Patent Applicants Forgo Foreign Rights to Retain Temporary Secrecy?*, 18 OHIO ST. TECH. L.J. 19 (2021) (discussing why many sophisticated patent applicants choose to forgo foreign patent rights in exchange for secrecy from the USPTO).

applications eighteen months after they have been submitted.<sup>119</sup> As a result, if an invention is the subject of a foreign patent application, then it will be made publicly available eighteen months after the filing date regardless of USPTO activities.<sup>120</sup> However, inventors who waive the right to obtain foreign patent protection outside of the United States, and so inform the USPTO, may circumvent the pre-grant publication of their applications. In these cases, a patented invention may not be made available to the public until many years after an application was filed.<sup>121</sup>

Finally, Congress afforded applicants the ability to request that the USPTO publish their pending applications at any time.<sup>122</sup> The agency currently charges no fee for this service.<sup>123</sup> Ordinarily, the agency requires fourteen weeks following a request to publish an application.<sup>124</sup>

In view of these USPTO public disclosure rules, the most appropriate date that a patent application should qualify as prior art would be the date it became knowable to the public—namely, the date it was either published or issued as a patent. Justice Holmes nonetheless took the opposite path in *Alexander Milburn Co. v. Davis-Bournonville Co.*, a decision that solidified the place of secrets as prior art.<sup>125</sup> In that case, one Clifford filed a patent application pertaining to a welding and cutting apparatus about a month before another inventor, Whitford, did so.<sup>126</sup> The Patent Office, as the USPTO was then known, issued Clifford a patent about four months before Whitford obtained his own patent.<sup>127</sup> Although Clifford and Whitford claimed distinct devices,

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<sup>119</sup> See generally John F. Duffy, Hayden Gregory, Robert Rines, Herbert Wamsley & Douglas Wyatt, *Early Patent Publication: A Boon or Bane? A Discussion on the Legal and Economic Effects of Publishing Patent Applications After Eighteen Months of Filing*, 16 CARDOZO ARTS & ENT. L.J. 601 (1998) (describing congressional enactment of the exception to eighteen-month publication that allows applicants to maintain their inventions in secrecy until the date the USPTO grants the patent). The eighteen-month pre-grant publication period may be traced to Dutch legislation in 1964; in a bid to decrease legal uncertainties associated with increasingly lengthy patent application pendency, the Netherlands adopted pre-grant publication in view of growing backlogs at its Patent Office. See TEGERNSEE EXPERTS GRP., STUDY MANDATED BY THE TEGERNSEE HEADS: 18-MONTH PUBLICATION 6 (2012), [https://www.uspto.gov/sites/default/files/ip/global/18\\_months\\_publication.pdf](https://www.uspto.gov/sites/default/files/ip/global/18_months_publication.pdf) [<https://perma.cc/A9UR-S6AS>].

<sup>120</sup> See Reiko Watase, Note, *The American Inventors Protection Act of 1999: An Analysis of the New Eighteen-Month Publication Provision*, 20 CARDOZO ARTS & ENT. L.J. 649, 650 (2002).

<sup>121</sup> See *id.* at 650–51 (arguing that the ability to circumvent the publishing requirement by agreeing not to file an application with a foreign publishing country voids Congress's attempt to enact an early publication system).

<sup>122</sup> 35 U.S.C. § 122(b)(1)(A).

<sup>123</sup> 37 C.F.R. § 1.18(d)(1) (2023).

<sup>124</sup> USPTO, *supra* note 116, § 1129.

<sup>125</sup> Seymore, *supra* note 20, at 1970.

<sup>126</sup> *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U.S. 390, 399 (1926).

<sup>127</sup> *Id.*

some teachings in the description of the Clifford patent anticipated Whitford's invention.<sup>128</sup>

During enforcement litigation, an accused infringer asserted that the Clifford patent invalidated that of Whitford.<sup>129</sup> However, the disclosure of the Clifford patent was known only to Clifford and the Patent Office and kept confidential until the agency approved the patent.<sup>130</sup> Whitford, therefore, argued that his patent should be sustained because Clifford's patent should not qualify as prior art until the date it was issued.<sup>131</sup>

Writing for the Court in his usual terse and aphoristic style, Justice Holmes instead concluded that the Clifford patent qualified as prior art as of its filing date. In oft-quoted language,<sup>132</sup> he explained:

The delays of the patent office ought not to cut down the effect of what has been done. The description shows that Whitford was not the first inventor. Clifford had done all that he could do to make his description public. He had taken steps that would make it public as soon a[s] the Patent Office did its work, although, of course, amendments might be required of him before the end could be reached.<sup>133</sup>

Qualifying Clifford as prior art, even though the government maintained it in secrecy for over a year, meant the downfall of the Whitford patent.<sup>134</sup>

In *Milburn*, Justice Holmes set off on the wrong foot and ended up with the incorrect result. His position that Clifford had done all he could to publicize his invention prior to patent grant is farcical. Of course, Clifford could have published an article describing it, presented his findings at a conference, or told his friends about it. He might have also sold items to the public embodying his invention or done any number of other things to inform the public about his invention before the Patent Office finished its work.

Clifford should be better understood as someone who waited to see whether the Patent Office would allow a patent to issue and assess what the scope of issued patent rights might be, prior to relinquishing trade secrecy.<sup>135</sup> Although Clifford endeavored to maximize the intellectual

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<sup>128</sup> *Id.*

<sup>129</sup> *Id.*

<sup>130</sup> *Id.* at 401.

<sup>131</sup> *Id.*

<sup>132</sup> See *Hazeltine Research, Inc. v. Brenner*, 382 U.S. 252, 255 (1966); *In re Wertheim* 646 F.2d 527, 532 (C.C.P.A. 1981).

<sup>133</sup> *Milburn*, 270 U.S. at 401.

<sup>134</sup> *Id.* at 402. The *Milburn* rule is sometimes termed one of "springing," see Yelderman, *supra* note 20, at 866–68, or involving a "pipeline disclosure," see Seymore, *supra* note 20, at 1979–80.

<sup>135</sup> See Paul W. Leuzzi, *A Re-evaluation of the Use of 35 U.S.C. § 102(e), Secret Prior Art, in Obviousness Determinations*, 29 IDEA: J.L. & TECH. 167, 171 (1988) ("[T]he inventor often waits

property that he could obtain, his strategy does not support expansion of the prior art to include secrets. Justice Holmes recognized this issue when, in the *Milburn* opinion, he attempted to reconcile his ruling with Patent Office practice that did not qualify abandoned patent applications as prior art.<sup>136</sup> Of course, if the filing of a patent application creates prior art as of that date, then abandoned applications should qualify as prior art on the date they are filed as well. Later relinquishment should not matter. Justice Holmes nonetheless sidestepped the issue by stating that the “disregard of abandoned patent applications” was “convenient if not necessary to the Patent Office” without further explanation.<sup>137</sup>

Weakly reasoned on the day it issued, the *Milburn* opinion has also aged poorly. The Supreme Court issued *Milburn* more than seventy years before Congress would enact laws calling for the publication of patent applications prior to grant.<sup>138</sup> These laws include the opportunity for applicants to request, at no charge, publication of pending patent applications—a process that currently takes fourteen weeks.<sup>139</sup> The notion that Clifford and his fellow patent applicants have done everything they could to disclose an invention to the public as of their filing date is increasingly hard to swallow.<sup>140</sup>

In the *Milburn* case, the party who bore the brunt of bureaucratic delays was neither Clifford nor the Patent Office. Rather, the burden of the *Milburn* rule fell upon Whitford, who, at a minimum, had undertaken the expenses of preparing and filing a patent application without any possible way of knowing about the Clifford reference. Because the pendency of patent applications varies considerably and is unpredictable, a rule holding the public responsible for the delays of applicants and the USPTO has little to commend it.<sup>141</sup>

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until he has a proprietary position before he publishes his invention—wishing to stay ahead of his competition as long as possible.”).

<sup>136</sup> See *Milburn*, 270 U.S. at 400.

<sup>137</sup> *Id.* at 402.

<sup>138</sup> See Consolidated Appropriations Act of 2000, Pub. L. No. 106-113, 113 Stat. 1501A-561 (1999) (codifying a publication requirement eighteen months after the earliest filing date). The American Inventors Protection Act consists of Title IV of the Intellectual Property and Communications Omnibus Reform Act of 1999, Pub. L. No. 106-113, 113 Stat. 1501A-522.

<sup>139</sup> See *supra* notes 122-24 and accompanying text.

<sup>140</sup> Justice Holmes also noted that, as between Clifford and Whitford, Whitford was not the first inventor. *Milburn*, 270 U.S. at 402 (“The fundamental rule we repeat is that the patentee must be the first inventor.”). Because dates of invention are irrelevant following the enactment of the AIA, see *infra* notes 206-07 and accompanying text, this rationale for the *Milburn* rule no longer bears weight.

<sup>141</sup> See Andrew Berks, *Secret Prior Art—Time for Another Look*, N.Y. INTELL. PROP. L. ASS’N: REP., Apr.–May 2017, at 1, 4 (explaining that the novelty requirement is absolute, so that even secret prior art can render an invention not novel, and therefore not patentable).

Congress nonetheless codified the *Milburn* rule within the Patent Act of 1952 and has retained it ever since.<sup>142</sup> This rule of prior art expands the scope of the prior art in terms of time—ordinarily eighteen months, and sometimes much longer.<sup>143</sup> However, the *Milburn* holding was not the only time that courts reached questionable conclusions regarding the status of secret information as prior art, a topic this Article takes up next.

## 2. Trade Secrets

Although Learned Hand conducted the trial that ultimately led to the Supreme Court's opinion in *Milburn*,<sup>144</sup> his full impact upon patent law's prior art definition had yet to be felt. Two decades later, sitting in the Court of Appeals for the Second Circuit, Judge Hand released one of patent law's most adventurous rulings. In *Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts Co.*,<sup>145</sup> Judge Hand held that if a patent applicant or proprietor competitively exploits an invention, even though the invention was kept secret, that exploitation qualifies as "public use."<sup>146</sup> *Metallizing* brazenly ignores the wording of the Patent Act, which does not distinguish between the patentee's activities and those of others, and further acts to expand the scope of prior art.<sup>147</sup>

The *Metallizing* litigation involved a patented process for refurbishing machine parts. The inventor, Meduna, practiced the process commercially starting in March 1940, although he did so in secret, and

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<sup>142</sup> H.R. REP. NO. 82-1923, at 17 (1952). Prior to the AIA, the *Milburn* rule sat in section 102(e). *Id.* It now resides in 35 U.S.C. § 102(a)(2).

<sup>143</sup> The Federal Circuit has limited the *Milburn* rule in one respect. With respect to provisional applications, the Court of Appeals has ruled that the subject matter in a provisional patent application qualifies as prior art only if (1) the applicant filed a nonprovisional application claiming priority from the provisional application, (2) the USPTO published the application or allowed it to issue as a patent, and (3) the published application or issued patent claims subject matter found within the provisional application. See *Ariosa Diagnostics, Inc. v. Illumina, Inc.*, No. IPR2014-01093, 2016 WL 354412, at \*6 (P.T.A.B. Jan. 7, 2016), *aff'd* 705 F. Appx. 1002 (Fed. Cir. 2017); *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1380 (Fed. Cir. 2015); see also Madison Makeever, Comment, *The Golden Claims: Necessary Support for Nonprovisional Application Prior Art References to Be Granted Provisional Application Filing Dates During Inter Pates Review Proceedings*, 18 J. MARSHALL REV. INTELL. PROP. L. 326, 329–32 (2019); Kyle Gottuso, Note, "Secret" Prior Art: Does Prior Art in a Provisional Patent Application Bar Future Patents?, 76 Mo. L. REV. 917, 917 (2011).

<sup>144</sup> *Davis-Bournonville Co. v. Alexander Milburn Co.*, 297 F. 846 (S.D.N.Y. 1924), *aff'd*, 1 F.2d 227 (2d Cir. 1924), *rev'd*, 270 U.S. 390 (1926).

<sup>145</sup> 153 F.2d 516 (2d Cir. 1946).

<sup>146</sup> *Id.* at 520. See Dmitry Karshedt, *Did Learned Hand Get It Wrong?: The Questionable Patent Forfeiture Rule of Metallizing Engineering*, 57 VILL. L. REV. 261, 262 (2012).

<sup>147</sup> See Karshedt, *supra* note 146, at 263–64.

his customers did not know the process that he used.<sup>148</sup> Meduna filed a patent application claiming the invention on August 6, 1942.<sup>149</sup> During subsequent patent enforcement litigation, the accused infringer argued that the patent was invalid because Meduna had made a “public use” of the claimed invention more than one year before his filing date.<sup>150</sup>

The Second Circuit agreed with the accused infringer and struck the patent down.<sup>151</sup> Judge Hand identified a distinction in secret use cases between (1) secret uses by someone other than the patentee, and (2) secret, commercial uses made by the patentee itself.<sup>152</sup> Judge Hand concluded that in the first set of circumstances, third-party secret uses do not constitute a public use because they do not explain to the public how to practice the invention.<sup>153</sup>

Judge Hand went on to explain that a different policy concern arose when the inventor who applied for a patent made a secret, commercial use of the invention. He observed that such uses allow inventors to delay filing a patent application beyond the statutory grace period—implying further delays in the moment when that invention ceases to be patented and enters the public domain.<sup>154</sup> Judge Hand concluded that if patentees delay filing beyond the one-year period of probation, they forfeit their right to a patent whether the public had learned of the invention or not.<sup>155</sup>

The core difficulty with the *Metallizing* rule is that the Patent Act speaks only to public uses of an invention, regardless of who made them.<sup>156</sup> Even a cursory reading of section 102 immediately reveals that Judge Hand’s holding strays quite far from the statutory text. And, in terms of innovation policy, public disclosure of Meduna’s secret invention through means of his patent was arguably better than none at all.<sup>157</sup>

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<sup>148</sup> The trial court opinion in the *Metallizing* litigation more fully explains the relevant facts. See *Metallizing Eng’g Co. v. Kenyon Bearing & Auto Parts Co.*, 62 F. Supp. 42, 46–47 (D. Conn. 1945), *rev’d*, *Metallizing*, 153 F.2d 516.

<sup>149</sup> *Metallizing*, 153 F.2d at 517.

<sup>150</sup> *Id.* See ROGER E. SCHECHTER & JOHN R. THOMAS, PRINCIPLES OF PATENT LAW § 4.3.2, at 91–93 (3d ed. 2019).

<sup>151</sup> *Metallizing*, 153 F.2d at 520.

<sup>152</sup> *Id.*

<sup>153</sup> See *id.* at 519–20; SCHECHTER & THOMAS, *supra* note 150, § 4.3.2, at 92.

<sup>154</sup> SCHECHTER & THOMAS, *supra* note 150, § 4.3.2, at 92.

<sup>155</sup> *Metallizing*, 153 F.2d at 520.

<sup>156</sup> The current version of section 102(a) stipulates that no patent shall issue 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.” 35 U.S.C. § 102(a).

<sup>157</sup> See *Karshtedt*, *supra* note 146, at 304.

The *Metallizing* rule has nonetheless received generally favorable reviews<sup>158</sup> to the point that the Supreme Court recently sustained it.<sup>159</sup> Commentators have generally approved of the policy of denying patents to inventors who engage in secret commercial uses or sales of an invention for lengthy periods prior to filing an application.<sup>160</sup> *Metallizing* instead encourages the prompt filing of patent applications, seasonable disclosures of an invention to the public, and the timely entry of the invention into the public domain.<sup>161</sup> Appropriately rooted in the statute or not, the decision nonetheless increases the scope of the prior art to which the law holds patentees to account.

#### D. *Prior Art for Obviousness*

The courts have dispensed other rulings regarding the scope of the prior art that were beyond the reasonable capacity of section 102 to bear. Prior to the enactment of the AIA, section 103 of the Patent Act required the patent community to assess “the differences between the subject matter sought to be patented and the prior art” when determining whether a claimed invention would have been obvious or not.<sup>162</sup> But, the statute did not define the term “prior art.” Judicial gap-filling concluded that, before AIA section 102, prior art was “generally available for nonobviousness as well.”<sup>163</sup> As discussed next, these rulings continued to increase the range of earlier information to which patentees are accountable.

##### 1. *Withheld Information*

The troubling *Milburn* rule is not confined to the United States. Leading patent-granting jurisdictions—including Japan,<sup>164</sup> Korea,<sup>165</sup> the

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<sup>158</sup> See Lemley, *supra* note 109, at 1122–23 (noting that the *Metallizing* rule has been repeatedly endorsed by the Federal Circuit).

<sup>159</sup> See *Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.*, 586 U.S. 123, 129 (2019) (explaining it would undermine the objectives of the patent system to “allow an inventor to ‘sell his invention publicly’ and later ‘take out a patent’ and ‘exclude the public from any farther use than what should be derived under it’”). See generally Raja Chatterjee, *The Patent On-Sale Bar Post-Helsinn and Its Effect on the Pharmaceutical Industry*, 18 CHI.-KENT J. INTELL. PROP. 207 (2019) (criticizing the Court’s decision in *Helsinn*).

<sup>160</sup> See, e.g., Daniel Taskalos, Note, *Metallizing Engineering’s Forfeiture Doctrine After the America Invents Act*, 16 STAN. TECH. L. REV. 657, 668–72 (2013) (discussing the policy rationale underlying *Metallizing*). But see generally Karshtedt, *supra* note 146 (critiquing the legal reasoning and policy rationale in *Metallizing*).

<sup>161</sup> See Lemley, *supra* note 109, at 1123.

<sup>162</sup> 35 U.S.C. § 103(a) (2006).

<sup>163</sup> See ROGER E. SCHECHTER & JOHN R. THOMAS, *INTELLECTUAL PROPERTY: THE LAW OF COPYRIGHTS, PATENTS AND TRADEMARKS* at § 172, at 371 (2003).

<sup>164</sup> Tokkyohō [Patent Act], Law No. 121 of 1959, art. 29-2.

<sup>165</sup> Teugheobeob [Patent Act] art. 29(3).

People's Republic of China,<sup>166</sup> and signatory nations to the European Patent Convention<sup>167</sup>—also withhold information from public view for a period of time and nonetheless consider that information to form part of the state of the art. However, each of these jurisdictions confines the *Milburn* rule to questions of novelty.<sup>168</sup> Of course, even if an invention is not strictly anticipated by a single reference, it may not be patented if it would have been obvious to a person of “ordinary skill in the art.”<sup>169</sup> In those jurisdictions, teachings available only via the *Milburn* rule do not apply to obviousness determinations.<sup>170</sup>

The United States took a different route. Because the *Milburn* litigation considered whether the teachings of the Clifford patent fully anticipated Whitford's claimed invention,<sup>171</sup> whether the *Milburn* rule extended to obviousness remained an open question for four decades. The Supreme Court squarely answered this question in the affirmative with its decision in *Hazeltine Research v. Brenner*.<sup>172</sup> That case involved a patent filed by Regis on December 23, 1957.<sup>173</sup> The Patent Office, as the agency was then known, rejected the Regis application on the ground of obviousness in view of two references.<sup>174</sup> One of the references was a patent issued to Wallace on February 4, 1958, based upon an application filed on March 24, 1954.<sup>175</sup>

Regis contested the Patent Office's rejection all the way to the Supreme Court, asserting that a skilled artisan would have no way of knowing of the Wallace application and that it should not constitute prior art for obviousness.<sup>176</sup> In a succinct opinion, Justice Black considered the *Milburn* ruling to be dispositive and affirmed the rejection. In his view, “[w]hen Wallace filed his application, he had done what he could to add his disclosures to the prior art. The rest was up to the Patent Office.”<sup>177</sup> This reasoning ignores the fact that Wallace was free to disclose his invention to the public through publication, sales, or other communications, long before his patent issued.

Secret prior art under the *Milburn* rule is troublesome enough with respect to anticipation. But extending *Milburn* to obviousness

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<sup>166</sup> Patent Law of the People's Republic of China (promulgated by Standing Comm. Nat'l People's Cong., Mar. 12, 1984, amended Oct. 16, 2020, effective June 1, 2021), art. 22.

<sup>167</sup> Convention on the Grant of European Patents, art. 54(3), Oct. 5, 1973, 1065 U.N.T.S. 199.

<sup>168</sup> Kate H. Murashige, *The Hilmer Doctrine, Self-Collision, Novelty and the Definition of Prior Art*, 26 J. MARSHALL L. REV. 549, 555 (1993).

<sup>169</sup> 35 U.S.C. § 103.

<sup>170</sup> See, e.g., Murashige, *supra* note 168.

<sup>171</sup> See *supra* notes 125–34 and accompanying text.

<sup>172</sup> 382 U.S. 252 (1965).

<sup>173</sup> *Id.* at 252–53.

<sup>174</sup> *Id.* at 253.

<sup>175</sup> *Id.*

<sup>176</sup> *Id.* at 254.

<sup>177</sup> *Id.* at 256.



determinations exacerbates its problems. The *Hazeltine* holding—which Congress confirmed when enacting the AIA—equates an earlier patent applicant, such as Clifford or Wallace, with the statutory “person having ordinary skill in the art.”<sup>178</sup> Undoubtedly Clifford and Wallace, when prosecuting their own applications, did not characterize themselves as run-of-the-mill artisans. Stated differently, under our current prior art definition, the USPTO may view the information contained within a given patent application as innovative as of its filing date and, therefore, approve that application for issuance. Once that patent issues, the agency understands that same information to have fallen within the state of the art as of its filing date. The USPTO should not have it both ways.

*Hazeltine* also effectively views the statutory “person of ordinary skill in the art” as possessing considerable clandestine skills. The ruling seemingly assumes that skilled artisans in all manner of disciplines are capable of rummaging through confidential USPTO databases to review the content of pending patent applications on the very day they are filed.<sup>179</sup> Because the USPTO maintains these applications in confidence,<sup>180</sup> and unauthorized access to them constitutes a criminal act,<sup>181</sup> the *Hazeltine* holding seems wrongheaded. *Hazeltine* was not the only time that courts took considerable liberties with the statute to expand the scope of the prior art for nonobviousness, however, a topic this Article turns to next.

## 2. *Postinvention References*

Pre-AIA section 102 qualified anticipatory references as prior art based on the date on which claimed inventions were made<sup>182</sup> as well as the filing date of the patent application that claimed them.<sup>183</sup> Debate subsequently arose as to whether prior art based upon the filing date, without regard to the date of invention, should be considered for non-obvious determinations. Pre-AIA section 103(a) provided that a patent may not be granted if a claimed invention “would have been obvious at the time the invention was made” to a skilled artisan.<sup>184</sup> This provision invoked section 102(a), which defined prior art based upon the invention date.<sup>185</sup> Prior art based upon the filing date, under section 102(b)

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<sup>178</sup> 35 U.S.C. § 103.

<sup>179</sup> *Cf. Clair V. Johnson, The Alexander Milburn Co. v. Davis-Bournonville Co.*, 8 J. PAT. OFF. SOC'Y 413, 424 (1926) (arguing that an ordinary skilled worker in the art cannot be expected to know information hidden away by the Patent Office).

<sup>180</sup> 35 U.S.C. § 122(a).

<sup>181</sup> 18 U.S.C. § 1030(a)(2).

<sup>182</sup> 35 U.S.C. § 102(a) (2006).

<sup>183</sup> *Id.* § 102(b) (2006).

<sup>184</sup> *Id.* § 103(a) (2006).

<sup>185</sup> *Id.*

in particular, should seemingly not apply on the face of the pre-AIA nonobviousness statute.<sup>186</sup>

An example illustrates the plain reading of pre-AIA section 103(a). Suppose that a team of scientists filed a patent application on March 1, 2010, based upon an invention that they completed on August 1, 2008. Under the plain reading of the statute, a journal article disclosing that invention would only qualify as prior art for nonobviousness if it was published after their invention date. As a result, if a journal article was published on February 1, 2009—more than one year before the filing date but after their invention date—it would seemingly not qualify as prior art for nonobviousness.

Taking considerable liberties with the statute, the courts disagreed with this result and held that section 102(b) art applied with full force to section 103(a). In *In re Foster*,<sup>187</sup> the Court of Customs and Patent Appeals<sup>188</sup> concluded that references with effective dates one year or more before the applicant's filing date qualified as prior art, "regardless of the applicant's date of invention."<sup>189</sup> A contrary holding, the court said, would permit

[A]n inventor to sleep on his rights more than a year after the invention has become entirely obvious to the public, whereby the public has potential possession of it, and still obtain a patent which will take the invention from the public, a result Congress could not possibly have intended . . . .<sup>190</sup>

Setting aside drowsy inventors and unarticulated legislative intentions, the *Foster* case took its place alongside other judicial opinions that, with little regard to the statutory text, increased the range of prior art references to which patentees were accountable.<sup>191</sup> Congress would ultimately follow the lead of *Foster*, unifying the prior art definition for novelty and nonobviousness when it enacted the AIA in 2011.

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<sup>186</sup> For a discussion of the pre-AIA novelty statute, see *supra* notes 72–86 and accompanying text.

<sup>187</sup> 343 F.2d 980 (C.C.P.A. 1965).

<sup>188</sup> The Court of Customs and Patent Appeals was a predecessor court to the Federal Circuit. Jeffrey A. Lefstin, *The Constitution of Patent Law: The Court of Customs and Patent Appeals and the Shape of the Federal Circuit's Jurisprudence*, 43 LOY. L.A. L. REV. 843, 847 (2010).

<sup>189</sup> *Foster*, 343 F.2d at 989.

<sup>190</sup> *Id.* at 990.

<sup>191</sup> The Federal Circuit also concluded that pre-AIA section 102(f) prior art applied to obviousness determinations. *OddzOn Prods, Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1401–04 (Fed. Cir. 1997). Congress reacted by enacting the rather obscure Cooperative Research and Technology Enhancement Act, which limited the availability of work done under joint research agreements as prior art for section 103. Pub. L. No. 108-453, 118 Stat. 3596 (2004) (to be codified at 35 U.S.C. § 1 note). See Motomura, *supra* note 32, at 587; Michael S. Fuller, *The CREATE Act Will Undo the Federal Circuit's Construction of 35 U.S.C. § 103 in OddzOn, and Help Promote Research Collaborations*, 5 CHI.-KENT J. INTEL. PROP. 106, 118–20 (2006).

On other fronts, too, that legislation dramatically increased the range of prior art to which patentees were held to account, as this Article considers next.

*E. The America Invents Act*

The AIA further expanded patent law's prior art definition among five notable dimensions.<sup>192</sup> First, the AIA removed all geographical restrictions upon prior art.<sup>193</sup> Prior to the AIA, activities that were never recorded in a writing, such as an oral sales offer or undocumented use of the invention, qualified as prior art only if they occurred in the United States.<sup>194</sup> Public uses and sales offers that occur abroad now qualify as patent-defeating even if they were never subject to a written record.<sup>195</sup>

Second, the AIA established a new, catch-all category of prior art.<sup>196</sup> In addition to inventions that were patented, published, used in public, or subject to a sales offer,<sup>197</sup> any invention "otherwise available to the public" one day before the filing date may be patent-defeating.<sup>198</sup> Although this provision has not yet seen much use, it appears to allow such events as unrecorded oral remarks to be patent-defeating.<sup>199</sup>

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<sup>192</sup> See Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part I of II*, 21 FED. CIR. BAR J. 435, 450 (2012).

<sup>193</sup> See *Merges*, *supra* note 20, at 1027.

<sup>194</sup> See Daniel H. Bliss, *Bridge over Troubled Water: Extending the Public Use Bar to Foreign Countries*, 1987 DET. COLL. L. REV. 65, 87 (asserting that the pre-AIA "limited public use bar has been squeezed to death by the shrinking globe").

<sup>195</sup> See Paul M. Janicke, *Overview of the New Patent Law of the United States*, 21 TEX. INTELL. PROP. L.J. 63, 82 (2013).

<sup>196</sup> See Caroline A. Schneider, Note, *The New Novelty: Defining the Content of "Otherwise Available to the Public,"* 41 J. LEGIS. 151, 157–71 (2015) (describing the ways the new language added by the AIA—"otherwise available to the public"—can be interpreted); Nathan G. Ingham, Note, *Anticipating New References: Predicting the Contours of the New "Otherwise Available to the Public" Category of Prior Art*, 53 B.C. L. REV. 1533, 1560–61 (2012) (arguing that the new language added section 102 can encompass new forms of references and unanticipated technologies not included in any of the other categories of prior art).

<sup>197</sup> 35 U.S.C. § 102(a)(1).

<sup>198</sup> See Dale Bjorkman, Gilbert Voortmans & Lindsay M. Block, "Made Available to the Public"—Understanding the Differences of the America Invents Act from the European Patent Convention in Its Definition of Prior Art, 4 CYBARIS AN INTELL. PROP. L. REV. 191, 193 (2013).

<sup>199</sup> Following enactment of the AIA, a debate arose over the continuing applicability of *Metallizing Engineering* in view of the new language allowing information "otherwise available to the public" to qualify as prior art. Some observers asserted that this phrase implied that other references identified in section 102 must also be publicly available in order to qualify as prior art. See generally Lemley, *supra* note 109 (identifying and disagreeing with this conclusion). The Supreme Court later confirmed that *Metallizing Engineering* remained good law. *Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.*, 586 U.S. 123, 131–32 (2019).

Third, the legislation eroded the effectiveness of the grace period that inventors previously enjoyed.<sup>200</sup> Prior to the AIA, section 102 afforded inventors a “one-year grace period during which they could disclose, use, sell,” or otherwise work the invention.<sup>201</sup> This grace period applied to the activities of others as well.<sup>202</sup> Previously, for another’s disclosure of an invention to present an absolute bar to the issuance of a patent, that disclosure had to occur more than one year before the filing date.<sup>203</sup>

In contrast, the AIA grace period is personal to the inventor. During the year prior to filing, an invention is not rendered unpatentable based upon an inventor’s own disclosure or by the same disclosure made by anyone after the inventor revealed his invention to the public.<sup>204</sup> Otherwise, any public communication of an invention, even one day prior to the filing of a patent application, prevents that invention from being patented.<sup>205</sup>

Fourth, under the AIA, the dates on which the applicant invented the subject matter of the patent application have no bearing on patentability. In particular, prior to the AIA, if a reference was published a year or less before the applicant’s filing date, an applicant could disqualify it as prior art by demonstrating an earlier date of invention.<sup>206</sup> Under the AIA, dates of inventive activity are no longer relevant. The appropriate comparison occurs between the filing date and the date of the reference or, if applicable, the date of an inventor’s earlier disclosure within the grace period.<sup>207</sup>

Applicants necessarily develop inventions prior to filing a patent application claiming them. But they do not always disclose them to

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<sup>200</sup> See Jordan S. Joachim, Note, *Is the AIA the End of Grace? Examining the Effect of the America Invents Act on the Patent Grace Period*, 90 N.Y.U. L. REV. 1293, 1294–95 (2015) (explaining how the AIA limited the grace period to disclosures by the inventor).

<sup>201</sup> *Id.* at 1298.

<sup>202</sup> *Id.*

<sup>203</sup> The date one year before the inventor’s filing date of his patent application is often termed the “critical date.” See SCHECHTER & THOMAS, *supra* note 150, § 4.3, at 86.

<sup>204</sup> See Joachim, *supra* note 200, at 1303–04 (the grace period extends only to disclosers by the inventor, a joint inventor, and a third party who obtained the subject matter from the inventor).

<sup>205</sup> 35 U.S.C. § 102(a).

<sup>206</sup> *Id.* § 102(a) (2006).

<sup>207</sup> *Id.* § 102(a). Notably, under the AIA, two patent applications claiming the same or similar inventions, filed by different parties on the same day, do not qualify as prior art against the other. See *id.* § 102(a)(2). Although this possibility seems rare, Alexander Graham Bell and Elisha Gray famously filed competing applications on February 14, 1876. *Dolbear v. American Bell Tel. Co.*, 126 U.S. 1, 567 (1888). Their priority dispute ultimately led to the Supreme Court’s 1888 decision known as *The Telephone Cases*, *Dolbear v. American Bell Tel. Co.* that held Bell was the first inventor and driving Bell’s monopoly power for the next century. *Id.* at 572–73. Because the AIA eliminated the use of the date of invention in prior art determinations, see *supra* note 204 and accompanying text, both Bell and Gray would presumably enjoy patent protection if the case were decided today.

the public before doing so, resulting in a broader prior art definition under the AIA than its predecessor statute. An example illustrates this distinction. Suppose that Claude filed a patent application claiming a neon sign on March 1, 2010, prior to the effective date of the AIA.<sup>208</sup> During prosecution, the USPTO examiner rejected Claude's application for obviousness based upon a journal article published by Anthony on February 1, 2010. The Anthony article discloses a sign using argon, another noble gas with similar properties to neon.<sup>209</sup> Prior to the AIA, Claude would have the opportunity to demonstrate that she had invented the neon sign prior to February 1st—a likely proposition given the amount of time needed to prepare and file a patent application.<sup>210</sup> Doing so would remove the Anthony reference from consideration in the USPTO's decision to grant Claude a patent or not.

Let us advance this example by a decade, supposing that Claude had filed her application on March 1, 2020, and that Anthony published his article on February 1, 2020. Under the AIA, Claude may not ante-date the Anthony reference by showing an earlier date of invention.<sup>211</sup> And even if Claude could show that she publicly disclosed her neon sign prior to Anthony, and that she then filed her application within one year from the date of her disclosure, the grace period provided by the AIA would be of no avail.<sup>212</sup> Under this hypothetical, Claude disclosed neon, which differs from the argon sign that the Anthony reference teaches.<sup>213</sup> Claude cannot remove the Anthony reference as prior art under the AIA and might be prevented from patenting her neon sign because of it.<sup>214</sup>

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<sup>208</sup> The relevant date of effectiveness of the AIA was March 16, 2013. Pub. L. No. 112-29, § 103(e)(3), 125 Stat. 288 (2011).

<sup>209</sup> The references are to Georges Claude, the French engineer who invented the neon sign; and to Earle C. Anthony, who is credited with bringing neon signs to the United States. *See December 1910: Neon Lights Debut at Paris Motor Show*, AM. PHYSICAL SOC'Y, <https://www.aps.org/archives/publications/apsnews/201512/physicshistory.cfm> [<https://perma.cc/SS4F-CJQ5>].

<sup>210</sup> *See supra* notes 201–02 and accompanying text.

<sup>211</sup> *See supra* note 204 and accompanying text.

<sup>212</sup> *See supra* note 207 and accompanying text.

<sup>213</sup> *See* USPTO, *supra* note 116, § 2153.02 (“Likewise, if the inventor or a joint inventor had publicly disclosed a species, and a subsequent intervening grace period disclosure discloses an alternative species not also disclosed by the inventor or a joint inventor, the intervening grace period disclosure of the alternative species would be available as prior art under AIA 35 U.S.C. 102(a)(1) because the ‘subject matter disclosed’ requirement of AIA 35 U.S.C. 102(b)(1)(B) would not have been met.”).

<sup>214</sup> The possibility also exists that two independent actors could obtain patents on the same invention due to incongruities between the AIA and its predecessor. Suppose, for example, that Apple filed a patent application on March 1, 2013, claiming subject matter that she invented on January 1, 2013. Baker then filed a patent application at the USPTO on April 1, 2013, following his public disclosure of the invention on February 1, 2013. Suppose further that, even though Apple and Baker knew nothing of each other, their applications are identical. Under these facts, Apple is entitled to the patent under the applicable pre-AIA law, 35 U.S.C. § 102(a), 102(g), while

Finally, the AIA overturned the *Hilmer* rule.<sup>215</sup> Prior to enactment of the AIA, courts were skeptical of the ability of foreign patent filings to generate prior art under the Paris Convention for the Protection of Industrial Property,<sup>216</sup> an international agreement to which the United States is a signatory.<sup>217</sup> The Paris Convention facilitates multinational patent acquisition by affording an application filed in one signatory nation a one-year period of international priority.<sup>218</sup> This arrangement allows inventors to file a patent application in one nation—typically their home jurisdiction—and then pursue applications on a global basis over the next year.<sup>219</sup> Under the international agreement, events that occurred within the one-year international priority period that would otherwise be patent-defeating, such as the “publication or exploitation” of the invention, are ignored.<sup>220</sup>

Patent applications filed in the USPTO that claim international priority, therefore, enjoy two filing dates—an earlier one in a foreign patent office and a later domestic one. The question arose, under the *Milburn* rule, as to which filing date should be afforded effectiveness as prior art. In a series of decisions starting with the 1966 ruling in *In re Hilmer*,<sup>221</sup> the courts concluded that an issued patent or published application qualifies as prior art only as of the U.S. filing date and not the earlier foreign filing date.<sup>222</sup> This bifurcation between the dates of priority and prior art effectiveness reduced the scope of the prior art—indeed, the *Hilmer* rule potentially allowed two patents to issue claiming the same invention because neither served as prior art against the other.<sup>223</sup>

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Baker would obtain the patent under the AIA. 35 U.S.C. § 102(b)(1)(B). Baker would obtain the patent under the AIA because he was the first to disclose the invention publicly, and then filed a patent application claiming the invention within one year of disclosing it. Although the Federal Circuit dismissed this scenario as “highly unusual” and “remote,” the court did not dispute that the USPTO would be required to issue two patents on the same invention should it arise. See *SNIPR Techs. Ltd. v. Rockefeller Univ.*, 72 F.4th 1372, 1382 (Fed. Cir. 2023).

<sup>215</sup> See Heath W. Hoglund, Jay A. Erstling & Frederik W. Struve, *A Different State of Grace: The New Grace Period Under the AIA*, LANDSLIDE, July–Aug. 2013, at 48, 51.

<sup>216</sup> Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 21 U.S.T. 1583, 828 U.N.T.S. 306.

<sup>217</sup> See generally Sarah R. Wasserman Rajec, *Advances in Patent Rights Acquisition in International Patent Law*, 41 CARDOZO ARTS & ENT. L.J. 447 (2023) (describing the effects of the Paris Convention on international patent law).

<sup>218</sup> Paris Convention for the Protection of International Property, *supra* note 216, 21 U.S.T. at 1631–32, 828 U.N.T.S. at 314–15.

<sup>219</sup> See SCHECHTER & THOMAS, *supra* note 150, at § 14.1.3, at 501–03.

<sup>220</sup> Paris Convention for the Protection of International Property, *supra* note 216, 21 U.S.T. at 1632, 828 U.N.T.S. at 315.

<sup>221</sup> *In re Hilmer (Hilmer I)*, 359 F.2d 859 (C.C.P.A. 1966).

<sup>222</sup> See *Hilmer I*, 359 F.2d at 859; *In re Hilmer (Hilmer II)*, 424 F.2d 1108, 1110 (C.C.P.A. 1970); see also Murashige, *supra* note 168, at 557.

<sup>223</sup> See Richard A. Neifeld, *Viability of the Hilmer Doctrine*, 81 J. PAT. & TRADEMARK OFF. Soc’y 544, 562 (1999). An influential commentator thought differently, asserting that “the most

Congress took down the *Hilmer* rule when it enacted the AIA, with section 102(d) stipulating that patents enjoy prior art effectiveness as of their foreign priority date.<sup>224</sup> This measure once again enlarged the scope of the prior art, as an example illustrates. Suppose that Morgan filed a patent application at the USPTO on June 1, 2010, claiming a new rocket propellant. After conducting a prior art search, the examiner learns of a published patent application filed by Kranz disclosing a similar propellant.<sup>225</sup> Kranz filed a patent application at the European Patent Office (“EPO”) on May 1, 2010, and then at the USPTO on July 1, 2010. Because Kranz’s U.S. filing date was after that of Morgan—even though Kranz had filed previously in Europe—the examiner would disregard his application due to the *Hilmer* rule.

If we advance the timeline by a decade, a different result occurs under the AIA. Assume now that Kranz filed his application at the EPO on May 1, 2020, at the USPTO on July 1, 2020, and that Morgan filed at the USPTO on June 1, 2020. Under these facts, once the USPTO published the Kranz application, it would qualify as prior art as of the earlier, European filing date.<sup>226</sup> The examiner could, therefore, cite the Kranz application when reviewing Morgan’s application.

In sum, the AIA spoke extensively to the prior art, and when it did so, it broadened existing categories to expand the realm of information relevant to patenting determinations. Notably, the legislation incorporates no offsetting provisions that reduce the scope of the prior art. Despite these changes, courts continue to apply precedent interpreting such terms as “printed publication” and “public use” that were developed under a far more constrained statutory prior art definition. These developments have led to profoundly negative impacts upon U.S. innovation policy, a topic this Article explores next.

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informed understanding” of the pre-AIA prior art rules was that another provision, pre-AIA § 102(g), could be used to “prevent identical patents from issuing to rival inventors.” Robert A. Armitage, *Understanding the America Invents Act and Its Implications for Patenting*, 40 AIPLA Q.J. 1, 63–65 (2012). No authority was cited for this proposition, however, which appears to have ignored statutory language limiting the effect of pre-AIA § 102(g)(2) to activities that occurred within the United States. This rather refined debate has become moot.

<sup>224</sup> 35 U.S.C. § 102(d)(2).

<sup>225</sup> The references are, of course, to Mary Sherman Morgan and Gene Kranz, two true rocket scientists. See generally Anna Demming, *Mary Sherman Morgan: The Best Kept Secret in the Space Race*, CHEMISTRY WORLD (Mar. 8, 2021), <https://www.chemistryworld.com/culture/mary-sherman-morgan-the-best-kept-secret-in-the-space-race/4013329.article> [<https://perma.cc/5VCN-AGHL>]; GENE KRANZ, FAILURE IS NOT AN OPTION: MISSION CONTROL FROM MERCURY TO APOLLO 13 AND BEYOND (2000).

<sup>226</sup> The USPTO would publish the Kranz application at a time “promptly after the expiration of a period of 18 months” from the European filing date—namely, on or about November 1, 2021. 35 U.S.C. § 122(b)(1).

### III. THE IRRATIONALITY OF PATENT LAW'S PRIOR ART DEFINITION

Legislation and judicial rulings have, in combination, resulted in the broadest definition of prior art that the U.S. patent system has maintained in its long history. Under current law, a single disclosure that occurs one day before the filing date invalidates a patent, even if the patentee perfected his invention weeks before and was busy preparing a patent application.<sup>227</sup> A single, oral offer to sell an invention spoken anywhere in the world is patent-defeating.<sup>228</sup> Even documents maintained in secrecy by the government may invalidate a patent years after it issued.<sup>229</sup>

This far-reaching prior art definition upends the usual accounts of patent invalidity. When a tribunal strikes down an issued patent based on anticipation or obviousness, it most often does so based on prior art that the USPTO examiner did not consider.<sup>230</sup> An invalidity ruling results in a narrative that pillories both the agency and the patentee for not identifying the appropriate prior art in the first place.<sup>231</sup> Many observers assert that the number of issued patents that fail to meet the novelty and nonobviousness standards is unacceptably high,<sup>232</sup> while others recognize that maintaining high levels of patent quality is hard.<sup>233</sup> In truth, under our current prior art definition, the USPTO could not possibly identify all references relevant to an individual application absent extraordinary inquisitorial powers that vastly exceed its current capabilities.<sup>234</sup>

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<sup>227</sup> See George Wheeler, *Patent Portfolio Strategy for the America Invents Act*, 12 J. MARSHALL REV. INTELL. PROP. L. 289, 292–93 (2013).

<sup>228</sup> See USPTO, FIRST INVENTOR TO FILE (FITF) COMPREHENSIVE TRAINING: PRIOR ART UNDER THE AIA 15, [https://www.uspto.gov/sites/default/files/aia\\_implementation/fitf\\_comprehensive\\_training\\_prior\\_art\\_under\\_aia.pdf](https://www.uspto.gov/sites/default/files/aia_implementation/fitf_comprehensive_training_prior_art_under_aia.pdf) [<https://perma.cc/6PDJ-E4SR>] (listing “an oral presentation at a scientific meeting,” “a demonstration at a trade show,” “a statement made on a radio talk show,” or “a YouTube video” as prior art that could defeat a patent).

<sup>229</sup> 35 U.S.C. § 102(a)(2); *supra* Section II.C.1.

<sup>230</sup> John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 232–33 (1998).

<sup>231</sup> See, e.g., ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* 11–13 (2004) (blaming the USPTO for granting patent applications for unoriginal inventions, therefore causing a swell in patent litigation).

<sup>232</sup> See, e.g., Scott R. Boalick, *Patent Quality and the Dedication Rule*, 11 J. INTELL. PROP. L. 215, 240–42 (2004) (gathering and analyzing criticisms).

<sup>233</sup> See, e.g., *Promoting the Useful Arts: How Can Congress Prevent the Issuance of Low-Quality Patents?: Hearing Before the Subcomm. on Intell. Prop. of the S. Comm. on the Judiciary*, 116th Cong. (2019) (statement of Colleen Chien, Professor of Law, Santa Clara University School of Law), <https://www.judiciary.senate.gov/imo/media/doc/Chien%20Testimony.pdf> [<https://perma.cc/8GXE-UQMR>] (“Patent quality is hard.”).

<sup>234</sup> See Greg Reilly, *The Complicated Relationship of Patent Examination and Invalidation*, 69 AM. U. L. REV. 1095, 1117–18 (2020) (noting that USPTO examiners are not investigators and lack inquisitorial authority).



For their part, former proprietors of invalidated patents are deemed to have acted inefficiently and, worse yet, to have attempted to misappropriate the public domain by obtaining propriety rights in old inventions. After all, had they made reasonable efforts to review the existing literature, they would have discovered the prior art reference and benefited from its teachings.<sup>235</sup> This account simply does not hold where only the most exhaustive, financially unconstrained search could unearth a secluded activity that occurred in a distant land.<sup>236</sup> And, of course, no searcher could possibly locate prior art that the government has deliberately withheld from the public.<sup>237</sup>

In contrast, courts and commentators often laud patent challengers as private attorney generals that police the public domain.<sup>238</sup> Under this line of reasoning, the opponent of the patent located the reference, so the patent proprietor should have too. Less commonly acknowledged is that accused infringers frequently devote considerable resources towards an eleventh-hour, litigation-driven search to unearth prior art references that pertain to a patented invention.<sup>239</sup> The USPTO might have withheld some of these references at the time the patent issued, only to disclose them later in time.<sup>240</sup> Others might have once been obscure at the time the patent was sought but became more readily discernible as the years passed. Still, others could be located only thanks to the considerable expenditure of resources by the accused infringer in a manner that would be impractical for every patent the USPTO issues.

The successful discovery of an obscure or previously concealed prior art reference may invalidate a patent of considerable value to the public. Otherwise, the parties would not have indulged in one of the most time-consuming, complex, and costly forms of litigation on

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<sup>235</sup> See Sharma, *supra* note 15, at 223 (noting the “Libraries before Laboratories” view of prior art definition).

<sup>236</sup> See Devlin, *supra* note 13, at 354–57 (describing the expensive, labor-intensive search needed to locate all analogous prior art).

<sup>237</sup> See *supra* Section II.C.1.

<sup>238</sup> See, e.g., *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 137 (2007) (making it possible for a petitioner to challenge a patent as invalid or unenforceable without opening themselves up to liability); *Lear, Inc. v. Adkins*, 395 U.S. 653, 670 (1969) (“If [patent challengers] are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification.”); Rochelle Cooper Dreyfuss & Lawrence S. Pope, *Dethroning Lear? Incentives to Innovate After MedImmune*, 24 BERKELEY TECH. L.J. 971, 972–73 (2009).

<sup>239</sup> *In re Portola Packaging, Inc.*, 110 F.3d 786, 789 (Fed. Cir. 1997) (“Congress also was aware that newly discovered prior art often is identified only after a patent is issued because a potential infringer generally has greater resources and incentives to search for and find prior art than does the [USPTO].”).

<sup>240</sup> See *supra* notes 114–24 and accompanying text.

the planet.<sup>241</sup> Yet prior art that a skilled and diligent searcher could not locate after exercising reasonable efforts cannot be viewed as having contributed to public welfare.

Some observers have posited that new search technologies, including artificial intelligence, will ease the burden of search going forward.<sup>242</sup> These data sets do not yet house a considerable portion of the prior art, however, and they are unlikely to do so in the near future.<sup>243</sup> Further, we have yet to identify a single, reliable way to conduct a search for the best prior art. Current search methodologies often depend upon identifying a good place to start, a matter on which reasonable persons could disagree.<sup>244</sup>

The burden of search has grown considerably due to the steady pace of legislative reforms and judicial interpretation that have taken an expansive view of the scope of the prior art.<sup>245</sup> These legal changes have been accompanied by impressive growth in channels of communication, an explosive pace of innovation in a vast array of endeavors, and a more diverse community of innovators than ever before.<sup>246</sup> Invalidating patents based upon prior art that could not reasonably or even possibly be located upends the appropriate expectations of the patent proprietor. But, as a practical matter, only the costliest and most time-consuming prior art search could possibly be determinative of patentability.

Worse than obscure prior art is secret prior art. In its daily operations, USPTO is as much concerned with concealing technical information as disclosing it through the patent system. Absent a request from the applicant, the USPTO will disclose a patent application to the public at one of three times: (1) not at all, if the applicant opts out of pre-grant publication and the application is abandoned;<sup>247</sup> (2) at some indeterminate date in the future, if the applicant opts out of pre-grant

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<sup>241</sup> See Douglas J. Kline, *Patent Litigation: The Sport of Kings*, MIT TECH. REV. (Apr. 28, 2004), <https://www.technologyreview.com/2004/04/28/232981/patent-litigation-the-sport-of-kings/> [<https://perma.cc/2BDL-TVH2>]; Devlin, *supra* note 13, at 336 (concluding that patents are litigated when they are commercially valuable).

<sup>242</sup> For a discussion of current efforts to use artificial intelligence to generate prior art, see Lucas R. Yordy, Note, *The Library of Babel for Prior Art: Using Artificial Intelligence to Mass Produce Prior Art in Patent Law*, 74 VAND. L. REV. 521 (2021).

<sup>243</sup> David Hunt, *How Accurate Are My AI Patent Search Results? The Importance of Measuring Precision and Recall*, ENSEMBLEIP (Mar. 19, 2021), <https://ensembleip.com/how-accurate-are-my-ai-patent-search-results/> [<https://perma.cc/RPP4-2KKF>] (describing missing relevant prior art in artificial intelligence software systems).

<sup>244</sup> See *Palomar Techs., Inc. v. MRSI Sys., LLC*, No. 18-10236-FDS, 2020 WL 2115625, at \*15 (D. Mass. May 4, 2020).

<sup>245</sup> See *supra* Part II.

<sup>246</sup> See, e.g., Yochai Benkler, *Law, Innovation, and Collaboration in Networked Economy and Society*, 13 ANN. REV. L. & SOC. SCI. 231, 232 (2017) (describing the shift in innovation to a more collaborative and diverse environment).

<sup>247</sup> 35 U.S.C. § 122(b)(2)(B).

publication;<sup>248</sup> or (3) eighteen months after the application is filed.<sup>249</sup> The USPTO has, since 2016, received approximately 650,000 patent applications per year.<sup>250</sup> In view of this filing rate, the net effect of the USPTO's disclosure rules is that the agency withholds information from the public for a period of time on the order of one million years, viewed on an annualized basis.<sup>251</sup>

Even the most proficient searcher would, of course, be entirely unable to identify unpublished patent applications at the USPTO absent skulduggery at the agency. The *Milburn* rule has nonetheless found supporters,<sup>252</sup> and at least one commentator who would expand upon it.<sup>253</sup> One justification for the *Milburn* rule explains that the patent system should not award patents to applicants who “reasonably, though erroneously, believe[d]” that they had advanced the state of the art.<sup>254</sup> This view emphasizes that the patent system does not primarily concern itself with fairness to individual inventors but rather the promotion of technological progress.<sup>255</sup>

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<sup>248</sup> *Id.* §§ 122(a), 153.

<sup>249</sup> *Id.* § 122(b)(1)(A).

<sup>250</sup> See *USPTO Annual Reports*, USPTO (Mar. 6, 2024, 10:30 AM), <https://www.uspto.gov/about-us/performance-and-planning/uspto-annual-reports> [<https://perma.cc/58W8-C9RE>].

<sup>251</sup> In view of an annual filing rate of 650,000 applications, and assuming an 18-month delay between the receipt of these applications and their publication, the total annual delay consists of 975,000 years. In addition, the USPTO receives on the order of 170,000 so-called “provisional” applications each year. See Dennis Crouch, *A Million Inventions Lost: Abandoned Provisional Applications*, PATENTLY-O (Sept. 13, 2021), <https://patentlyo.com/patent/2021/09/inventions-provisional-applications.html> [<https://perma.cc/2JSP-U42B>]. If the applicant does not file a non-provisional application within one year of filing the provisional application, then the provisional application is abandoned. 35 U.S.C. § 111(b)(5). Assuming each provisional application serves as the basis for a filed nonprovisional application, the additional collective delay amounts to 85,000 years. Of course, because about 75% of applicants opt not to have their nonprovisional applications published before grant, see Stuart J.H. Graham & Deepak Hegde, *Do Inventors Value Secrecy in Patenting? Evidence from the American Inventor's Protection Act of 1999*, SSRN 5 (Dec. 2, 2014), <https://ssrn.com/abstract=2170555> [<https://perma.cc/ZJ6C-BJWM>], and about 40% of provisional applications are abandoned, Crouch, *supra*, the actual annual delay is much longer—indeed, for some inventions the delay is infinite.

<sup>252</sup> PETER S. MENELL ET AL., *PATENT CASE MANAGEMENT JUDICIAL GUIDE* § 14.3.4.1.3, at 14-57 (3d ed. 2016) (“The fact that the knowledge was not publicly known is outweighed by the [USPTO’s] knowledge of the invention and its unique role in making patent determinations.”).

<sup>253</sup> Professor Seymore has argued that the *Milburn* rule should be extended to peer-reviewed manuscripts. Seymore, *supra* note 20, at 1971. In his view, peer-reviewed manuscripts should qualify as prior art as of the date they are submitted to a scholarly journal, rather than the date on which they are published. *Id.* A contrary view, advanced in this Article, elevates the policy goal of prompt disclosures of technical information to the public over academic norms of peer review and recognizes that the contents of a manuscript may be promptly disclosed to the public through other mechanisms than scholarly publication, well before an assessment of its academic value. See *infra* text accompanying note 257.

<sup>254</sup> Donald S. Chisum, *Sources of Prior Art in Patent Law*, 52 WASH. L. REV. 1, 12 (1976).

<sup>255</sup> *Id.*

Unfairness to individual inventors, however, is not the *Milburn* rule's only problem. It also promotes inefficiencies and stands at odds with the goal of prompt public disclosure of inventions. The primary goal of the patent system is to communicate useful technical information to the public,<sup>256</sup> but patenting is far from the only mechanism for doing so. Patent applicants may freely disclose information to the public with the confidence that postfiling activities do not qualify as prior art. The *Milburn* rule encourages them not to do so, instead enlisting the government as an accomplice in withholding information from the public.<sup>257</sup> Not merely unfair, the *Milburn* rule calls for the concealment of technologies of great public significance at a time where their disclosure would prove the most valuable.

The rules surrounding estoppel and *Inter Partes* Review (“IPR”) proceedings further demonstrate the glaring disconnect between sound innovation policy and our current prior art definition. IPR proceedings allow individuals to petition the USPTO to assert that a granted patent is invalid in view of prior art patents or printed publications.<sup>258</sup> If the contested patent survives the IPR, the petitioner may not challenge it in later civil actions or other administrative proceedings based upon issues that were “raised or reasonably could have [been] raised” during the IPR.<sup>259</sup> Congress established IPR estoppel in order to protect patent proprietors from relitigating an issue that the USPTO had previously decided.<sup>260</sup>

The Federal Circuit has recently concluded that IPR estoppel applies to any invalidity ground that “a skilled searcher conducting a diligent search reasonably could have been expected to discover.”<sup>261</sup> This ruling comports with the legislative history of the AIA. During floor debate concerning the enactment of IPR proceedings, Senator Jon Kyl noted:

Current law, however, is also amenable to the interpretation that litigants are estopped from raising any issue that it would have been physically possible to raise in the [IPR], even if only a scorched-earth search around the world would have uncovered the prior art in question. Adding the modifier “reasonably” ensures that could-have-raised estoppel extends only to that

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<sup>256</sup> *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989).

<sup>257</sup> See *supra* notes 135–37 and accompanying text (describing the advantages conferred by the *Milburn* rule to patent applicants that withhold their inventions from the public even after filing their applications).

<sup>258</sup> 35 U.S.C. § 311(b).

<sup>259</sup> *Id.* § 315(e)(2).

<sup>260</sup> Ann E. Motl, *Inter Partes Review: Ensuring Effective Patent Litigation Through Estoppel*, 99 MINN. L. REV. 1975, 1985 (2015).

<sup>261</sup> *Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1298 (Fed. Cir. 2023).

prior art which a skilled searcher conducting a diligent search reasonably could have been expected to discover.<sup>262</sup>

The result of this awkward situation is that a former, unsuccessful IPR petitioner, once sued for infringement, may identify an obscure or previously secret prior art reference in support of an affirmative invalidity defense during litigation. If no searcher could reasonably have identified that prior art reference, then IPR estoppel does not apply, and the reference may be used in connection with arguments of anticipation or obviousness. This framework begs the question of whether an obscure or secret prior art should qualify as prior art in the first instance. Of course, if the IPR petitioner could not have unearthed the reference earlier, then the patentee almost certainly could not have been aware of it either.<sup>263</sup> No sound innovation policy supports putting patent proprietors and challengers on entirely different footing with respect to the scope of the prior art.

To be sure, section 102 and its interpretative case law define a robust public domain.<sup>264</sup> Now more than ever, a larger stock of knowledge remains unprotectable by patent rights and may be used freely. This benefit should be balanced against a sense of what sort of public domain is being encouraged and expanded. Current law encourages individuals and enterprises to maintain their inventions in obscurity or secrecy while also penalizing those who fail to identify inaccessible or concealed prior art. Patent law poorly serves innovation policy if it discourages inventors from making their work reasonably accessible to a diligent searcher.

Our current prior art definition also provides another profound benefit: it upholds the reliance interests of the public. Individuals and enterprises may continue to employ inventions later patented by others should they have made even a single earlier use, sales offer, or disclosure anywhere in the world—no matter how remote, ephemeral, and insignificant that activity was. The patent system currently relies upon its prior art definition to extend this privilege, but it has other mechanisms at its disposal to do so and, in particular, so-called “prior user rights.”<sup>265</sup> Next, this Article calls for the reinvigoration of the essentially defunct U.S. prior user rights statute, alongside reforms to our prior art definition.

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<sup>262</sup> 157 CONG. REC. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Jon Kyl).

<sup>263</sup> This outcome might differ if the patentee itself was, in fact, aware of the obscure or secret reference. This outcome might lead to charges of inequitable conduct before the USPTO. *See Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1292 (Fed. Cir. 2011) (“When the patentee has engaged in affirmative acts of egregious misconduct, . . . the misconduct is material,” and therefore satisfies the materiality prong of inequitable conduct).

<sup>264</sup> *See supra* Part II.

<sup>265</sup> 35 U.S.C. § 273(a).

#### IV. REDEFINING THE PRIOR ART

Our current prior art definition has strayed far from the innovation policy goals of the patent system. It should be realigned in three different ways. First, courts should account for the cost of acquiring information when determining whether a reference qualifies as prior art or not. Second, the *Milburn* rule should be modified or eliminated. Finally, to protect the reliance interests of third parties, the moribund prior commercial use defense should be reinvigorated.

##### A. *Obscure Art and the Skilled Searcher*

Under current law, no matter how obscure a reference, it qualifies as prior art unless the patentee has made affirmative efforts to maintain it in secrecy.<sup>266</sup> This minimal standard of public accessibility should be abandoned. From an innovation policy perspective, no practical difference exists between an obscure reference and a secret one. Reasonable efforts would have discovered neither sort of reference before the patentee undertook the costly endeavors of R&D, patent acquisition, and patent enforcement. Our prior art definition would better serve innovation policy by accounting for the costs of locating individual references.<sup>267</sup>

This Article instead proposes that in place of a lenient standard of public accessibility, courts should require proponents of a prior art reference to demonstrate that a skilled practitioner would have been able to locate it within a reasonable time under ordinary circumstances of search. Courts should deem any of the references found in the vast collection of outward-facing databases maintained by the USPTO to be publicly accessible at the time the reference was incorporated into the database.<sup>268</sup> Otherwise, the reference should not qualify as prior art unless a skilled searcher's diligent efforts would have identified it.

Under this proposal, a reference would qualify as prior art if it could be found in the vast database of global patent literature maintained by the USPTO.<sup>269</sup> Additionally, an article located within the over

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<sup>266</sup> See *supra* Section II.B.

<sup>267</sup> Another sensible metric for assessing prior art definition involves a comparison of the cost of developing an invention against the cost of identifying a particular prior art reference. In addition to difficulties in assessing development costs, as well as an appropriate unwillingness to reward inefficient innovators, this approach stands in opposition to the wording of section 103 of the Patent Act, which declines to assess patentability based upon "the manner in which the invention was made." 35 U.S.C. § 103.

<sup>268</sup> See *Prior Art Electronic Resources Available to Patent Examiners*, USPTO, <https://www.uspto.gov/learning-and-resources/support-centers/scientific-and-technical-information-center-stic/prior-art> [<https://perma.cc/NWZ4-3H9Q>].

<sup>269</sup> This proposal differs from current judicial analysis with respect to IPR estoppel. Under current practice, we encounter the rather saddening spectacle of retired USPTO officials opining

100,000 electronic journals, or one of nearly 500,000 electronic books the agency maintains in its Patent and Trademark Resource Centers, would so qualify.<sup>270</sup> Otherwise, a court would consider whether a skilled searcher could locate the reference using reasonable efforts.

Current judicial inquiries regarding IPR estoppel provide a starting point for accounting for search costs within the prior art definition. Courts have relied upon expert testimony, often provided by former USPTO officials, to demonstrate whether a skilled searcher would have identified a reference lodged within an electronic database or on the Internet.<sup>271</sup> These cases often turn on the methodology the searcher would have used, the relevant search terms, and the length of time needed to unearth the reference. More generally, the following, additional factors appear relevant to the inquiry:

- (1) *The length of time the reference was available.* Patentees should more reasonably be expected to locate documents maintained by a library for years, or to locate public uses that occurred over a period of many months, as compared with a single, oral sales offer or use that occurred over a few moments.<sup>272</sup>
- (2) *Whether the location of the reference is associated with the field of the invention.* Patentees should more reasonably be expected to inquire about the state of the art in geographical regions that have acquired a reputation in a particular industry.<sup>273</sup>

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that no searcher of reasonable skill and diligence could have located a prior art U.S. patent. *See Palomar Techs, Inc. v. MRSI Sys., LLC*, No. 18-10236-FDS, 2020 WL 2115625, at \*8–9 (D. Mass. 2020) (describing former USPTO examiner’s belief that a reasonably skilled searcher could not have located U.S. Patent No. 5,035,047). This expert testimony says a great deal about the success, or lack thereof, of the patent system in fulfilling its public notice function. *See John R. Thomas, Noticing Patents*, 24 COLUM. SCI. & TECH. L. REV. 299, 305–07 (2023) (describing the public notice function of the patent system). Under this proposal, all patent literature that the USPTO provides in a public-facing database would qualify as prior art.

<sup>270</sup> *Electronic Non-Patent Literature Available at the USPTO*, USPTO (Oct. 1, 2024), <https://www.uspto.gov/learning-and-resources/support-centers/scientific-and-technical-information-center-stic/electronic> [<https://perma.cc/JR23-X7ZC>].

<sup>271</sup> *See, e.g., EIS, Inc. v. Intihealth Ger GmbH*, No. 19-1227, 2023 WL 6797905, at \*4 (D. Del. Aug. 30, 2023) (considering a Chinese utility model); *Clearlamp, LLC v. LKQ Corp.*, No. 12 C 2533, 2016 WL 4734389, at \*9 (N.D. Ill. Mar. 18, 2016) (considering the datasheet of a product denominated “UVHC3000”).

<sup>272</sup> *See, e.g., In re Klopfenstein*, 380 F.3d 1345, 1350–51 (Fed. Cir. 2004) (noting that the duration of the display of a printed slide presentation is relevant to determining whether it qualifies as a prior art “printed publication” or not).

<sup>273</sup> Along these lines, the federal government has recently designated 31 “tech hubs” associated with particular technologies, such as materials engineering, precision medicine, quantum computing. *See Biden-Harris Administration Designates 31 Tech Hubs Across America*, U.S. ECON. DEV. ADMIN. (Oct. 23, 2023), <https://www.eda.gov/news/press-release/2023/10/23/biden-harris-administration-designates-31-tech-hubs-across-america> [<https://perma.cc/W4K3-BF8X>].

- (3) *The status of the author of the reference within the field of the invention.* Patentees should more reasonably be expected to consider the work of acknowledged experts or well-known actors within a field.
- (4) *Whether some other good starting point would lead a skilled searcher to the reference.* Patentees should more reasonably be expected to follow a search strategy commencing from a known reference to identify to a more specific one.<sup>274</sup>
- (5) *The number of people who knew of the reference.* Patentees should more reasonably be expected to locate references known by many individuals.
- (6) *Whether a documentary reference describes the invention using specialized terms or common words that have many potential synonyms.* Patentees should be more reasonably able to locate a reference that uses field-specific nomenclature rather than everyday words with multiple possible synonyms.<sup>275</sup>
- (7) *The overlap between the specific words employed by the patentee within its claims as compared to the words used in a documentary reference.* Patentees should more reasonably be able to locate references that use language identical or similar to the claims found in a patent or application.<sup>276</sup>
- (8) *The clarity of the reference to a skilled artisan.* Patentees should more reasonably be expected to identify documents with succinct textual descriptions and drawings that a skilled artisan could readily grasp.<sup>277</sup>

In addition to an objective standard focusing upon the capabilities of a skilled searcher, this Article proposes a further, subjective component to the prior art definition. Even if a reference could not be located by a skilled searcher, it should qualify as prior art if the patentee knew about it. Viewed in terms of information search costs, patentees need not undertake any effort to identify prior art of which they are previously aware. This rule further comports with the current duty of disclosure

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<sup>274</sup> See, e.g., *Palomar Techs.*, 2020 WL 2115625, at \*11–12 (finding that it was unreasonable to expect a skilled searcher to find a reference when the searcher could not have reasonably been aware of a good starting point to find the reference).

<sup>275</sup> See *id.* at \*15 (“The difficulty of the search is also compounded by the relatively common nature of the words used in the ‘327 Patent to describe the invention, and the large number of potential synonyms of those words.”).

<sup>276</sup> See *id.* at \*16; *EIS, Inc.*, 2023 WL 6797905, at \*4–5.

<sup>277</sup> *Palomar Techs.*, 2020 WL 2115625, at \*14 (“[I]t is not enough simply to locate a reference; that reference must be read, and interpreted, and understood in the context of the patent.”).



that applicants owe to the USPTO.<sup>278</sup> Patentees need not undertake due diligence before filing a patent application, but they must disclose to the USPTO relevant prior art of which they are aware.<sup>279</sup>

This proposal departs significantly from established rules regarding the public accessibility of obscure prior art. But it echoes how courts currently analyze trade secrets. Under the *Metallizing* rule, secret commercial uses by patentees, but not third parties, qualify as prior art.<sup>280</sup> Although scholars typically justify the *Metallizing* rule in terms of thwarting strategic behavior,<sup>281</sup> this Article asserts that it is better understood as accounting for the information costs associated with locating relevant prior art. Patentees are surely aware of the commercial activities they undertook prior to filing a patent application, whether they concealed them or not, but would have no reasonable way of learning the secrets of others.

The proposed standard also fits more comfortably with the doctrine of analogous arts. When courts determine whether an invention would have been obvious, they consider a reference to qualify as prior art only if it arises “from the same field of endeavor” or is otherwise “reasonably pertinent” to the problem the patentee intends to address.<sup>282</sup> Under this approach, the Federal Circuit considered a toothbrush to be analogous to a hairbrush,<sup>283</sup> and a video game reference to be analogous art to a physical game.<sup>284</sup> On the other hand, the Patent Trial and Appeal Board concluded that a reference teaching a chemical that was hazardous to humans was nonanalogous art with respect to the claimed low-sodium salt substitute.<sup>285</sup> The analogous arts doctrine may be viewed as reflecting the higher search costs that skilled artisans would bear in unearthing references distant to their field or to the technical solution they are attempting to achieve.<sup>286</sup>

This approach would substitute some bright-line rules for defining prior art with standards that are more nuanced, which might increase litigation costs. These costs, however, should be balanced against reduced search costs imposed upon innovators, patent applicants, and

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<sup>278</sup> 37 C.F.R. § 1.56.

<sup>279</sup> *Id.*; see *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1287 (Fed. Cir. 2011) (inequitable conduct requires intent to deceive).

<sup>280</sup> See *supra* Section II.C.2.

<sup>281</sup> See Dmitry Karshedt, *The Riddle of Secret Public Use: A Response to Professor Lemley*, 93 TEX. L. REV. 159, 160 (2015); Lemley, *supra* note 109, at 1122; Karshedt, *supra* note 146, at 263.

<sup>282</sup> *In re Clay*, 966 F.2d 656, 658–59 (Fed. Cir. 1992).

<sup>283</sup> *In re Bigio*, 381 F.3d 1320, 1327 (Fed. Cir. 2004).

<sup>284</sup> *Innovation Toys, LLC v. MGA Ent., Inc.*, 637 F.3d 1314, 1321–22 (Fed. Cir. 2011).

<sup>285</sup> *Ex parte Brophy*, No. 2021-001800, 4–5 (P.T.A.B. Mar. 2, 2021).

<sup>286</sup> For an argument that the internet has disrupted the analogous arts doctrine, see generally Hal Milton, *How the Internet Has Removed the Historical Rationale for “Non-Analogous Arts,”* 13 J. MARSHALL REV. INTELL. PROP. L. 68 (2013).

examiners, as well as the lowered costs imposed on the public by patents that were improvidently granted because of obscure prior art. Further, courts must already decide whether a putative prior art reference has been maintained in secret or not,<sup>287</sup> whether it arose in an analogous art,<sup>288</sup> and whether it gives rise to IPR estoppel.<sup>289</sup> They are doing much of this work already.

Raising the standard for references to qualify as prior art would encourage individuals and enterprises to lift their work out of obscurity, even if they do not intend to seek patent protection for themselves. This proposal would also improve the reliability of USPTO work product and uphold the reasonable expectations of patentees. One thing this proposal would not do, however, is protect the reliance interests of those who have used inventions in obscurity. The patent system has other tools at its disposal to do so, most notably the provision of prior user rights. This Article will discuss prior user rights below, but it first considers potential reforms to the *Milburn* rule.

### B. *Taming the Milburn Rule*

As with the judicial decisions that have promoted obscure information to the status of prior art, the flawed reasoning articulated in the *Milburn* opinion has led to significant negative repercussions for our innovation environment. Under the *Milburn* rule, as extended by *Hazeltine*, patentees may only learn that their claimed inventions were anticipated, or rendered obvious, by USPTO publications issued many months or years after they sought patent protection.<sup>290</sup> In the meantime, they have engaged in costly patent acquisition efforts—and they may have continued to conduct R&D, develop manufacturing facilities, and offer products and services commercially—all in ignorance of information that is unknowable solely because the government has withheld it from the public.<sup>291</sup>

Policymakers possess several options for aligning the *Milburn* rule with innovation policy. A ready alternative is to follow the approach of other patent-granting nations and apply the *Milburn* rule only to

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<sup>287</sup> See *supra* Section II.C.2.

<sup>288</sup> See *supra* notes 282–86 and accompanying text.

<sup>289</sup> See *supra* notes 258–63 and accompanying text.

<sup>290</sup> See *supra* notes 125–41, 172–78 and accompanying text.

<sup>291</sup> Pending patent applications that lurk in the depths in the USPTO for years, only to emerge to torpedo established industries that believed the invention belonged with the public domain, have been rather colorfully termed “submarine patents.” See, e.g., Gregory F. Sutthiwan, *Prosecution Laches as a Defense to Infringement: Just in Case There Are Any More Submarines Under Water*, 1 J. MARSHALL REV. INTELL. PROP. L. 383, 384 (2002); Steve Blount, *The Use of Delaying Tactics to Obtain Submarine Patents and Amend Around a Patent That a Competitor Has Designed Around*, 81 J. PAT. & TRADEMARK OFF. SOC’Y 11, 12 (1999).

novelty determinations.<sup>292</sup> This approach would serve the interests of patent harmonization<sup>293</sup> and avoid the odd legal fictions that equate the capabilities of persons of ordinary skill with information contained in purposefully concealed patent applications.<sup>294</sup>

Alternatively, Congress could modify the *Milburn* rule to truncate the length of time that a reference may remain secret yet qualify as prior art. Currently, that period ordinarily lasts approximately eighteen months, although it may extend to several years for those applicants that opt out of pre-grant publication.<sup>295</sup> Requiring the USPTO to publish all applications immediately upon receipt presents an attractive alternative,<sup>296</sup> as this step would obviate the need for the *Milburn* rule altogether.<sup>297</sup>

More realistically, the USPTO could publish an application at the same time it issues a foreign filing license, a process the agency ordinarily completes within three business days after receiving an application.<sup>298</sup> This modest delay allows the Department of Defense or national intelligence authorities embedded in the USPTO to determine whether disclosure of an invention abroad would be “detrimental to the national security.”<sup>299</sup> Reducing the term of secret prior art to a nominal three-day period would do much to mitigate the harms of the *Milburn* rule.

Another option is to allow the *Milburn* rule to apply only when the applicant requests prompt publication of an application at the time of filing. The USPTO currently provides this service on a complimentary basis through a process that requires approximately fourteen weeks.<sup>300</sup> The fourteen-week delay, which has remained constant over the past two decades,<sup>301</sup> could undoubtedly be reduced using modern tools of information technology. This alternative would afford patent applicants the traditional abilities to publicize their inventions thorough the USPTO after a period of trade secrecy, albeit for a reduced period.

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<sup>292</sup> See *supra* notes 164–70 and accompanying text.

<sup>293</sup> See C. Douglass Thomas, *Secret Prior Art—Get Your Priorities Straight!*, 9 HARV. J.L. & TECH. 147, 171 (1996) (noting that adopting a novelty-only approach to the *Milburn* rule would promote harmonization); Leuzzi, *supra* note 135, at 173 (same).

<sup>294</sup> See *supra* notes 179–81 and accompanying text.

<sup>295</sup> See *supra* notes 114–21 and accompanying text.

<sup>296</sup> See Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U.L. REV. 63, 108 (2004) (calling for the elimination of exceptions to pre-grant publication of patent applications).

<sup>297</sup> But see Lidiya Mishchenko, *Thank You for Not Publishing (Unexamined Patent Applications)*, 47 BYU L. REV. 1563, 1604–05 (2022) (asserting that unexamined patent applications provide poorer quality information than applications that have undergone some examination).

<sup>298</sup> See USPTO, *supra* note 116, § 140, at 100-33.

<sup>299</sup> 35 U.S.C. § 181; see Gregory Saltz, Comment, *Patently Absurd: The Invention Secrecy Order System*, 8 TEX. A&M J. PROP. L. 211, 217–22 (2022).

<sup>300</sup> See *supra* notes 122–24 and accompanying text.

<sup>301</sup> See USPTO, *supra* note 116, § 1129.

Absent a request for immediate publication, an application would qualify as prior art only when it is published, either as a pending application or issued patent.

A final, related possibility is the outright abolition of the *Milburn* rule. Under this approach, the mere fact that an inventor filed a patent application would not bear upon the definition of prior art. Patents arise only through government intervention, of course, so filing an application is a requirement for an inventor to obtain a patent.<sup>302</sup> But filings are not public-facing events, and there is little to recommend incorporating filing dates into our prior art definition other than administrative convenience. Allowing applications to serve as prior art months or years after they are filed defies the fundamental purpose of the patent system: the dissemination of technical knowledge.<sup>303</sup>

The AIA prior art definition suggests an alternative approach. Under the AIA, inventors establish their priority to a patent as of the date they disclose the invention to the public, provided they file an application at the USPTO within a year.<sup>304</sup> For example, suppose that Croak discloses a new personal pollution monitor on June 1, 2024. Itakura, who independently invented the same monitor, discloses it to the public on August 1, 2024. Croak then files a patent application at the USPTO claiming the monitor on October 1, 2024.<sup>305</sup> Under current law, Croak obtains the patent because she was the first to disclose the invention to the public, and she filed a patent application within one year of that disclosure.<sup>306</sup>

Once an application has been filed, however, the applicant's date of public disclosure fades from relevance from the AIA prior art definition. Suppose, for example, that Croak files a patent application claiming a personal pollution monitor at the USPTO on June 1, 2024. Itakura, who independently invented the same monitor, discloses it to the public on August 1, 2024. Itakura then files a patent application at the USPTO claiming the monitor on October 1, 2024. Under current law, Croak still obtains the patent because she was the first to file, even though Itakura was the first to disclose the invention to the public. Croak's patent application will only be disclosed to the public on or about December 1, 2025—eighteen months from her filing date—or potentially far later if Croak opts out of pre-grant publication of her application.<sup>307</sup>

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<sup>302</sup> 35 U.S.C. § 111.

<sup>303</sup> See *supra* notes 50–52 and accompanying text.

<sup>304</sup> 35 U.S.C. § 102(b).

<sup>305</sup> If Croak did not file a patent application, or filed more than one year after her disclosure, then nobody would receive a patent. See *id.* § 102.

<sup>306</sup> The references are to Marian Rogers Croak and Fumitada Itakura, pioneers of Voice over Internet Protocol technology. See Corey McCraw, *The History of VoIP & Its Future*, FIT SMALL BUS. (Sept. 8, 2023), <https://fitsmallbusiness.com/history-of-voip/> [<https://perma.cc/2GZF-TXHW>].

<sup>307</sup> See 35 U.S.C. § 122(b)(2).

These two examples illustrate the incongruity between the AIA's treatment of public disclosures before and after the filing. However necessary the filing of an application to secure patent protection, no compelling reason should cause us to view public disclosure as relevant to the prior art definition only if it occurs prior to the filing date. Patent applicants that wish to generate prior art should instead feel free to disclose their inventions to the public on or after their filing dates. Individuals and enterprises that possess the wherewithal to prepare and file patent applications could undoubtedly find an online or other forum to disclose their inventions to the public promptly, rather than relying upon the USPTO to do so months or years in the future while they maintain trade secrecy. Otherwise, an application would qualify as prior art only when it is published, either as a pending application or issued patent.<sup>308</sup>

An example illustrates the implications of this option. Suppose that Croak files a patent application claiming a new personal pollution monitor at the USPTO on June 1, 2024. The USPTO then publishes her application on December 1, 2025. In the meantime, Itakura, who independently invented the same monitor, discloses it to the public on August 1, 2024, and files an application at the USPTO on December 1, 2024. Under current law, the *Milburn* rule would award the patent to Croak—even though Itakura was the first to disclose his invention to the public, and he filed his application within a year of doing so. Abolition of the *Milburn* rule would award the patent to Itakura and, in doing so, prove more faithful to the patent system's goal of knowledge sharing.<sup>309</sup>

Each of these alternatives would promote the prompt disclosure of information, arguably the fundamental goal of the patent system, in a manner that our current prior art definition does not. Patent applicants that do not disclose their inventions to the public in a timely fashion would risk having to share their patents with others or, alternatively, lose them altogether. Although these alternatives arguably impose greater administrative costs, their positive impact upon our innovation environment suggests that they may be worthwhile reforms.

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<sup>308</sup> The term of a patent could also be measured from the first date that the patentee disclosed the claimed invention to the public. Doing so would ameliorate one of the objections to the one-year grace period of U.S. patent law, the implied prolongation of the patent term. See SCHECHTER & THOMAS, *supra* note 150, § 14.9.2, at 530.

<sup>309</sup> This example assumes that the extent of public disclosure is commensurate with the disclosure of the patent application as filed. The USPTO has taken a narrow view of the AIA grace period with some uncertainty surrounding circumstances where the patentee's public disclosure is more limited than the scope of the claimed invention. See Joachim, *supra* note 200, at 1305–08.

### C. *Invigorating Prior User Rights*

Prior user rights allow enterprises to continue to use an invention when that use began before the patentee filed an application claiming the same invention.<sup>310</sup> U.S. patent legislation has called for prior user rights as early as the 1830s.<sup>311</sup> However, in its current incarnation under the AIA, the “prior commercial use” defense of section 273 has been invoked only rarely<sup>312</sup> and without success.<sup>313</sup> The burden of proof, numerous exceptions, and risks associated with asserting prior user rights in the United States have rendered them impotent.<sup>314</sup> A broader, simplified prior user rights statute would better align the innovation policy goals of encouraging information disclosure and preserving the public domain.<sup>315</sup>

Indeed, section 273 functions so poorly that the statute should be amended even if our current prior art principles remain intact. But reform is especially important if, as this Article advocates, the scope of the proper art is redefined to exclude obscure and secret references that

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<sup>310</sup> See USPTO, REPORT ON THE PRIOR USER RIGHTS DEFENSE 1 (2012), [https://www.uspto.gov/sites/default/files/aia\\_implementation/20120113-pur\\_report.pdf](https://www.uspto.gov/sites/default/files/aia_implementation/20120113-pur_report.pdf) [<https://perma.cc/9NK9-DY3Z>]. An earlier and more limited version of the current “prior commercial use” defense was titled the “first inventor” defense. See, e.g., David H. Hollander Jr., *The First Inventor Defense: A Limited Prior User Right Finds Its Way Into US Patent Law*, 30 AIPLA Q.J. 37, 40 (2002) (describing the scope and limitations of the defense).

<sup>311</sup> Section 7 of the 1839 Patent Act provided persons who had used the patented invention prior to the filing date of the patent with “the right to use, and vend to others to be used, the specific machine, manufacture, or composition of matter so made or purchased, without liability therefor to the inventor . . . .” Patent Act of 1839, ch. 88, § 7, 5 Stat. 353–55 (Mar. 3, 1839).

<sup>312</sup> The published judicial opinions involving prior commercial user rights are few. They include *Pelican International, Inc. v. Hobie Cat Co.*, No. 3:20-cv-02390-RSH-MSB, 2023 WL 2127994, at \*17–19 (S.D. Cal. Feb. 10, 2023); *Allfasteners USA, LLC v. Acme Operations Pty., Ltd.*, No. LA CV18-06929 JAK (RAOx), 2021 WL 4027738, at \*15 (C.D. Cal. May 25, 2021); and *Dunnhumby USA, LLC v. Emnos USA Corp.*, No. 13 C 0399, 2014 WL 12780170, at \*2–4 (N.D. Ill. June 27, 2014).

<sup>313</sup> The Author is unaware of any published judicial opinion conclusively awarding prior commercial user rights to an accused infringer. The district court came close to doing so in *Pavemetrics Systems, Inc. v. Tetra Tech, Inc.*, No. 2:21-cv-01289-MCS-MAA, 2021 WL 2548959 (C.D. Cal. Apr. 15, 2021). There, the court denied a motion for a preliminary injunction in part based upon the existence of a prior commercial user defense. *Id.* at \*8. Although the *Pavemetrics* opinion spoke decisively about the availability of prior commercial use rights, ultimately, the court addressed whether the patentee was likely to succeed on the merits of its infringement claim rather than reaching a final judgment. *Id.* at \*9.

<sup>314</sup> Cf. Robert P. Merges, *A Few Kind Words for Absolute Infringement Liability in Patent Law*, 31 BERKELEY TECH. L.J. 1, 40–41 (2016) (noting the limited nature of the prior commercial user defense).

<sup>315</sup> For further discussion of prior user rights, see generally Jacob Neu, *Patent Prior User Rights: What’s the Fuss?*, 66 VAND. L. REV. EN BANC 1 (2013); Paul R. Morico, *Are Prior User Rights Consistent with Federal Patent Policy?: The U.S. Considers Legislation to Adopt Prior User Rights*, 78 J. PAT. & TRADEMARK OFF. SOC’Y 572 (1996); Gary L. Griswold & F. Andrew Ubel, *Prior User Rights—A Necessary Part of a First-to-File System*, 26 J. MARSHALL L. REV. 567 (1993).

no skilled searcher could reasonably identify.<sup>316</sup> Individuals and enterprises that previously relied upon these principles should be allowed to continue their use of an invention under the rubric of prior user rights. In addition, prior user rights may achieve a more equitable balance between the interests of the earlier user, who may make uninterrupted commercial use of the invention, and the later patentee, who obtains the right to exclude against all others.<sup>317</sup>

An example illustrates how prior user rights work today—or perhaps more accurately, how they do not work. Suppose that Burbank uses a method of harvesting oats for a single harvest on a plot of land consisting of one acre in a remote region of Wyoming sometime in 2020. Esau, who invented the same method independently, files an application at the USPTO disclosing and claiming it on August 1, 2021. Burbank expands his operation over the years, leading to a charge of patent infringement by Esau.<sup>318</sup>

Under current law, if Burbank's acre was deemed publicly accessible, then Esau's patent is invalid. On the other hand, if the court determines that Burbank harvested his oats in secret, then he could assert a defense to infringement based upon prior commercial use. Successfully invoking section 273 is a tough row to hoe, however, for a variety of reasons.

First, under section 273, the infringer must demonstrate prior use of “subject matter . . . that would otherwise infringe”—a requirement that amounts to a concession of infringement.<sup>319</sup> In addition, entitlement to the prior commercial user defense must be demonstrated by clear and convincing evidence, whereas infringement need only be proved by a preponderance.<sup>320</sup> An adjudicated infringer who unsuccessfully asserts a section 273 defense is also subject to pay the prevailing party's attorney fees if it fails to demonstrate a reasonable basis for asserting the defense.<sup>321</sup>

The defendant must have also commercially used the infringing subject matter at least one year prior to the earlier of (1) “the effective filing date of claimed invention,” or (2) “the date on which

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<sup>316</sup> See *supra* Part III.

<sup>317</sup> See USPTO, REPORT ON PRIOR USER RIGHTS 9, [https://www.uspto.gov/sites/default/files/ip/global/prior\\_user\\_rights.pdf](https://www.uspto.gov/sites/default/files/ip/global/prior_user_rights.pdf) [<https://perma.cc/H7VE-RVU8>] (“Inventors may, for a variety of reasons, prefer not to seek patent protection for every innovation.”).

<sup>318</sup> The references are to the botanists Luther Burbank and Katherine Esau. See LUTHER BURBANK, *THE TRAINING OF THE HUMAN PLANT* (1907); KATHERINE ESAU, *ANATOMY OF SEED PLANTS* (2d ed. 1991).

<sup>319</sup> 35 U.S.C. § 273(a).

<sup>320</sup> Compare *id.* § 273(b) (requiring a showing of clear and convincing evidence for prior use defense), with *Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1296 (Fed. Cir. 2023) (requiring a preponderance of evidence for infringement cases).

<sup>321</sup> 35 U.S.C. § 273(f).

the claimed invention was disclosed to the public.”<sup>322</sup> As a result, the defense applies only to commercial uses that occurred well in advance of the relevant patent filing or public disclosure.<sup>323</sup> Under the facts provided above, Burbank would be unable to successfully assert a prior commercial user defense unless he had practiced the patented invention prior to August 1, 2020.

Under section 273, the prior commercial user defense is restricted to the location where the prior use occurred<sup>324</sup>—namely, Burbank’s farm in Wyoming or possibly the single acre on which he originally planted oats. The defense is personal to Burbank and may not be transferred, absent the sale of Burbank’s entire business.<sup>325</sup> Further, Burbank must have used the method commercially starting from at least August 1, 2020, until the time Esau accused him of infringement. Abandonment of commercial use negates the defense.<sup>326</sup>

Finally, the defense does not apply to patents on inventions that, at the time they were made, were owned by, or subject to an assignment to, an institution of higher education.<sup>327</sup> As a result, if Esau made her invention in her capacity as a university professor, then Burbank could not avail himself of the prior commercial user defense even if all the other requirements were met. This exception might have arisen out of the recognition that universities seem less likely to engage in the sort of commercial activity that would qualify as an infringement defense under section 273; in turn, their patents should not be subject to the defense. Given that universities are rarely sued for patent infringement, and that the defense applies to a university’s assignee as well, this exception seems difficult to justify.<sup>328</sup>

In view of these factors, our current prior commercial user defense is so narrowly drawn as to be inadvisable to assert and, even if asserted, all but unavailable. Section 273 should be reformed so that individuals and enterprises can enjoy effective prior user rights even if their activities did not rise to the level of prior art. In particular, individuals who used an invention that was later patented by another should enjoy a prior user right if the use (1) was made in good faith, (2) occurred within the United States, (3) does not qualify as prior art under section 102 due to obscurity or secrecy, and (4) occurred prior to the public disclosure of the invention by the patentee.

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<sup>322</sup> *Id.* § 273(a)(2).

<sup>323</sup> See SCHECHTER & THOMAS, *supra* note 150, § 8.5, at 306.

<sup>324</sup> 35 U.S.C. § 273(e)(1)(C).

<sup>325</sup> *Id.* § 273(e)(1)(B).

<sup>326</sup> *Id.* § 273(e)(4).

<sup>327</sup> *Id.* § 273(e)(5).

<sup>328</sup> See Shayne D. Rasay & Glenn E.J. Murphy, *Revisiting the AIA Prior User Rights Defense*, LAW: THE LEGAL INTELLIGENCER (Jan. 28, 2020, 1:50 PM), <https://www.law.com/thelegalintelligencer/2020/01/28/revisiting-the-aia-prior-user-rights-defense/> [https://perma.cc/ZC36-43EP].



Opponents of prior user rights will likely assert that they conflict with patent law's primary policy goal of disclosure.<sup>329</sup> The patent law is also concerned with preserving the public domain,<sup>330</sup> however, a goal that prior user rights advance. One way to balance these competing concerns is to allow courts to account for the circumstances of individual cases when determining the scope of the prior use rights, a concept the patent bar currently terms "intervening rights."<sup>331</sup> Intervening rights apply when the claims of a patent are altered during a post-issuance proceeding at the USPTO, including reissue,<sup>332</sup> reexamination,<sup>333</sup> post-grant review,<sup>334</sup> and IPR.<sup>335</sup> The Patent Act provides for two sorts of intervening rights. An infringer obtains "absolute" intervening rights, shielding it from liability for infringing new or modified claims, if the accused products were made or used before the USPTO issues a patent in altered form.<sup>336</sup>

In addition, a court may also grant "equitable" intervening rights to protect an infringer from liability based on infringement of new or modified claims, even before the USPTO issued the patent in modified form, if the party made "substantial preparation[s]" for the infringing conduct before reissue.<sup>337</sup> Courts enjoy considerable discretion in deciding the precise terms of equitable title.<sup>338</sup> They could deny them entirely or, alternatively, allow the prior user free use of the patented invention for the remainder of the patent's term. Or they could take an intermediate path, such as requiring payment for continued use of the invention

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<sup>329</sup> See Robert L. Rohrback, *Prior User Rights: Roses or Thorns?*, 2 U. BALT. INTELL. PROP. L.J. 1, 10 (1993).

<sup>330</sup> See *supra* notes 40–43.

<sup>331</sup> See SCHECHTER & THOMAS, *supra* note 150, § 74.3.5, at 259.

<sup>332</sup> 35 U.S.C. § 252.

<sup>333</sup> *Id.* § 307(b).

<sup>334</sup> *Id.* § 328(b).

<sup>335</sup> *Id.* § 318(c).

<sup>336</sup> See SCHECHTER & THOMAS, *supra* note 150, § 74.3.5, at 259; 35 U.S.C. § 252.

<sup>337</sup> 35 U.S.C. § 252; see Eric W. Gutttag, *Intervening Rights: A Potential Hidden Trap for Reexamined Patents*, 80 J. PAT. & TRADEMARK OFF. SOC'Y 501, 504–05 (1998); Jonathan A. Platt, *Protecting Reliance on the Patent System: The Economics and Equities of Intervening Rights*, 47 CASE W. RESV. L. REV. 1031, 1043–44 (1997).

<sup>338</sup> *John Bean Techs. Corp. v. Morris & Assocs., Inc.*, 988 F.3d 1334, 1338 (Fed. Cir. 2021). The Federal Circuit recently endorsed the following set of factors relevant to the award of equitable intervening rights with respect to a reissue application:

- (1) [W]hether substantial preparation was made by the infringer before the reissue;
- (2) whether the infringer continued manufacturing before reissue on advice of its patent counsel;
- (3) whether there were existing orders or contracts;
- (4) whether non-infringing goods can be manufactured from the inventory used to manufacture the infringing product and the cost of conversion;
- (5) whether there is a long period of sales and operations before the patent reissued from which no damages can be assessed; and
- (6) whether the infringer made profits sufficient to recoup its investment.

*Id.* at 1338.

or allowing the invention to be used without a royalty obligation for a brief period before it must cease.<sup>339</sup>

Affording courts the discretion to grant prior user rights under equitable principles would allow them to account for diverse circumstances of prior use. Courts might be more sympathetic toward prior users who lacked the means or wherewithal to obtain and enforce a portfolio of patents on a global basis, did not believe the invention was patentable, or did not deliberately conceal the invention from public view. They might be less sympathetic toward sophisticated, well-resourced prior users that made a deliberate choice to conceal innovative technology from the public or otherwise engaged in strategic or abusive behavior.

Opponents of prior user rights should also recognize that the patent laws of the most significant trading partners of the United States allow them.<sup>340</sup> As a result, U.S. enterprises that hold foreign patents may be unable to obtain infringement remedies against prior users in those jurisdictions. However, domestic infringers have no effective ability to assert prior user rights against foreign enterprises that hold U.S. patents.<sup>341</sup> For this reason alone, and with or without reform of patent law's prior art definition, the moribund prior commercial use statute is a worthy candidate for legislative reform.

## CONCLUSION

Recent debate concerning patent law's prior art definition has generally posited binary choices. One was whether the United States should retain its long-standing first-to-invent tradition or acquiesce to the global norm of a first-to-file priority system.<sup>342</sup> Another was whether

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<sup>339</sup> See Platt, *supra* note 337, at 1047–48. In addition to *John Bean*, other judicial opinions discussing equitable intervening rights include *Shockley v. Arcan, Inc.*, 248 F.3d 1349, 1359–61 (Fed. Cir. 2001); *University of Virginia Patent Foundation v. General Electric, Co.*, 792 F. Supp. 2d 904, 917–19 (W.D. Va. 2011); and *Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.*, No. CV 02-01087 (CWx), 2008 WL 6873811, at \*5–9 (C.D. Cal. 2008).

<sup>340</sup> See Kyla Harriel, *Prior User Rights in a First-to-Invent System: Why Not?*, 36 IDEA: J.L. & TECH. 543, 544 (1996) (“The adoption of prior user rights would put the United States on equal footing with the vast majority of industrialized nations which already recognize such rights . . .”).

<sup>341</sup> See Gary L. Griswold, Eric D. Levinson & F. Andrew Ubel, *Prior User Rights: Neither a Rose Nor a Thorn*, 2 U. BAL. INTELL. PROP. L.J. 233, 235 (1994); Keith M. Kupferschmid, *Prior User Rights: The Inventor's Lottery Ticket*, 21 AIPLA Q.J. 213, 248 (1993).

<sup>342</sup> See generally, e.g., Andrew L. Sharp, Comment, *Misguided Patent Reform: The Questionable Constitutionality of First-to-File*, 84 U. COLO. L. REV. 1227 (2013) (arguing that the first-to-file system is unconstitutional); John Burke, *Examining the Constitutionality of the Shift to “First Inventor to File” in the Leahy-Smith America Invents Act*, 39 J. LEGIS. 69 (2012–13) (defending the constitutionality of the first-to-file system); Adam J. Sedia, *Storming the Last Bastion: The Patent Reform Act of 2007 and Its Assault on the Superior First-to-Invent Rule*, 18 DEPAUL J. ART, TECH. & INTELL. PROP. 78 (2007) (analyzing the costs and benefits of abandoning the first-to-invent system in favor of the first-to-file system).

inventors should be allowed to obtain patents even though they disclosed their inventions prior to filing a patent application.<sup>343</sup> And another was whether the AIA altered the *Metallizing* rule qualifying secret uses and sales as prior art if they were made by the patentee.<sup>344</sup>

Although these discussions were well worthwhile in and of themselves, their framing sometimes masks the complexity of our prior art definition—the result of not only a technically difficult, evolving statute but also judicial rulings remarkably untethered to that legislation. Section 102 and the caselaw interpreting it have a lot of moving parts that aspire to numerous purposes. This Article has suggested that the ultimate aim of the patent bargain—knowledge sharing—should have a greater operational influence with respect to our prior art definition. Doing so would better encourage the USPTO, patentees, and third parties alike to disclose information to the public in a timely manner. It would better balance the rights of earlier users and later patentees. And it would present a better match between the state of the art, as practitioners understand it, and what patent law should deem the scope of the prior art.

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<sup>343</sup> See, e.g., Frederik W. Struve, Note, *Ending Unnecessary Novelty Destruction: Why Europe Should Adopt the Safety-Net Grace Period as an International Best Practice*, 39 WM. MITCHELL L. REV. 1404, 1408 (2013).

<sup>344</sup> See generally Lemley, *supra* note 109 (arguing that it did not).