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## INEQUITABLE OUTCOMES FROM THE INEQUITABLE CONDUCT DEFENSE: A PROPOSAL FOR REVISING AN EMPLOYEE- INVENTOR'S DUTY TO DISCLOSE

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## INEQUITABLE OUTCOMES FROM THE INEQUITABLE CONDUCT DEFENSE: A PROPOSAL FOR REVISING AN EMPLOYEE-INVENTOR'S DUTY TO DISCLOSE

*R. Kehl Sink\**

*U.S. patent law imposes a mandatory duty of disclosure on inventors named on U.S. patent applications. This duty requires that certain individuals, including named inventors, disclose to the U.S. Patent and Trademark Office any material information of which the individual becomes aware for as long as the patent application is pending. For an employee-inventor, this obligation may persist after she has assigned her patent rights to her employer and after she leaves her employment. Failure to comply with this duty can render any resulting patent invalid through the inequitable conduct defense. This mandatory disclosure obligation is an inefficient use of societal resources and may lead to ironically inequitable results due to lack of regular communication between corporate patent prosecution groups and former employees or due to intentional malfeasance by former employees.*

*The mandatory disclosure rules provided in 37 C.F.R. § 1.56 and the inequitable conduct defense serve the laudable goal of reducing the fraudulent acquisition of enforceable patents. However, the costs of these means outweigh the benefits of the ends, particularly in the case of employee-inventors after termination of their employment. This Note is not the first to advocate for repeal of the mandatory disclosure rules altogether for publicly available documents. Many patent practitioners share the belief that societal resources are not well spent reporting publicly available prior art references. However, repeal of the disclosure rules for all publicly available references may be politically infeasible. So, this Note alternatively proposes a more limited revision to the*

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*mandatory disclosure rules: The mandatory disclosure obligation should at a minimum be modified by (1) removing the requirement to disclose U.S. patents and U.S. published patent applications and (2) limiting the duration of the mandatory disclosure obligation for employee-inventors to the duration of the inventor's agency relationship with the corporate employer-assignee. With these changes, the U.S. patent system will more effectively fulfill its constitutional mandate to "promote the Progress of Science and the useful Arts."*

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## I. INTRODUCTION

Imagine a small pharmaceutical corporation with a single patent family<sup>1</sup> protecting its flagship product. This patent family protects the crown jewels of the corporation and without issuance of a valid enforceable U.S. patent, the corporation will fail. If an employee-inventor who is listed on a pending patent application in this family is fired by the corporation, the inventor may harbor ill will against the corporation and certainly will not be motivated to support the corporation. However, the inventor still retains a duty to the U.S. Patent & Trademark Office to disclose material prior art of which she becomes aware.<sup>2</sup> If the former employee violates this third-party duty, any granted patent resulting from the original patent application may be rendered worthless,<sup>3</sup> thus unfairly harming the corporation, rather than the former employee.

The Code of Federal Regulations imposes on inventors and other persons involved in patent prosecution a duty to disclose known information that is material to patentability.<sup>4</sup> For each patent application that names a person as an inventor, this duty persists until a patent is granted or the patent application is abandoned.<sup>5</sup> The obligation may be extended further if a continuation or divisional patent application is filed.<sup>6</sup> Employee-inventors who assign their inventions to an employer are not relieved of this duty by such assignments or by termination of their employment agreements.<sup>7</sup>

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1. A patent family is a group of patents or patent applications that claim a common priority date based on a common priority application. *See, e.g.,* Talya Poncheck, *Does the Patent System Promote Scientific Innovation? Empirical Analysis of Patent Forward Citations*, 25 ALB. L.J. SCI. & TECH. 289, 322 (2015).

2. *See* 37 C.F.R. §§ 1.56(a), (c) (2012). Information is considered material if “it is not cumulative to information already of record or being made of record in the application, and (1) [i]t establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or (2) [i]t refutes, or is inconsistent with, a position the applicant takes in: (i) [o]pposing an argument of unpatentability relied on by the [Patent and Trademark] Office, or (ii) [a]sserting an argument of patentability.” 37 C.F.R. § 1.56(b).

3. *See infra* Section II.A.

4. *See* 37 C.F.R. § 1.56(a), (c).

5. 37 C.F.R. § 1.56(a).

6. U.S. PAT. & TRADEMARK OFF., U.S. DEP’T OF COM., MANUAL OF PATENT EXAMINING PROCEDURE § 2001.06(b) (9th ed., rev. 8, Jan. 2018) [hereinafter MPEP].

7. *See generally* Rene D. Tegmeyer, *A Refocusing on Inequitable Conduct in New Rule 56*, 20 AIPLA Q.J. 191, 202 (1992) (“[T]he duty imposed on [the inventor] continues until the application issues as a patent or becomes abandoned and does not terminate when they cease to be substantively involved with the preparation or prosecution of the application.”); Comment 34 and the Pat. and Trademark Off. Reply in Duty of Disclosure, 57 Fed. Reg. 2021-02 (Jan. 17, 1992) (“The duty to disclose information material to patentability rests on the individuals designated in § 1.56(c) until the application issues as a patent or becomes abandoned.”).

The remedies for breach of the duty to disclose can be severe.<sup>8</sup> Intentional breach of the duty to disclose is inequitable conduct, and the remedy for inequitable conduct is that the entire patent or even multiple related patents are rendered unenforceable.<sup>9</sup> Thus, the remedy for inequitable conduct is distinguished from invalidity patent defenses, such as anticipation and obviousness, which are limited to invalidation of only the impacted individual claims rather than all claims of a patent.<sup>10</sup> For this reason, Federal Circuit Court Judge Rader has described the inequitable conduct remedy as the “atomic bomb” of patent law.<sup>11</sup> A disgruntled inventor who is fired from a corporation can theoretically destroy the value of one or more of the corporation’s patents by intentionally breaching her duty of disclosure.<sup>12</sup> In other words, in apparent contradiction, the employee-inventor could have an ethical duty to unethically disclose a confidential trade secret of her new employer.

Even if an employee-inventor terminates employment under good terms, she may subsequently be employed by a competitor and be exposed to aspects of the competitor’s confidential research that would be material to patentability of her former employer’s pending patent application. For example, this may occur if the former employee learns of information that “refutes, or is inconsistent with, a position the applicant takes in . . . [o]pposing an argument of unpatentability relied on by the [Patent and Trademark] Office.”<sup>13</sup> Furthermore, even if the former employee becomes aware of non-confidential information and does not have significant contact with her former employer, she may not know whether the patent application is still pending or to whom at her former employer she should disclose material information.<sup>14</sup>

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8. See, e.g., *Am. Calcar, Inc. v. Am. Honda Motor Co.*, 768 F.3d 1185, 1191-92 (Fed. Cir. 2014) (holding that patents for a global positioning system were unenforceable because an inventor failed to disclose his knowledge of an owner’s manual and photographs of a car navigation system even though the asserted claims were otherwise valid and enforceable).

9. *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 877 (Fed. Cir. 1988). See, e.g., *Consol. Aluminum Corp. v. Foseco Int’l Ltd.*, 910 F.2d 804, 808-12 (Fed. Cir. 1990).

10. *Kingsdown Med. Consultants, Ltd.*, 863 F.2d at 877 (rendering an entire patent unenforceable based on a finding of inequitable conduct); 35 U.S.C. § 288 (2011) (permitting maintenance of an infringement action based on a valid claim of a patent containing an invalid claim).

11. *Aventis Pharma S.A. v. Amphastar Pharms., Inc.*, 525 F.3d 1334, 1349 (Fed. Cir. 2008) (Rader, J., dissenting).

12. See, e.g., *Am. Calcar, Inc.*, 768 F.3d at 1191-92.

13. 37 C.F.R. § 1.56(b).

14. The average pendency of a U.S. patent application has varied from approximately 1.5 to 3.5 years over the period from 1985 to 2016. See Dennis Crouch, *Pendency of US Patent Applications*, PATENTLY-O (Nov. 6, 2016), <https://patentlyo.com/patent/2016/11/pendency-patent-applications.html>.

The Constitution empowers Congress to enact a patent system “[t]o promote the Progress of Science and useful Arts.”<sup>15</sup> To further this goal most effectively, Congress should remove the obligation to disclose publicly available information. Furthermore, Congress should change the disclosure obligation to focus on the patent applicant, rather than “individual[s] associated with the filing and prosecution of a patent application.”<sup>16</sup> This is particularly important for inventions created in the course of an inventor’s employment that are assigned or subject to an assignment obligation to the inventor’s employer. For employee-assigned inventions, the true party in interest in the patent prosecution is the corporate applicant, not the inventor. The continued focus of the U.S. patent regulations on the inventor instead of the applicant can lead to perverse outcomes and is an inefficient use of societal resources.

Other countries have taken significantly different approaches to disclosure requirements.<sup>17</sup> Australia instituted disclosure requirements but abandoned these requirements altogether in 2007 for newly-filed applications.<sup>18</sup> The European Patent Office, Korea, and China have not adopted a duty to disclose prior art.<sup>19</sup> Canada, Israel, India, and Japan have adopted disclosure requirements but the obligation falls on the patent applicant, rather than the inventor.<sup>20</sup>

With the Leahy-Smith America Invents Act of 2011 (the “AIA”), the United States has taken several steps towards harmonizing its patent system with those of other countries.<sup>21</sup> These steps include adopting a first-inventor-to-file system and recognizing the right of non-inventor applicants to file a patent application for an assigned invention.<sup>22</sup> However, the AIA did not remove the duty of inventors to disclose information material to patentability or reduce the draconian penalties

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15. U.S. CONST. art. I, § 8, cl. 8.

16. 37 C.F.R. § 1.56(a).

17. See Gina M. Bicknell, *To Disclose or Not to Disclose: Duty of Candor Obligations of the United States and Foreign Patent Offices*, 83 CHI.-KENT L. REV. 425, 456-63 (2008).

18. See *id.* at 458-59.

19. *Id.* at 460; Jay Erstling, *Patent Law and the Duty of Candor: Rethinking the Limits of Disclosure*, 44 CREIGHTON L. REV. 329, 356 (2011); Manxia Xu, *China: Patents 2020*, ICLG.COM § 5.2 (Sept. 15, 2019), <https://iclg.com/practice-areas/patents-laws-and-regulations/china>.

20. Bicknell, *supra* note 17, at 456, 458-63.

21. See generally Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified as amended in 35 U.S.C.), [https://www.uspto.gov/sites/default/files/aia\\_implementation/20110916-pub-112-29.pdf](https://www.uspto.gov/sites/default/files/aia_implementation/20110916-pub-112-29.pdf).

22. See *Leahy-Smith America Invents Act Revises U.S. Patent Law Regime*, 125 HARV. L. REV. 1290, 1291-92 (Mar. 20, 2012), [https://harvardlawreview.org/wp-content/uploads/pdfs/vol125\\_leahy\\_smith\\_america\\_invents\\_act.pdf](https://harvardlawreview.org/wp-content/uploads/pdfs/vol125_leahy_smith_america_invents_act.pdf) [hereinafter *AIA Revises U.S. Patent Law*].

associated with breach of this duty.<sup>23</sup> This Note argues that the duty of disclosure mandated by 37 C.F.R. § 1.56,<sup>24</sup> coupled with the “atomic bomb” defense of inequitable conduct for breach of this duty,<sup>25</sup> does not “promote the Progress of Science and useful Arts.”<sup>26</sup> This Note describes the development of the inequitable conduct defense starting from its roots in the doctrine of unclean hands and concluding with recent clarifications to the doctrine by the *Therasense* court. Based on this understanding of the U.S. duty of disclosure, this Note compares the U.S. system to those of several other countries. The effects of these differences are assessed and alternate approaches are recommended for the U.S. system. The obligation to disclose art that is material to patentability should be removed for publicly available references. This disclosure duty not only fails to use societal resources efficiently, it is not necessary to an efficient and effective patent system. Alternatively, the obligation to disclose should be modified in two ways. First, the duty to disclose should not require disclosure of U.S. patents and published U.S. patent applications since these are easily accessible and searchable for patent examiners. Second, to reduce the impact on corporate patentees following the termination of employment for employee-inventors’ patent applications prosecuted by an employer-assignee applicant, rather than an employee-inventor, the inventor’s obligation to disclose material information should terminate when the agency relationship between the employer-assignee and the employee-inventor ends.

## II. BACKGROUND

### *A. Evolution of the inequitable conduct doctrine from the unclean hands doctrine*

In the 1800s and early 1900s, the Supreme Court did not recognize extrinsic misconduct by the patentee as an invalidity defense to patent infringement.<sup>27</sup> Patent fraud required, as for common law fraud, reliance and proximate damage to the injured party.<sup>28</sup> Furthermore, in patent fraud cases, the injured party was deemed to be the government, not an

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23. 37 C.F.R. § 1.56. See, e.g., *Am. Calcar, Inc.*, 768 F.3d at 1192; *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1289-90 (Fed. Cir. 2011) (en banc).

24. 37 C.F.R. § 1.56.

25. *Aventis Pharma S.A.*, 525 F.3d at 1349.

26. U.S. CONST. art. I, § 8, cl. 8. (“The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”).

27. See Robert J. Goldman, *Evolution of the Inequitable Conduct Defense in Patent Litigation*, 7 HARV. J.L. & TECH. 37, 38-51 (1993).

28. *Id.* at 38-39.

accused infringer, which meant that patent fraud was not a defense to a claim of patent infringement.<sup>29</sup> In *Mowry v. Whitney*,<sup>30</sup> for example, the Court affirmed the dismissal of an equitable defense of fraud, noting that only the government had standing to invalidate a patent for fraud since the government was the injured party.<sup>31</sup> Fraud allegations by individuals were limited to situations of conflicting patents<sup>32</sup> or to cases where fraud “appear[ed] on the face of the patent.”<sup>33</sup> In *Corona Cord Tire Co.*,<sup>34</sup> the Court held that patents were presumed valid even if false statements were made to the patent examiner to procure allowance so long as the false statements were not “indispensable to the granting of the patent.”<sup>35</sup>

In the 1930s and 1940s, however, the public grew hostile to patent monopolies and the Supreme Court formulated a new doctrine based on the principle of unclean hands.<sup>36</sup> In *Keystone Driller*,<sup>37</sup> the Court recognized the unclean hands doctrine in patent cases in which “unconscionable act[s]” had an “immediate and necessary relation” to the equitable relief sought in litigation.<sup>38</sup> In *Keystone Driller*, the Court found the patentee to have unclean hands due to information suppressed during a prior trial of the same patent, not due to the fraudulent statements made during patent prosecution.<sup>39</sup>

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29. *See id.* at 41-42.

30. 81 U.S. 434 (1871).

31. *Id.* at 441 (“The fraud, if one exists, has been practiced on the government, and as the party injured, it is the appropriate party to assert the remedy or seek relief.”).

32. *See id.* at 439-41. “[N]o one but the government . . . can institute judicial proceedings for the purpose of vacating or rescinding the patent which the government has issued to an individual, except in the cases provided for in section sixteen [regarding conflicting patent claims] of the act of July 4th, 1836.” *Id.* at 439.

33. *Providence Rubber Co. v. Goodyear*, 76 U.S. 788, 797 (1869) (“Unless letters patent are absolutely void on the face of them, or the issuing of them was without authority, or was prohibited by statute, they can only be avoided in a regular course of pleading, in which the fraud, irregularity, or mistake is regularly put in issue. The principle has been frequently admitted, that the fraud must appear on the face of the patent to render it void in a court of law, and that when the fraud or other defect arises on circumstances, *dehors* the grant, the grant is voidable only by suit.” (quoting *Jackson v. Lawton*, 10 Johns. 23, 26 (N.Y. Sup. Ct. 1813)).

34. *Corona Cord Tire Co. v. Dovon Chemical Corp.*, 276 U.S. 358 (1928).

35. *Id.* at 374 (finding that affidavits that falsely stated actual reduction to practice pre-dating a prior art publication were “perhaps reckless” but not material because they were not “indispensable to the granting of the patent” and therefore could not overcome the presumption of validity of the granted patent).

36. Goldman, *supra* note 27, at 39.

37. *Keystone Driller Co. v. Gen. Excavator Co.*, 290 U.S. 240 (1933).

38. *Id.* at 245 (“[Courts] apply the maxim requiring clean hands only where some unconscionable act of one coming for relief has immediate and necessary relation to the equity that he seeks in respect of the matter in litigation.”).

39. *Id.* at 247.



A decade later, the Court faced another egregious case of patentee malfeasance in *Hazel-Atlas Glass Co.*<sup>40</sup> The patentee committed fraud on the Patent Office by (1) paying an expert to write a paper that described the claimed invention as groundbreaking and (2) representing to the examiner that this paper was an independent publication to secure allowance of the patent application.<sup>41</sup> The patentee also committed fraud on the courts by suppressing evidence during trial that would connect the patentee to the paid expert author.<sup>42</sup> As a result of the patentee's fraud on both the Patent Office and the courts, the Court held that the patent owner's fraud was grounds for "complete denial of relief."<sup>43</sup> Thus, the Court no longer required the government be a party to a suit for a patent to be found unenforceable.<sup>44</sup>

In 1945, the *Precision Instrument Mfg. Co.* Court more formally crafted the inequitable conduct defense to patent infringement.<sup>45</sup> The Court relied upon the common law doctrine of unclean hands and found that fraud or inequitable conduct before the Patent Office alone was sufficient to render a patent unenforceable.<sup>46</sup>

Those who have applications pending with the Patent Office or who are parties to Patent Office proceedings have an uncompromising duty to report to it all facts concerning possible fraud or inequitable-ness underlying the applications in issue. . . . Public interest demands that all facts relevant to such matters be submitted formally or informally to the Patent Office, which can then pass upon the sufficiency of the evidence. Only in this way can that agency act to safeguard the public in the first instance against fraudulent patent monopolies. Only in that way can the Patent Office and the public escape from being classed among the 'mute and helpless victims of deception and fraud.'<sup>47</sup>

The 1952 Patent Act significantly revised the U.S. patent system.<sup>48</sup> This Act remains the foundation of the contemporary U.S. patent

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40. *Hazel-Atlas Glass Co. v. Hartford-Empire Co.*, 322 U.S. 238 (1944), *departed from on other grounds by* *Standard Oil Co. of California v. United States*, 429 U.S. 17 (1976).

41. *See id.* at 240-42.

42. *See id.* at 241-43.

43. *Id.* at 250.

44. *Id.*; Goldman, *supra* note 27, at 48.

45. *See Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 814 (1945) ("It is a self-imposed ordinance that closes the doors of a court of equity to one tainted with inequitable-ness or bad faith relative to the matter in which he seeks relief, however improper may have been the behavior of the defendant.").

46. *Id.* at 814-16.

47. *Id.* at 818 (citing *Hazel-Atlas Glass Co.*, 322 U.S. at 246) (internal citations omitted).

48. *See* Matt Kwong, *Six Significant Moments in Patent History*, REUTERS (Nov. 4, 2014), <https://www.reuters.com/article/us-moments-patent/six-significant-moments-in->

system.<sup>49</sup> The 1952 Act did not adopt any specific language regarding an inequitable conduct defense to patent infringement, electing only to note that “unenforceability” was a defense to patent infringement.<sup>50</sup> Instead, it incorporated the concept that patents were presumed valid, as described in *Corona Cord Tire Co.*<sup>51</sup> The Patent Office’s Rules of Practice in Patent Cases of 1949 and the corresponding federal regulations prohibited fraud but did not specifically address inequitable conduct and did not further elucidate a definition of inequitable conduct.<sup>52</sup> So, even with the judicially developed doctrine of *Keystone Driller, Hazel-Atlas Glass Co.*, and *Precision Instrument Mfg. Co.*, statutory changes were slow to follow.<sup>53</sup>

Over the next few decades, the Supreme Court and Federal Circuits further developed a duty of disclosure.<sup>54</sup> In 1977, the U.S. Patent and Trademark Office (the “PTO”) adopted much of this case law to more precisely define the duty of disclosure.<sup>55</sup> Section 1.56 provided that inventors, prosecuting patent agents and attorneys, and those who are “substantively involved in the preparation or prosecution of the application” have a duty “of candor and good faith” to disclose known information that is material to examination.<sup>56</sup> The PTO clarified that “the duty applies only to individuals, not to organizations.”<sup>57</sup> The PTO also clarified the scope of the duty by adopting a reasonable examiner

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patent-history-idUSKBN0IN1Y120141104 (describing how the Patent Act of 1952 was a major reform of America’s first Patent Act).

49. See David O. Taylor, *Patent Fraud*, 83 TEMP. L. REV. 49, 94 (2010).

50. Goldman, *supra* note 27, at 52-53.

51. Taylor, *supra* note 49, at 88-89.

52. Goldman, *supra* note 27, at 53 (citing 37 C.F.R. § 1.56 (1951)).

53. See Goldman, *supra* note 27, at 52-53.

54. See *id.* at 57-61.

55. See Rules of Practice in Patent Cases, 42 Fed. Reg. 5588, 5589 (Jan. 28, 1977) (codified at 37 C.F.R. pt. 1).

56. *Id.* at 5593.

“A duty of candor and good faith toward the Patent and Trademark Office rests on the inventor, on each attorney or agent who prepares or prosecutes the application and on every other individual who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. All such individuals have a duty to disclose to the Office information they are aware of which is material to the examination of the application. Such information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent. The duty is commensurate with the degree of involvement in the preparation or prosecution of the application.”

*Id.*

57. *Id.* at 5589.

standard for materiality.<sup>58</sup> Furthermore, the 1977 regulation defined the level of proof needed to demonstrate breach of the duty. To invalidate an application for inequitable conduct, 37 C.F.R. § 1.56(d) required demonstration by “clear and convincing evidence” that the duty of disclosure had been violated “through bad faith or gross negligence.”<sup>59</sup> In response to the low gross negligence standard, defendants in patent infringement cases asserted the inequitable conduct defense in nearly every suit.<sup>60</sup> Courts soon recognized that this defense had become an “absolute plague” on the patent system.<sup>61</sup> The Federal Circuit’s solution at the appellate level was to change the standard of review of district courts’ factual findings for materiality and intent from *de novo* to clearly erroneous or abuse of discretion.<sup>62</sup> This ultimately proved to be an insufficient band-aid.<sup>63</sup> The *Therasense* decision followed.<sup>64</sup>

In 2011, in response to continued burdens on the PTO and the courts “to the detriment of the public,” the Federal Circuit in *Therasense* sought to rein in the excesses of the inequitable conduct defense and other undesirable unintended consequences.<sup>65</sup> Notably, the court declined to follow 37 C.F.R. § 1.56 when defining inequitable conduct because the rule was overly broad and the court found this breadth caused many of the problems with the inequitable conduct defense.<sup>66</sup> “Because Rule 56 sets such a low bar for materiality, adopting this standard would inevitably result in patent prosecutors continuing the existing practice of disclosing too much prior art of marginal relevance and patent litigators continuing

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58. *Id.* (“Information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent.” (internal quotation marks omitted)).

59. *Id.* at 5594. “An application shall be stricken from the files if it is established by clear and convincing evidence that any fraud was practiced or attempted on the Office in connection with it or that there was any violation of the duty of disclosure through bad faith or gross negligence.” *Id.*

60. *See* *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984); *see also* *FMC Corp. v. Manitowoc Co., Inc.*, 835 F.2d 1411, 1415 (Fed. Cir. 1987) (“Inequitable conduct . . . should not be[] a magic incantation to be asserted against every patentee.” (internal quotation marks omitted)).

61. *Burlington Industries, Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988) (“[T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague.”).

62. *See* *FMC Corp.*, 835 F.2d at 1414 (reviewing under clearly erroneous standard); *Kingsdown Med. Consultants, Ltd.*, 863 F.2d at 876 (reviewing under abuse of discretion standard).

63. *See* *Therasense, Inc.*, 649 F.3d at 1285 (“Recognizing the problems created by the expansion and overuse of the inequitable conduct doctrine, this court granted Abbott’s petition for rehearing en banc.”).

64. *Id.*

65. *Id.* at 1289-90.

66. *Id.* at 1294-95.

to charge inequitable conduct in nearly every case as a litigation strategy.<sup>67</sup>

The inequitable conduct defense is a judicially created defense based on the doctrine of unclean hands but has characteristics that distinguish it from the general unclean hands defense.<sup>68</sup> The scope of the inequitable conduct defense has expanded relative to the unclean hands defense to cover “not only egregious affirmative acts of misconduct intended to deceive both the PTO and the courts but also the mere nondisclosure of information to the PTO.”<sup>69</sup> In contrast, the Supreme Court’s unclean hands cases of *Keystone Driller*, *Hazel-Atlas Glass Co.*, and *Precision Instrument Mfg. Co.* were each based on particularly egregious cases in which the patent owner “deliberately planned and carefully executed schemes to defraud” both the PTO and the courts.<sup>70</sup> The spirit of the unclean hands defense as addressed by these cases has been retained as part of the inequitable conduct defense.<sup>71</sup> Since “affirmative egregious misconduct” (e.g., “filing of an unmistakably false affidavit” during prosecution) is inherently material, but-for materiality is not required in such cases.<sup>72</sup> In addition, the unclean hands defense remains simultaneously in effect for acts of business and litigation misconduct.<sup>73</sup> Inequitable conduct permits a court to render an entire patent unenforceable generally, rather than merely permitting dismissal of the suit against a particular plaintiff, which is the remedy for a successful unclean hands defense.<sup>74</sup>

*Therasense* clarified the elements of intent and materiality and defined the appropriate tests for evaluation of a patentee’s allegedly inequitable conduct.<sup>75</sup> First, *Therasense* emphasized that intent and materiality are independent elements of the inequitable conduct defense and are not evaluated on a sliding scale.<sup>76</sup> This abrogated *Am. Hoist &*

67. *Id.* at 1295 (referring to 37 C.F.R. § 1.56).

68. *Id.* at 1287.

69. *Therasense, Inc.*, 649 F.3d at 1287.

70. *Id.* (quoting *Hazel-Atlas Glass Co.*, 322 U.S. at 245).

71. See *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1366 (Fed. Cir. 2008) (“Just as it is inequitable to permit a patentee who obtained his patent through deliberate misrepresentations or omissions of material information to enforce the patent against others, it is also inequitable to strike down an entire patent where the patentee committed only minor missteps or acted with minimal culpability.”).

72. See *Therasense, Inc.*, 649 F.3d at 1292.

73. *Gilead Scis., Inc. v. Merck & Co.*, 888 F.3d 1231, 1239-40 (Fed. Cir. 2018) (applying the unclean hands standard from *Keystone Driller* to business and litigation misconduct and distinguishing such conduct from inequitable conduct because the unclean hands did not result from communications with the PTO).

74. See *Therasense, Inc.*, 649 F.3d at 1287; *Gilead Scis., Inc.*, 888 F.3d at 1233-34.

75. See *Therasense, Inc.*, 649 F.3d at 1290-91.

76. *Id.* at 1290.

*Derrick Co. v. Sowa & Sons, Inc.*, which had defined a sliding scale such that higher levels of materiality require lower levels of intent.<sup>77</sup> Second, the Federal Circuit tightened the standards for proving intent and clarified the corresponding evidence standard and the types of evidence that can be used.<sup>78</sup> Gross negligence is no longer sufficient.<sup>79</sup> Instead, “specific intent to deceive the PTO” is required.<sup>80</sup> “[T]he accused infringer must prove by clear and convincing evidence that the applicant knew of the reference, knew that it was material, and made a deliberate decision to withhold it.”<sup>81</sup> The court recognized that direct evidence of intent may frequently be unavailable and therefore held that courts “may infer intent from indirect and circumstantial evidence. However, . . . the specific intent to deceive must be the single most reasonable inference able to be drawn from the evidence.”<sup>82</sup> Third, *Therasense* clarified that materiality is assessed using a but-for test: if the PTO would not have allowed a claim but for the withholding of the undisclosed reference, then the withheld reference is material.<sup>83</sup> Finally, the court clarified the balancing test used to prove inequitable conduct.<sup>84</sup> Once intent and materiality are proven, the “court . . . weigh[s] the equities to determine whether the applicant’s conduct before the PTO warrants rendering the entire patent unenforceable.”<sup>85</sup> Thus, *Therasense* provided much needed clarity regarding the requirements for the inequitable conduct defense and scaled back what it saw as the excesses of the defense.<sup>86</sup>

Also in 2011, Congress passed the AIA, which was heralded as the most significant reform of the patent system since 1952.<sup>87</sup> The AIA

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77. *Id.*; see also *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1362 (Fed. Cir. 1984).

78. See *Therasense, Inc.*, 649 F.3d at 1290-91.

79. *Id.* at 1290.

80. *Id.*

81. *Id.*

82. *Id.* (internal citations and quotation marks omitted); see also *id.* at 1290-91 (“[W]hen there are multiple reasonable inferences that may be drawn, intent to deceive cannot be found.”).

83. *Id.* at 1291-92. Note that invalidity is sufficient but not necessary to demonstrate materiality. Information that invalidates a claim is inherently material. However, information may be material even if it does not invalidate a patent claim. An example of the difference between these tests is apparent in the different evidentiary standards required by the U.S. PTO and federal courts: Invalidation of a granted patent requires demonstration by clear and convincing evidence, whereas materiality requires demonstration only by preponderance of the evidence. *Therasense, Inc.*, 649 F.3d at 1291-92.

84. See *id.* at 1287.

85. *Id.*

86. See *id.* at 1289-95.

87. David Goldman, *Patent Reform is Finally on its Way*, CNN MONEY (June 24, 2011), [https://money.cnn.com/2011/06/24/technology/patent\\_reform\\_bill/index.htm](https://money.cnn.com/2011/06/24/technology/patent_reform_bill/index.htm).

partially harmonized the U.S. rules with those of other countries.<sup>88</sup> The AIA adopted a number of changes, including among others: (1) switching to a first-inventor-to-file system from a first-to-invent system, (2) creating and adapting post-grant opposition procedures, and (3) allowing filing of patent applications by applicants other than inventors.<sup>89</sup> In the United States, the change to permit applicants to file applications on behalf of inventors became effective on September 16, 2012, thus recognizing applicants as the true party in interest for patent applications.<sup>90</sup> For applications filed before that date, an assignee can prosecute an application, but the inventor is still viewed as the applicant.<sup>91</sup> For applications filed on or after the effective date, an assignee or a person to whom the inventor is obligated to assign an invention may file and prosecute the application as the applicant.<sup>92</sup> Although the AIA did not significantly change the duty of disclosure, the PTO added the applicant and those associated with the applicant to the list of those responsible for disclosing material information to the PTO.<sup>93</sup> This change was necessary for consistency with the AIA's change to allow assignee-applicants to file patent applications.<sup>94</sup> However, 37 C.F.R. § 1.56 was not changed to remove inventors from the list of those required to disclose material information to the PTO.<sup>95</sup> So, unlike in most other countries,<sup>96</sup> for an applicant-filed patent application in the United States, the inventor still has an explicit duty to disclose material information to the PTO.<sup>97</sup>

### *B. Inequitable conduct and disclosure rules outside the United States*

The United States is the only country to use inequitable conduct as an incentive for disclosure.<sup>98</sup> As described in more detail below, several

88. *AIA Revises U.S. Patent Law*, *supra* note 22.

89. Leahy-Smith America Invents Act, *supra* note 21; *AIA Revises U.S. Patent Law*, *supra* note 22.

90. MPEP, *supra* note 6, at § 605.

91. *Id.*

92. *Id.*

93. See 37 C.F.R. § 1.56(c)(3). The list of individuals defined as “associated with the filing or prosecution of a patent application” is expanded to include “[e]very other person who is substantively involved in the preparation or prosecution of the application[s] and who is associated with ... the applicant.” *Id.* See also Changes to Implement the Inventor's Oath or Declaration Provisions of the Leahy-Smith America Invents Act, 77 Fed. Reg. 48776-01 (Aug. 14, 2012) (to be codified at 37 C.F.R. pt. 1).

94. Changes to Implement the Inventor's Oath or Declaration Provisions of the Leahy-Smith America Invents Act, 77 Fed. Reg. at 48776, 48788, 48818.

95. 37 C.F.R. § 1.56(c)(1).

96. See *infra* section II.B.

97. 37 C.F.R. § 1.56(c)(1).

98. Honorable Randall R. Rader, *A Review of Recent Decisions of the United States Court of Appeals for the Federal Circuit: Foreword: Always at the Margin: Inequitable Conduct in Flux*, 59 AM. U. L. REV. 777, 781 (2010).

other countries have disclosure obligations but they differ in their approaches as to whether and when inventors have a disclosure obligation. These countries also have different approaches to address noncompliance with the disclosure obligation.

*1. Japan: Disclosure Obligation for Applicant*

A prior art disclosure obligation is still relatively new to the Japanese Patent Office (the “JPO”), which only incorporated a disclosure obligation into its patent system in 2002.<sup>99</sup> In Japan, (1) the disclosure obligation is limited to information known by the applicant at the time of filing, (2) the applicant, not the inventor, has an obligation to disclose, and (3) non-compliance does not affect the validity of an issued patent.<sup>100</sup> An applicant is not required to conduct a prior art search.<sup>101</sup> However, a “person desiring a patent ([i.e., the] applicant for patent)”<sup>102</sup> has a duty to disclose prior art known *as of the filing date*.<sup>103</sup> Prior art under Japanese law is defined as “any inventions publicly made known through documents . . . which are related to the invention for which a patent is sought.”<sup>104</sup> To determine whether an earlier document is “related” to the invention, the courts consider the similarity between the prior art and the claimed invention with regards to their fields, problems solved, and

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99. *Following the United States, Japan and Australia Enact Duty to Disclose Requirements*, <https://web.archive.org/web/20080605232032/http://www.gastle.com/bulletin5.htm> (last visited Nov. 26, 2019); *see also* JAPANESE PAT. OFF., EXAMINATION GUIDELINES ON REQUIREMENT FOR DISCLOSURE OF INFORMATION ON PRIOR ART DOCUMENTS 1, [https://www.jpo.go.jp/e/news/public/feedback/document/prior\\_art\\_doc/prior\\_art\\_doc.pdf](https://www.jpo.go.jp/e/news/public/feedback/document/prior_art_doc/prior_art_doc.pdf) (last visited Jan. 25, 2019) [hereinafter JPO Examination Guidelines].

100. JPO Examination Guidelines, *supra* note 99, at 1-2 (quoting [Japanese] Patent Law § 36(4)(ii)) (“Where a person desiring a patent knows, at the time of filing a patent application, any inventions publicly known through documents (inventions referred to in Section 29(1)(iii); the same meaning shall apply thereunder in this paragraph) which are related to the invention, the detailed description of the invention shall contain the source of information on the invention publicly known through a document such as the title of a publication in which the invention publicly known through a document is described.”).

101. *Id.* at 6.

102. *Id.* at 2.

103. *Keisen's Policy on the IDS System in Japan*, KEISEN ASSOCIATES, <http://www.keisenassociates.com/IP%20News%20Flash-%20IDS.htm> (last visited Nov. 26, 2019); *see also* JPO Examination Guidelines, *supra* note 99, at 7. Disclosure obligation is limited to prior art known as of the filing date. The filing date is defined as the filing date of (1) the parent application for a divisional or converted application, (2) the priority application with the latest filing date for a Japanese domestic application or a national phase application claiming priority under the PCT (i.e., an “international patent application”), and (3) the Japanese application for an application claiming priority under the Paris Convention. *See id.*; *Japanese Patent FAQs*, ONDA TECHNO INT’L PAT. ATTYS, [https://www.ondatechno.com/English/ip/patent/faq\\_prior.html](https://www.ondatechno.com/English/ip/patent/faq_prior.html) (last visited Nov. 26, 2019). The JPO requires submission of at least one reference for non-PCT applications. *Id.*

104. JPO Examination Guidelines, *supra* note 99, at 1-2. Invention refers to the claimed invention. *Id.* at 4.

inventive aspects.<sup>105</sup> If there are no related prior art documents, the applicant is required to submit documents that generally describe the state of the art in the technical field of the invention.<sup>106</sup> The applicant also has a statutory obligation to list at least one prior art reference in the background section of a patent application or provide an explanation for the lack of this reference.<sup>107</sup>

The focus in the Japanese system is on the applicant, rather than the inventor.<sup>108</sup> If an applicant is a corporation, the Japanese Examination Guidelines explicitly note that the applicant is deemed to know of (1) patent applications filed by the corporation, (2) prior art “obtained through prior art research” by employees of the corporation “in the course of their duties,” and (3) publications by employees of the company in the name of the company.<sup>109</sup> Thus, the standard for who must disclose and what must be disclosed differs from the U.S. approach. In addition, since the applicant’s duty to disclose ends at the filing date, the likelihood that an inventor has left the company before the end of the disclosure obligation is significantly reduced relative to the U.S. system where the duty to disclose extends through the grant of the patent.<sup>110</sup>

The enforcement mechanisms in the Japanese system also differ from those of the U.S. system. In contrast to the “atomic bomb” of the inequitable conduct in U.S. jurisprudence,<sup>111</sup> failure to disclose known prior art in Japan may result in rejection of patent claims by the patent examiner under Section 49(v) of the Japanese Patent Law, but *such a failure has no effect on validity of a granted patent*.<sup>112</sup> The penalty of invalidity is not imposed for a granted patent because the disclosure rule is designed to improve efficiency of the patent office and it is recognized that failure to disclose does not seriously harm third-party infringers.<sup>113</sup> The purpose of the disclosure obligation is solely to assist the examiner in understanding the technical significance, the technical contribution, and the patentability of the disclosed invention.<sup>114</sup> In place of the stick

105. *Id.* at 4.

106. *Id.* at 5.

107. KEISEN ASSOCIATES, *supra* note 103.

108. See JPO Examination Guidelines, *supra* note 99, at 1-2 (generally discussing the Japanese patent system in the context of the applicant’s knowledge and duties to disclose).

109. JAPANESE PAT. OFF., QUESTIONS AND ANSWERS REGARDING THE EXAMINATION GUIDELINES ON THE REQUIREMENT FOR DISCLOSURE OF INFORMATION ON PRIOR ART DOCUMENTS AND MAJOR CHANGES TO THE GUIDELINES 4, [http://www.jpo.go.jp/te-tuzuki\\_e/t\\_tokkyo\\_e/pdf/prior\\_art\\_faq.pdf](http://www.jpo.go.jp/te-tuzuki_e/t_tokkyo_e/pdf/prior_art_faq.pdf) (last visited Jan. 25, 2019).

110. Compare 37 C.F.R. § 1.56 with JPO Examination Guidelines, *supra* note 99, at 6.

111. *Aventis Pharma S.A.*, 525 F.3d at 1349.

112. JPO Examination Guidelines, *supra* note 99, at 2; see also KEISEN ASSOCIATES, *supra* note 103.

113. JPO Examination Guidelines, *supra* note 99, at 2.

114. See *id.*



of invalidity used in the U.S. system, the Japanese system provides a carrot: the JPO encourages disclosure by suggesting that disclosure allows the examiner to consider the prior art and thus can result in a stronger patent right if the patent is granted.<sup>115</sup>

In addition to the lack of an invalidation penalty for an issued patent, an examiner's rejection of an application for failure to disclose prior art is also procedurally more difficult in Japan than in the United States. In Japan, before rejecting claims of an application due to a failure to disclose prior art, the examiner must notify the applicant that she believes the applicant has not satisfied the disclosure requirement and give the applicant thirty days for domestic applicants or sixty days for foreign applicants to provide such disclosures.<sup>116</sup>

## 2. Europe, China, and Republic of Korea: No Disclosure Obligation

Unlike the U.S. and Japanese systems, the European Patent Office (the "EPO"), the Korean Intellectual Property Office (the "KIPO"), and the National Intellectual Property Administration of the People's Republic of China (the "CNIPA") impose no obligation to disclose prior art or a duty of candor.<sup>117</sup>

In Europe, for example, applicants may voluntarily disclose prior art and many do so to strengthen patent rights prior to post-grant opposition proceedings.<sup>118</sup> However, in contrast to the U.S. system, the examiner may choose to disregard prior art cited by the applicant or other parties.<sup>119</sup> This can reduce distraction and allow the examiner time to focus on an independent search.<sup>120</sup> If a patent is ultimately granted, a

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115. *See id.* at 1-2.

116. *Id.* at 11-13. Patent rights are potentially stronger because the patent applicant may revise patent claims during prosecution in response to arguments from patent examiner based on cited art. *See id.* at 12. Claims revised in response to prior art would be less vulnerable to invalidation based on the cited prior art.

117. Bicknell, *supra* note 17, at 460; Erstling, *supra* note 19, at 356; Xu, *supra* note 19.

118. Bicknell, *supra* note 17, at 460 n.194.

119. EUROPEAN PAT. OFF., CONVENTION ON THE GRANT OF EUROPEAN PATENTS, Part VII, Ch. I, Art. 114(1), [http://documents.epo.org/projects/babylon/eponet.nsf/0/029F2DA107DD667FC125825F005311DA/\\$File/EPC\\_16th\\_edition\\_2016\\_en.pdf](http://documents.epo.org/projects/babylon/eponet.nsf/0/029F2DA107DD667FC125825F005311DA/$File/EPC_16th_edition_2016_en.pdf) (last visited Jan. 29, 2019).

120. *See generally* Bruno van Pottelsberghe de la Potterie, *The Quality Factor in Patent Systems* 20-21 (European Center for Advanced Research in Economics and Statistics, ECARES Working Paper No. 2010-027, July 2010), <https://ideas.repec.org/p/eca/wpaper/2013-88986.html> (noting that an applicant may hide relevant references in a long list of irrelevant references and that reference lists from third parties are not as helpful to building the examiner's knowledge of the scope of the prior art when compared to personally performing a search); Gideon Mark & T. Leigh Anenson, *Inequitable Conduct and Walker Process Claims After Therasense and the America Invents Act*, 16 U. PA.

nine-month opposition period follows issuance and during this period the EPO allows third parties to submit references or “observations concerning the patentability of the invention.”<sup>121</sup> Thus, the EPO views opposition as a tool for protecting the public from inappropriate patents.<sup>122</sup> Historically, the United States lacked such a robust post-grant opposition period, but this has been partially addressed by post-grant proceedings provided in the AIA.<sup>123</sup> This historical lack of a strong U.S. post-grant opposition process had been one of the key arguments that proponents of the U.S. disclosure duty made for retaining the duty of disclosure.<sup>124</sup>

### 3. *Canada, Mexico, and India: Limited Disclosure Obligations for Applicants*

The patent offices in Canada and Mexico have adopted intermediate positions between the statutory mandatory disclosure obligations (as required by the U.S. and Japanese systems) and the lack of disclosure obligations (as found in the European, Korean, and Chinese systems).<sup>125</sup> The Canadian Intellectual Property Office and the Mexican Institute of Industrial Property allow applicants to disclose prior art for consideration, as in the European system, but also empower patent examiners to demand applicants to disclose certain prior art.<sup>126</sup> Canadian examiners may demand that applicants disclose all prior art cited against corresponding foreign applications and request details regarding any

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J. BUS. L. 361, n.74 (2014) (“[P]atent applicants [attempt] to ‘bury’ examiners with hundreds of references so as to distract them from highly relevant references.”).

121. EUROPEAN PAT. OFF., *supra* note 119, at Part V, Ch. I, Art. 99 & Part VII, Ch. I, Art. 115.

122. See Filip De Corte et al., *AIA Post-Grant Review & European Oppositions: Will They Work in Tandem, or Rather Pass Like Ships in the Night?*, 14 N.C. J. L. & TECH. 93, 99 (2012).

123. See Bicknell, *supra* note 17, at 466-67.

124. See *id.*

125. Erstling, *supra* note 19, at 356.

126. *Id.*

opposition proceedings.<sup>127</sup> However, as in the Japanese system, violation of this disclosure obligation cannot be used to challenge a granted patent.<sup>128</sup>

India has a mandatory disclosure requirement but this requirement is more limited than that required in the U.S. and Japanese systems. Applicants for Indian patents are obligated to disclose information related to prosecution of corresponding foreign applications, such as any claim amendments or novelty objections.<sup>129</sup> Violation of this obligation can lead to invalidation of a resulting patent through pre-grant opposition, post-grant opposition, or litigation.<sup>130</sup>

#### 4. Australia: Disclosure Obligation Removed

As can be seen by the comparison of the disclosure requirements for the U.S., Japan, Europe, Korea, China, Mexico, and Canada, there is not a global consensus regarding the optimal approach to disclosure of prior art. Australia's brief experiment with a disclosure requirement provides an example of yet another approach. In 2002, the Commonwealth Parliament of Australia amended the Patents Act to require disclosure of patentability searches performed by or on behalf of an applicant in any country for all applications under examination.<sup>131</sup> An applicant was required to disclose such searches if performed or received by the applicant or the applicant's representative prior to patent issuance.<sup>132</sup> The

127. CANADIAN INTELL. PROP. OFF., GOV'T OF CANADA, MANUAL OF PATENT OFFICE PRACTICE (MOPOP) § 12.04.01 (Oct. 2019), [https://manuels-manuals.opic-cipo.gc.ca/w/ic/MOPOP-en#!fragment/zoupio-\\_Toc21981080/BQCwhgziBcwMYgK4DsDWszIQewE4BUBTADwBdoAvbRABwEts-BaAfX2zgCYBGATgA4uABj6CAIABpk2UoQgBFRIVwBPAAHI14iHFzYAN-noDCSNNACEyLYTC4ECpao1WbCAMp5SAIVUAIKIAMn4Aa-gCCAHKGfuKkYABG0KTsoqJAA](https://manuels-manuals.opic-cipo.gc.ca/w/ic/MOPOP-en#!fragment/zoupio-_Toc21981080/BQCwhgziBcwMYgK4DsDWszIQewE4BUBTADwBdoAvbRABwEts-BaAfX2zgCYBGATgA4uABj6CAIABpk2UoQgBFRIVwBPAAHI14iHFzYAN-noDCSNNACEyLYTC4ECpao1WbCAMp5SAIVUAIKIAMn4Aa-gCCAHKGfuKkYABG0KTsoqJAA) (“Section 85 of the Patent Rules provides that where an examiner ‘has reasonable grounds to believe that an application for a patent disclosing the same invention has been filed, in or for any country other than Canada, by an inventor of that invention or a person claiming through them’, the examiner may by notice requisition the applicant to provide any of the following information, a copy of any related document and/or a translation into English or French of all or part of any related document not in one of those languages: a. an identification of any prior art cited in respect of the foreign application; b. the foreign application numbers, filing dates and, if granted, the patent numbers; and c. particulars of, any opposition, re-examination, impeachment or similar proceedings.”); see also Anthony Prenol & Brett Slaney, *Canada: Patents 2020*, ICLG.COM § 5.2 (Sept. 15, 2019), <https://iclg.com/practice-areas/patents-laws-and-regulations/canada>.

128. Prenol & Slaney, *supra* note 127; JPO Examination Guidelines, *supra* note 99, at 2.

129. Erstling, *supra* note 19, at 356-57; see generally Manish Kumar, *India: Information Disclosure of Foreign Applications*, MONDAQ ADVICE CTR. (Aug. 14, 2019), <http://www.mondaq.com/india/x/836654/Patent/Information+Disclosure+Of+Foreign+Applications>.

130. Kumar, *supra* note 129.

131. JPO Examination Guidelines, *supra* note 99; Erstling, *supra* note 19, at 352.

132. JPO Examination Guidelines, *supra* note 99.

Australian obligation was absolute; it did not depend on the materiality of the search results.<sup>133</sup> In addition, as in the United States, the penalties for noncompliance were significant: “The penalty for failure to comply was removal of the patentee’s ability to amend a granted patent to avoid a novelty- or obviousness-type objection based on prior art of the sort that should have been disclosed.”<sup>134</sup>

In 2007, the Australian Parliament again amended the Patents Act to abandon the duty to disclose for all applications for which examination had not been requested prior to October 22, 2007.<sup>135</sup> IP Australia, the Australian administrative equivalent to the PTO, noted that consensus comments indicated that the “existing search result disclosure provisions were onerous and costly for applicants” and that doubts were raised regarding the value or benefits of the disclosure requirements.<sup>136</sup> Formally, however, IP Australia noted that the primary motivation for the change was improved electronic availability of patent search reports from patent offices in other countries.<sup>137</sup> Regardless of its motivations, the Australian Parliament ultimately decided that a disclosure obligation was unnecessary for the effective and efficient review of patent applications.<sup>138</sup>

### III. THE LEGAL PROBLEM

The high-level comparison of the disclosure requirements presented in the previous section illustrates the lack of global consensus regarding the optimal approach to prior art disclosure obligations. This Note explores the questions of whether the U.S. requirement for mandatory disclosure of known material information is an efficient and effective use of societal resources generally and whether these requirements impose additional burdens in the context of the employee-inventor and corporate-applicant.

This Note asserts that the U.S. patent system’s disclosure obligation (as currently embodied by 37 C.F.R. § 1.56)<sup>139</sup> and the inequitable

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133. Bicknell, *supra* note 17, at 458-59.

134. Erstling, *supra* note 19, at 352.

135. IP AUSTRALIA, CHANGES TO REGULATIONS MADE UNDER SECTIONS 27(1), 45(3) AND 101D OF THE *PATENTS ACT 1990*, at § 1.2.1 (Oct. 18, 2007).

136. Donald Zuhn, *IP Australia Lifts Requirement to Submit Documentary Searches*, PATENT DOCS (Oct. 25, 2007), <https://www.patentdocs.org/2007/10/ip-australia-li.html> (describing feedback IP Australia received in response to its position paper dated May 16, 2007).

137. Erstling, *supra* note 19, at 353 (citing AUSTRALIAN GOVERNMENT, IP AUSTRALIA, CONSULTATION PAPER: REMOVAL OF THE OBLIGATION TO LODGE SEARCH RESULTS UNDER SUBSECTION 45(3) AND SECTION 101D OF PATENTS ACT 1990 2 (May 2007)).

138. Erstling, *supra* note 19, at 353.

139. 37 C.F.R. § 1.56.

conduct defense (as concretely defined by *Therasense*)<sup>140</sup> do not further Congress's constitutional mandate to promote progress in science and the useful arts. Instead, the requirements overly burden inventors, patent practitioners, patent examiners, patent applicants, and the courts while simultaneously not fully preventing fraudulent procurement of patents. Furthermore, the imposition of a mandatory disclosure duty on *inventors*, rather than applicants, creates additional burdens and introduces uncertainty for corporate patent applicants that own patent applications that name former employees as inventors.

#### IV. ANALYSIS

##### *A. Mandatory disclosure obligations under 37 C.F.R. § 1.56 fail to effectively and efficiently use societal resources to promote consistent outcomes for patentees*

An inherent tension exists between the societal benefits of inventors teaching their inventions to the public and the societal costs of providing a limited monopoly to patentees.<sup>141</sup> This tension is apparent when considering optimization of rules for mandatory disclosure. On one hand, the fair award of patents to worthy inventors has promoted progress in science and the useful arts,<sup>142</sup> and an excessively burdensome patent system may discourage potential patent applicants. Furthermore, a patent is a significant public sacrifice that should be only be granted if the invention taught by the inventor is worthy of a government-granted monopoly.<sup>143</sup> Mandatory disclosure requirements and the inequitable conduct defense are designed to protect the public against the award of patents sought with fraudulent means. However, imposition of disclosure duties should not be so burdensome that their societal costs outweigh their benefits.

To simultaneously encourage inventors to publicly teach their inventions and prevent granting of fraudulent patents, a patent system can promote progress of science and the useful arts by effectively and

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140. *Therasense, Inc.*, 649 F.3d at 1285-95.

141. See THE WRITINGS OF THOMAS JEFFERSON (Andrew A. Lipscomb & Albert Ellery Bergh eds., 1905), [http://press-pubs.uchicago.edu/founders/documents/a1\\_8\\_8s12.html](http://press-pubs.uchicago.edu/founders/documents/a1_8_8s12.html) (last visited Jan. 31, 2019) [hereinafter Jefferson].

142. Erik S. Maurer, *An Economic Justification for A Broad Interpretation of Patentable Subject Matter*, 95 NW. U. L. REV. 1057, 1071 (2001) ("Economists now generally accept that, in one form or another, the 'missing element' of our nation's economic growth is the intangible product of knowledge and innovation.").

143. Jefferson, *supra* note 141. ("Considering the exclusive right to invention as given not of natural right, but for the benefit of society, I know well the difficulty of drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not.").

efficiently making the most relevant prior art available to patent examiners. Requiring mandatory disclosure of material information arguably is neither effective nor efficient. First, the current disclosure rule is excessively burdensome and is not an *efficient* use of society's resources when viewed holistically. Second, the lack of adoption of similar regulations by other countries indicates that the U.S. disclosure rule is not necessary to an *effective* patent process and may be detrimental.

*1. The mandatory disclosure requirement and "atomic bomb" of the inequitable conduct defense inefficiently burden society, with particular burdens placed on courts, examiners, and applicants*

The mandatory disclosure requirement and the "atomic bomb" of the inequitable conduct defense are not efficient uses of societal resources.<sup>144</sup> This combination burdens courts, examiners, and applicants.<sup>145</sup> Furthermore, the burdens are allocated (ironically) inequitably: the disclosure obligations of 37 C.F.R. § 1.56 create traps for the innocent unwary inventor and corporate patent applicant while *Therasense* simultaneously provides a "roadmap" for the devious knowledgeable patentee to avoid such pitfalls.<sup>146</sup> These effects burden innovation by increasing uncertainty in the patent system and by increasing costs for patent prosecution and litigation.

First, courts are burdened by the additional time spent addressing a typically unsuccessful or unnecessary patent defense.<sup>147</sup> The attractiveness of invalidating an entire patent, rather than just a single claim, and the potential for expansion of discovery have strong allure to defendants.<sup>148</sup> So, inequitable conduct is a frequent defense to patent infringement, which puts a large burden on the courts, or an "absolute plague" in the words of Federal Circuit Court Judge Nichols.<sup>149</sup> The severity of

144. See *Aventis Pharma S.A.*, 525 F.3d at 1349.

145. See *id.* at 1349-50 (explaining that "[t]he allegation of inequitable conduct opens new avenues of discovery; impugns the integrity of the patentee, its counsel, and the patent itself; excludes the prosecuting attorney from trial participation . . . ; and even offers the trial court a way to dispose of a case without the rigors of claim construction and other complex patent doctrines") (Rader, J., dissenting).

146. Mark & Anenson, *supra* note 120, at 385 (arguing that the rigid *Therasense* requirements "create a roadmap to success for dishonest patent applicants and thus encourage misconduct").

147. Lee Petherbridge, et al., *Unenforceability*, 70 WASH. & LEE L. REV. 1751, 1754-55 (2013); see also Eric E. Johnson, *The Case for Eliminating Patent Law's Inequitable Conduct Defense*, 117 COLUM. L. REV. 1, 2-3 (2017).

148. *Therasense, Inc.*, 649 F.3d at 1287-88.

149. *Burlington Industries, Inc.*, 849 F.2d at 1422 ("[T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague.").

the “atomic bomb” of patent invalidation as a remedy for breach of the duty of disclosure incentivizes accused infringers to burden the courts by excessively raising this defense.<sup>150</sup> One study found that 21-40% of Answers in patent infringement cases from 2000 to 2014 included a reference to inequitable conduct.<sup>151</sup> However, the inequitable conduct defense is rarely successful. A separate study found that only ninety-five patents had been successfully rendered unenforceable with this defense for the thirty-five-year period from 1976 to 2010.<sup>152</sup> Other studies have found that the success rate for the defense is 9% post-*Therasense* and the success rate for cases appealed to the Federal Circuit and arguing the defense is approximately 20%.<sup>153</sup>

Even when the defense is successful, the ruling is frequently accompanied by a finding that at least some claims of the patent are invalid.<sup>154</sup> In nearly half of cases where courts found inequitable conduct, they also ruled upon validity and 89% of those cases also held the patent to be invalid.<sup>155</sup> This has led some to argue that the inequitable conduct defense is redundant with invalidity defense.<sup>156</sup> This correlation does not render the inequitable conduct defense wholly redundant, however. A successful invalidity defense only renders an individual claim unenforceable whereas a successful inequitable conduct defense renders invalid an entire patent or even an entire family of patents.<sup>157</sup> Importantly though, the significant correlation between these defenses reduces the benefit of the inequitable conduct defense in protecting society from the effects of fraudulently obtained patents. Thus, the current U.S. disclosure and enforcement approach provides a low percentage of successful inequitable conduct defenses and a relatively strong correlation between successful inequitable conduct defenses and successful invalidity defenses. These observations raise the question of whether the deterrent

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150. *Aventis Pharma S.A.*, 525 F.3d at 1349-50.

151. Jason Rantanen & Lee Petherbridge, *Inequitable Conduct and Patent Misuse*, 16-09 U. OF IOWA, LEGAL STUDIES RESEARCH PAPER 1, 18-19 (Mar. 2016) [hereinafter Rantanen & Petherbridge, *Inequitable Conduct*].

152. Petherbridge et al., *supra* note 147, at 1762.

153. Rantanen & Petherbridge, *Inequitable Conduct*, *supra* note 151, at 23-25 (citing a study that found the post-*Therasense* success rate through April 10, 2013 was 9% (6/64) in district courts and three studies reporting success rates of 21%, 22%, and 22% at the Federal Circuit).

154. Rantanen & Petherbridge, *Inequitable Conduct*, *supra* note 151, at 12.

155. Katherine Nolan-Stevaux, *Inequitable Conduct Claims in the 21<sup>st</sup> Century: Combating the Plague*, 20 BERKELEY TECH. L.J. 147, 163 (2005) (finding that in cases where inequitable conduct is successfully argued, the courts simultaneously evaluated invalidity in approximately half of those cases and held at least some claims to be invalid in 89% of such cases).

156. Rantanen & Petherbridge, *Inequitable Conduct*, *supra* note 151, at 12.

157. *See Therasense, Inc.*, 649 F.3d at 1292.

effects of these policies are necessary to limit inequitable conduct. In other words, is the sole reason that the inequitable defense is typically unsuccessful because of the strong deterrent effects of the U.S. mandatory disclosure requirement and the inequitable conduct defense? This question will be addressed in the next section.<sup>158</sup>

The burden of the inequitable conduct defense is not limited to the courts. In addition, patent examiners are burdened by a requirement that they review all cited art.<sup>159</sup> In 2012, the average number of references cited per application was forty-three.<sup>160</sup> However, eight percent of patent applications had more than 100 references cited, and that percentage had nearly tripled relative to the number only five years earlier.<sup>161</sup> Despite these significant numbers of cited references, “patent examiners rarely use applicant-submitted art in their rejections to narrow patents, relying almost exclusively on prior art they find themselves.”<sup>162</sup> For comparison, Japan also has a disclosure requirement, but Japan’s lesser penalty for failure to disclose reduces the incentive for overwhelming the patent examiner with precautionary disclosure of prior art of marginal relevance.<sup>163</sup>

Finally, the current system burdens patent counsel, applicants, and inventors. Collecting and reporting information requires significant amounts of time from patent counsel, applicants, and inventors. This burden is made more substantial in light of the extra care that must be taken to avoid the potential drastic consequences resulting from misinterpretation of an innocent oversight as intentional misconduct. These potential consequences include the invalidation of an entire patent

158. See *infra* Section IV.A.2.

159. MPEP, *supra* note 6, § 707.05 (“The examiner must consider all the prior art references . . . cited in the application or reexamination, including those cited by the applicant in a properly submitted Information Disclosure Statement.”); see also *id.* at § 609.05(b) (“The information contained in information disclosure statements which comply with both the content [and timing] requirements . . . will be considered by the examiner. Consideration by the examiner . . . means that the examiner will consider the documents in the same manner as other documents in Office search files are considered by the examiner while conducting a search of the prior art in a proper field of search.”).

160. Dennis Crouch, *Citing Patent References*, PATENTLY-O (Jan. 10, 2013, 7:24 AM), <http://www.patentlyo.com/patent/2013/01/citingreferences.html>.

161. *Id.*

162. Christopher A. Cotropia, Mark A. Lemley & Bhaven Sampat, *Do applicant patent citations matter?*, 42 RES. POL’Y 844, 844 (2013).

163. Compare 37 C.F.R. § 1.56, and *Therasense, Inc.*, 649 F.3d at 1288 (a patent is unenforceable if an inventor or person substantively involved in preparation or prosecution of the patent fails to disclose to the U.S. PTO known information that is material to patentability of any claim of the patent), with JPO Examination Guidelines, *supra* note 99, at 2 (after providing Applicant with both notice and an opportunity to disclose known prior art, a Japanese examiner may reject an application, but a failure to disclose known prior art cannot be used to invalidate a granted patent).



family and the potential for reputational damage to the prosecuting patent counsel who are tarred with the accusation of inequitable conduct.

Thus, the current mandatory disclosure system imposes significant burdens on the courts, examiners, patent counsel, applicants, and inventors. These burdens would be justified if balanced by appropriate benefits. However, I could identify no evidence that the significant burden is outweighed by the arguably negligible value the inequitable conduct defense provides in protecting against fraudulent prosecution based on violation of disclosure requirements. The examination process may even be hampered by excessive disclosure of a long but incomplete list of disclosed references as discussed further in the next section.<sup>164</sup>

*2. Mandatory disclosure obligations and harsh compliance penalties are not necessary to punish fraudulent intent or to enable effective examination*

Abandoning the mandatory disclosure obligation for publicly available information would improve the U.S. patent system.<sup>165</sup> Alternate disincentives to patent fraud already exist within the U.S. patent system in the form of an unclean hands defense and post-grant review procedures. In addition, given modern electronic search tools for publicly available information, it is unclear that disclosure of publicly available information provides any substantial benefit to improving the quality of patent examination.

The doctrine of unclean hands persists as its own distinct remedy for cases of fraud on the courts or on the PTO.<sup>166</sup> This doctrine provides, for example, an equitable defense based on a false statement in the inventor's oath or declaration.<sup>167</sup> This oath thus provides some protection against fraudulently obtained patents by permitting an accused infringer an affirmative defense of unclean hands if a patent application is knowingly pursued in extreme cases of bad faith.<sup>168</sup> The unclean hands defense does not provide 100% protection against fraudulently obtained

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164. See van Pottelsberghe de la Potterie, *supra* note 120, at 20.

165. The obligation to disclose non-public information, such as prior sales, is still warranted since the examiner will not have access to such information even if she is familiar with the prior art.

166. *Therasense, Inc.*, 649 F.3d at 1287.

167. See MPEP, *supra* note 6, at § 602.01(a). The inventor's oath or declaration must include a statement by each named inventor that "such individual believes himself or herself to be the original inventor or an original joint inventor of a claimed invention in the application." *Id.* Limited exceptions exist, as described in more detail in MPEP, *supra* note 6, at § 602.01(a). *Id.*

168. See, e.g., *Intellect Wireless, Inc. v. HTC Corp.*, 732 F.3d 1339, 1341-44 (Fed. Cir. 2013) (finding a patent unenforceable due to the inequitable conduct of submitting a false declaration).

patents, but neither does the inequitable conduct defense. As the inequitable conduct defense continues to be further clarified, as it was in *Therasense*, the rules can predictably be gamed by those true bad actors who endeavor to become knowledgeable in patent law.<sup>169</sup> For such actors, the inequitable conduct defense may thus lose its deterrent effect.<sup>170</sup>

In addition to not providing a deterrent effect to knowledgeable bad actors, the disclosure requirement may not help examiners thoroughly review a patent application. The disclosure of a large number of prior art references creates a selection bias in the materials to be reviewed by examiners.<sup>171</sup> If distracted by large numbers of references already reviewed by patent counsel while drafting the application, examiners may fail to recognize a different perspective on the disclosed invention due to selection bias and therefore fail to perform a fully independent search that would identify art that is more closely related to the claimed invention.<sup>172</sup> Since evaluation of an examiner's job performance depends in part on the number of applications examined within an evaluation period, an examiner effectively has a fixed amount of time to examine an average application.<sup>173</sup> That time averages only nineteen hours per application for review of the application, review of the prior art, drafting of Office Actions, and review and evaluation of amendments from the patent applicant.<sup>174</sup> Since examiners are required to consider all disclosed information,<sup>175</sup> an applicant may overload an examiner with hundreds of references and thus effectively apply time pressure to encourage the examiner to limit her own independent search and thus to review an application less thoroughly for novelty and obviousness.<sup>176</sup> This effective reduction in time to review an application can result in a significantly higher grant rate due to improper allowance of patent applications.<sup>177</sup> Additionally, prior art disclosed by the applicant and inventor

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169. See Mark & Anenson, *supra* note 120, at 386.

170. See *id.*

171. See *id.* at 372-73 (“[A]pplicants often attempt to negate the [inequitable conduct] defense by providing the PTO with voluminous prior art references—many of which are inconsequential or unavailing.”); see also *id.* at n.74 (“[P]atent applicants [attempt] to ‘bury’ examiners with hundreds of references so as to distract them from highly relevant references.”).

172. *Id.* at 386.

173. See, e.g., Josh Landau, *Granted in 19 Hours*, PATENT PROGRESS (Mar. 6, 2018), <https://www.patentprogress.org/2018/03/06/granted-19-hours/>.

174. *Id.*

175. See MPEP, *supra* note 6, at § 707.05.

176. van Pottelsberghe de la Potterie, *supra* note 120, at 20.

177. See Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?: Evidence from Micro-Level Application Data* 17, 39 (Nat'l Bureau of Econ. Res., Working Paper No. 20337, 2014), <https://www.nber.org/papers/w20337> (finding that more experienced patent examiners

may not include key technical references that would be more directly related to patentability and that would be identified with a more thorough search.<sup>178</sup>

Even if a patent is improperly issued, there are other mechanisms in place that allow correction. Historically, supporters of the U.S. disclosure system noted that a key reason for requiring disclosure in the United States but not in Europe was because Europe had a more efficient and robust post-grant review process.<sup>179</sup> Through these post-grant oppositions, the EPO improves patent quality by allowing third parties to introduce facts and arguments to attack patent validity.<sup>180</sup> The AIA implemented a more accessible post-grant review process “in the likeness of European oppositions.”<sup>181</sup> Although there are notable differences between the two systems, the AIA post-grant review process further mitigates against improperly issued patents by adding an additional layer of protection and providing “a faster, less expensive alternative to patent litigation.”<sup>182</sup>

By thus evaluating the alternatives to the harsh inequitable conduct defense and the mandatory disclosure rules, we can determine that these rules are not required in order to have an effective and efficient patent system. Many of the litigation benefits of the inequitable conduct can be served by the inventor’s oath and the unclean hands defense. It is unclear whether patent examiners benefit or are harmed by the disclosure requirement because they must spend time reviewing the cited art, most of which is only marginally relevant and not used in Office Actions. Finally, the AIA has enhanced the methods available for affected parties to invalidate improperly granted patents. For these reasons, limiting the mandatory disclosure obligation to *non-publicly* available information or removing the harsh penalty associated with the inequitable conduct defense would improve the U.S. patent system.

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granted patent applications in 19% more cases than inexperienced examiners, or an increase of nearly 28% relative to the rate for inexperienced examiners, and attributing nearly all of this difference to a reduction in the time allocated for examination of applications by experienced examiners: “if all examiners were allocated as many hours as are extended to [inexperienced] examiners, the Patent Office’s overall grant rate would fall by roughly 14 percentage points, or nearly 20 percent.”)

178. van Pottelsberghe de la Potterie, *supra* note 120, at 20.

179. *See, e.g.*, Erstling, *supra* note 19, at 360-61.

180. De Corte et al., *supra* note 122, at 99.

181. *Id.* at 138.

182. *Id.* at 143 (noting that these benefits will occur despite notable differences between the U.S. post-grant reviews and European oppositions).

*B. Disclosure requirements for inventors create significant burdens and potential conflicts for corporate patent applicants following termination of the employer-employee relationship*

Even if mandatory disclosure of prior art would be beneficial, the implementation in U.S. regulations creates undue burdens on corporate patent applicants due to their focus on individuals, rather than the applicant. By enacting the AIA, Congress recognized that the true party-in-interest for a patent application is typically the corporation to which a patent application has been assigned by employee-inventors.<sup>183</sup> The AIA allowed applicant-assignees certain rights in prosecuting patent applications as patent applicants.<sup>184</sup> However, Congress did not modify the disclosure obligation for inventors.<sup>185</sup> So, although an applicant (e.g., an assignee corporation) may prosecute the patent application, it must rely upon the inventor(s) to disclose known material information. Such an obligation is reasonable if there is an agency relationship between the applicant and the inventors, but it creates misaligned incentives if there is no such relationship.

For example, consider an employee-inventor who is fired by or otherwise upset with a corporate patent applicant. Such a disgruntled inventor may feel little motivation to disclose prior art that she subsequently discovers. In extreme cases, devious inventors may even be motivated to seek out and conceal material information. Fundamentally, there is a significant misalignment of incentives. The corporate patentee may subsequently rely heavily on the validity of a patent as it invests millions of dollars in development and commercialization of a patented invention based on the expectation of a patent monopoly. This patent monopoly is a cornerstone of the bargain between the patentee and the government and provides consideration in exchange for the applicant's

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183. Leahy-Smith America Invents Act, *supra* note 21, at § 4(b)(1) at 296 (amending 35 U.S.C. § 118 to read, in part, "A person to whom the inventor has assigned or is under an obligation to assign the invention may make an application for patent."); *see also* MPEP, *supra* note 6, at § 605 ("Effective September 16, 2012, the Office revised the rules of practice to permit a person to whom the inventor has assigned or is under an obligation to assign an invention to file and prosecute an application for patent as the applicant, and to permit a person who otherwise shows sufficient proprietary interest in the matter to file and prosecute an application for patent as the applicant on behalf of the inventor. . . . For [patent] applications filed before September 16, 2012, a person to whom the inventor assigned an invention could file and prosecute an application for patent, but the inventor is considered the applicant.")

184. Leahy-Smith America Invents Act, *supra* note 21, at § 4(b)(1) at 296.

185. *See* 37 C.F.R. §§ 1.56(a), (c) (requiring disclosure of material information by *inventors*, among others).

disclosure of a patentable invention.<sup>186</sup> On the other hand, the inventor who is now a former employee may receive no further compensation from the corporation based on whether the patent issues. Furthermore, the inventor may go to work for a competitor of the corporation and may be under a confidentiality obligation not to disclose certain material data that she discovers as the result of her new employment. Such confidential information may still be material information if, for example, it contradicts a statement on the record or disproves that an embodiment is enabled. This misalignment of incentives and potential for conflicts creates a danger of invalidation of otherwise legitimate patents.

The courts have recognized the potential for such misaligned incentives in their development of the assignor estoppel doctrine. Assignor estoppel prevents an assignee from challenging the validity of patents as a defense to an infringement action against the assignee or against a party in privity with assignee.<sup>187</sup> The courts developed this doctrine to deny an assignor the opportunity to obtain consideration in exchange for patent rights and subsequently allege that those patent rights have no value, thus retaining the right to make and sell the claimed invention.<sup>188</sup> Such double dipping by assignor was viewed as a violation of the assignor's duty of fair dealing that is a fundamental aspect of contract law.<sup>189</sup> Therefore, an inventor is estopped from presenting an invalidity defense if she is sued for patent infringement subsequent to her patent assignment.<sup>190</sup> So, an employee-inventor would likely be prevented from personally practicing a claimed invention that was invalidated because of her misconduct.

The employee-inventor could, however, enable an inequitable conduct defense for a third party. Under the current system, an employee-inventor typically assigns title to a patented invention to her corporate employer but she still may effectively control whether that patent has any value based on her compliance with her disclosure obligation.<sup>191</sup>

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186. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 10-11 (1966) (“[T]he underlying policy of the patent system [is] that ‘the things which are worth to the public the embarrassment of an exclusive patent,’ . . . must outweigh the restrictive effect of the limited patent monopoly.”) (quoting Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in VI WRITINGS OF THOMAS JEFFERSON 181 (H. Washington ed.)).

187. *See Diamond Scientific Co. v. Ambico, Inc.*, 848 F.2d 1220, 1224-25 (Fed. Cir. 1988).

188. *See id.* at 1224; *see generally Westinghouse Electric & Mfg. Co. v. Formica Insulation Co.*, 266 U.S. 342 (1924).

189. *Westinghouse Elec. & Mfg. Co.*, 266 U.S. at 350 (“[F]air dealing should prevent [patent assignor] from derogating from the title he has assigned, just as it estops a grantor of a deed of land from impeaching the effect of his solemn act as against his grantee.”).

190. *Id.*

191. *See supra* Section IV.B.

This is analogous to permitting a car dealer to retain a self-destruct button for a car after the purchaser leaves the lot. Alternatively, in Judge Rader's vernacular, it is equivalent to allowing a former disgruntled employee to hold the nuclear button to an "atomic bomb" attached to a corporate patent.<sup>192</sup> Thus, this misalignment of incentives unnecessarily introduces uncertainty surrounding enforceability, thereby reducing the value of granted patents.

To limit intentional bad faith acts by former employees and to encourage compliance with the disclosure obligation, best practices require employees to sign agreements that obligate them to provide additional lawful assistance to fully realize the patent rights of their inventions and these obligations typically persist despite termination of employment.<sup>193</sup> However, the ability of a corporate applicant to pursue remedies for breach of a contractual obligation with a former employee may be little consolation when viewed relative to potential patent damages of hundreds of millions of dollars.

Thus, in addition to the general problems with the disclosure obligation as described in the previous section, the disclosure obligation as expressed by 37 C.F.R. § 1.56(a) creates problems for corporate patent applicants who no longer have an agency relationship with a former employee-inventor. This problem is not created in most other countries that have a duty of disclosure because the focus of the duty is on the applicant instead of the individual whereas the disclosure obligation for the United States specifically identifies the inventor and other individuals.

## V. PROPOSAL

The mandatory disclosure rules should be modified to remove the requirement to disclose publicly available documents. Mandatory disclosure of such documents is an inefficient and ineffective means of promoting progress of science and the useful arts. Alternatively, if a disclosure obligation remains for publicly available documents, it should be modified in two ways. First, the PTO should not require disclosure of U.S. patents and published U.S. patent applications. Second, for patents prosecuted by an employer-assignee, the mandatory disclosure obligation of the employee-inventor should be limited to the duration of the inventor's agency relationship with the corporate employer-assignee. With these changes, the U.S. patent system will more effectively fulfill

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192. *Aventis Pharma S.A.*, 525 F.3d at 1349 (Rader, J., dissenting).

193. See, e.g., PRAC. L. LAB. & EMP. & PRAC. L. INTELL. PROP. & TECH., EMPLOYEE CONFIDENTIALITY AND PROPRIETARY RIGHTS AGREEMENT § 2, Westlaw 6-501-1547, [https://www.westlaw.com/6-501-1547?view=hidealldraftingnotes&transitionType=Default&contextData=\(sc.Default\)&VR=3.0&RS=cblt1.0](https://www.westlaw.com/6-501-1547?view=hidealldraftingnotes&transitionType=Default&contextData=(sc.Default)&VR=3.0&RS=cblt1.0) (last visited Apr. 14, 2020).

its constitutional mandate “[t]o promote the Progress of Science and useful Arts.”<sup>194</sup>

Even if the disclosure requirement were completely effective in eliminating all fraud on the PTO, it is important to assess both the costs and the benefits of the mandatory disclosure obligation. Means directed to laudable goals may be pragmatically rejected if the costs outweigh the benefits. The excessive burdens of disclosure noted by comments to IP Australia are also applicable for the U.S. system.<sup>195</sup> Just as the Australian Parliament chose to abandon its disclosure obligation because the information it was requesting was publicly accessible,<sup>196</sup> the United States should abandon its disclosure requirement, at least to the extent that it requires disclosure of publicly available references, such as published patent applications, patents, and technical journal articles. Examiners are well positioned to find such materials if provided with effective modern search tools.<sup>197</sup> Removal of the disclosure obligations for all public information would result in savings for patentees due to reduced hours spent by inventors and attorneys for identifying, tracking, and reporting prior art references. Preparing and filing invention disclosure statements (“IDS”) can cost hundreds of dollars each.<sup>198</sup> Additionally, there may be significant time spent by inventors and others involved in patent prosecution in collecting references to be reported to patent counsel. A portion or the entirety of the average amount saved could be directed to increased patent filing fees. Thus, the money that would otherwise be spent by applicants in preparing and filing disclosures could be repurposed to provide examiners with (1) additional time for reviewing applications and performing more comprehensive searches, (2) improved search tools, and (3) broader access to technical publications.

If the goal of the disclosure requirement is higher quality patent prosecution, the EPO’s experience is evidence that a mandatory

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194. U.S. CONST. art. I, § 8, cl. 8.

195. See Zuhn, *supra* note 136.

196. Erstling, *supra* note 19, at 353.

197. MPEP, *supra* note 6, at § 902.03(e) (“The automated search tools on examiners’ desktop computers include the Examiner’s Automated Search Tool (EAST), the Web-Based Examiner Search Tool (WEST), and the Foreign Patent Access System (FPAS).”); U.S. GOV’T ACCOUNTABILITY OFF., GAO-16-479, INTELLECTUAL PROPERTY: PATENT OFFICE SHOULD STRENGTHEN SEARCH CAPABILITIES AND BETTER MONITOR EXAMINERS’ WORK 9, 44 (June 2016) (noting that despite providing access “to 119 different journals or external databases[,] USPTO’s current search tools do not provide examiners with immediate access to computer-generated translations” and does not have a documented strategy for examiners to identify relevant nonpatent literature).

198. See, e.g., *Brown & Michaels Budget Estimator for Patents*, BROWN & MICHAELS, PC, <http://www.bpmlegal.com/patfees.html> (last visited Jan. 30, 2019) (quoting a price of \$350 simply for the preparation and submission of the IDS forms for up to a maximum of 20 references, not including any costs for review of the references or fees charged by the PTO).

disclosure obligation is not required for high quality examination.<sup>199</sup> As demonstrated by the European model, such public references are efficiently identified by examiners during comprehensive searches when examiners are not pre-directed towards certain art by submissions from the patent applicant.<sup>200</sup> Hiring more examiners based on a higher patent application fee would also be helpful in improving patent quality.

If, on the other hand, the goal of mandatory disclosure is to prevent fraudulent procurement of valid patents, it is unclear whether requiring disclosure is sufficient to stop such abuse or an efficient means of doing so. An inventor who would defraud the PTO by obtaining a patent with claims that she knows are invalid would likely be willing to take the extra step of defrauding the PTO by not disclosing an anticipatory patent reference so long as she has a “roadmap” to do so.<sup>201</sup>

In addition to removing the requirement to disclose publicly available information, the disclosure obligation should be revised to focus on employer-applicants and their current agents, rather than individuals. An employee-inventor's obligation to disclose should be modified to end when the employee-inventor's employment relationship ends. The persistent obligation to disclose material prior art for an employee-inventor creates misaligned incentives and has the potential to put the fate of small research corporations in the hands of disgruntled former employees.<sup>202</sup> This limitation should focus on the relationship between the employee and the employer, as distinguished from the assignor and assignee. Ownership of a patent application is too easily transferred to a parent or related corporate entity. So, it is more appropriate to maintain the disclosure obligation for the duration of the employment of the employee-inventor relationship. The effect of this modification to the disclosure rule would be to reduce the misaligned incentives between the corporate-assignee applicants and disgruntled former-employee inventors that exist under the current rules.

## VI. CONCLUSION

The mandatory disclosure rules provided in 37 C.F.R. § 1.56 and the inequitable conduct defense to patent infringement serve the laudable goal of reducing the fraudulent acquisition of enforceable patents. However, the costs of mandatory disclosure rules outweigh the incremental benefits of the ends. Modifications are warranted to enhance fairness, use societal resources more efficiently, and better promote progress in

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199. See van Pottelsberghe de la Potterie, *supra* note 120, at 20-21.

200. *Id.*

201. See Mark & Anenson, *supra* note 120.

202. See *supra* Section IV.B.



science and the useful arts. This Note recommends that these goals are best served by repealing the mandatory disclosure rules for publicly available references. However, in recognition that this may be politically infeasible, alternatively, (1) the mandatory disclosure requirement should exclude U.S. patents and published U.S. patent applications and (2) for patent applications in which a corporate employer is the applicant and its employees are the named inventors, disclosure should be required only from the employer-applicant and its current agents (including employees), and not from former employees, even if those former employees are named inventors.