

## ENSURING PROPER NOTICE: CLEARING THE FOG SURROUNDING VIRTUAL PATENT MARKING

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## I. INTRODUCTION

Consider an everyday product many consumers use with little, if any, thought regarding the packaging: a ketchup packet.<sup>1</sup> On the lid of the packet, in small print, Heinz has printed the words “U.S. Pat. Nos. D623,072; other Pats. Pending.”<sup>2</sup> Use of this language is typically referred to as “marking” a patented product.<sup>3</sup> While often overlooked, this marking language serves an important function: if Hunt’s Ketchup, for example, infringes on Heinz’s patent, Heinz will be able to collect damages without having to prove that Hunt’s had actual notice of the alleged infringement.<sup>4</sup> However, when the pending patents covering the product are granted, rejected, or abandoned, the marking language on the product will be inaccurate because there are no longer any patents pending. This creates a serious problem for Heinz.

If Heinz were to continue to use the lids as they read today, it could be liable for false marking, which carries a statutory penalty of up to \$500 per offense (or in other words, per falsely marked ketchup packet).<sup>5</sup> Additionally, for any later-issued patents that were not marked on the product, Heinz would be unable to accrue damages in an infringement action until it provided actual notice to the infringer.<sup>6</sup>

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1. Specifically, the Heinz Dip & Squeeze ketchup packet. For an example of the product design, see AMAZON, *Heinz Ketchup Dip & Squeeze Packets (0.95 oz Packets, Pack of 500)*, <https://www.amazon.com/dp/B00SW257AG> (last visited Aug. 22, 2020).

2. *Id.* (displaying this language in the picture of the ketchup packet).

3. See 7 DONALD S. CHISUM, CHISUM ON PATENTS § 20.03[7][c][iii] (2020) (discussing the general mechanics of patent marking).

4. See 35 U.S.C. § 287(a) (2013) (requiring that if a patent is not marked, “no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice”).

5. See 35 U.S.C. § 292(a) (2011) (“Whoever marks upon, or affixes to, or uses in advertising in connection with any article, the words . . . ‘patent pending,’ or any word importing that an application for patent has been made, when no application for patent has been made, or if made, is not pending, for the purpose of deceiving the public—Shall be fined not more than \$500 for every such offense.”). False marking is not a strict liability offense, so some evidence of an intent to deceive would be required. See *Clontech Laboratories, Inc. v. Invitrogen Corp.*, 406 F.3d 1347, 1352-53 (Fed. Cir. 2005) (“[I]n order to establish knowledge of falsity the plaintiff must show by a preponderance of the evidence that the party accused of false marking did not have a reasonable belief that the articles were properly marked (i.e., covered by a patent). Absent such proof of lack of reasonable belief, no liability under the statute ensues.”). Nonetheless, the specter of liability could still exist. See Corey McCaffrey, Note, *The Virtues of Virtual Marking in Patent Reform*, 105 NW. U. L. REV. 367, 369 (2011) (noting a recent increase in focus on false marking, exemplified by a sharp increase in the number of false marking claims in the year 2010).

6. See *Stryker Corp. v. Zimmer, Inc.*, 782 F.3d 649, 660 n.5 (Fed. Cir. 2015), *vacated on other grounds*, 136 S. Ct. 1923 (2016) (“[T]he statute is not so broad as to allow marking with a different patent—with different claims—to provide sufficient notice to the public. Rather, the plain language of the marking statute provides that the patented article be marked with the ‘number of *the* patent.’”); 35 U.S.C. § 287(a) (providing that

To avoid these issues, Heinz could redesign its lids to list all of the active patents and no longer include the “patent pending” language. However, this would almost certainly result in the additional cost of creating new lids, and would also not happen immediately;<sup>7</sup> presumably, Heinz would want to exhaust its existing inventory of lids before using the new, accurate lids. The doctrine of virtual marking seeks to solve this conundrum.

With virtual marking, instead of marking all of its products with a patent number as it does currently, Heinz could mark the packet with “Pat.” followed by a web address,<sup>8</sup> for example, “Pat. <http://kraftheinz.com/patents>.”<sup>9</sup> Using this webpage to provide the patent numbers for the ketchup packets would serve two benefits: first, it would allow Heinz to immediately update the page with a new patent number if a pending patent became allowed; and second, it would allow Heinz to quickly remove any expired patents or “patent pending” language so as to avoid liability for false marking.<sup>10</sup> Furthermore, use of a virtual marking website would eliminate the potential costs associated with changing the lids, assuming the web address of the page did not change.<sup>11</sup>

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for unmarked products, damages do not accrue until “the infringer [is] notified of the infringement and continue[s] to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice”).

7. See McCaffrey, *supra* note 5, at 375 (“Patents are dynamic: new patents are granted, existing patents expire, and a patent’s scope may change during its lifetime. Manufacturing, on the other hand, is typically static: manufacturing equipment is expensive to change, and individual products are not modified after production.”).

8. See § 287(a) (permitting patentees to mark products with “the abbreviation ‘pat.’ together with an address of a posting on the Internet, accessible to the public without charge for accessing the address, that associates the patented article with the number of the patent”).

9. Notably, KraftHeinz has earmarked this exact page for “virtual patent marking,” but no patent information is actually available on the page at the time of this piece. See KRAFTHEINZ, *The Kraft Heinz Company Virtual Patent Marking*, <https://www.kraftheinzcompany.com/patents.html> (last visited Aug. 20, 2020). Perhaps KraftHeinz is reluctant to deploy this page in any meaningful sense due to the lack of clarity regarding the virtual marking requirements. See *infra* Part III.

10. See McCaffrey, *supra* note 5, at 387-89 (“[I]f [a patentee] abandoned an application or the USPTO denied patent protection, then [the patentee] could immediately remove the application from the product page to avoid potential liability for false marking. With virtual marking, [the patentee] could make any necessary changes in real time without changing the manufacturing process of the physical device. . . . If the product page continued to list the patents and clearly noted that they had expired, then virtual marking would achieve the same public benefit that the court identified without raising any concern as to whether it constituted a false mark.”).

11. See *id.* at 389 (“If [the patentee] had created molds that read, ‘Patents: [virtual marking URL],’ it could have updated the site at virtually no cost, and no physical change to the lids or the manufacturing process would have been necessary.”).

Despite these seemingly clear benefits, patentees seem reluctant to employ virtual marking in place of traditional marking methods.<sup>12</sup> This could be due to lack of education and awareness, either of the availability of virtual marking altogether or of the specific requirements needed to conform with the marking statute.<sup>13</sup> Specifically, the marking statute requires that patentees who virtually mark their products include “the abbreviation ‘pat.’ together with an address of a posting on the Internet, accessible to the public without charge for accessing the address, that associates the patented article with the number of the patent.”<sup>14</sup> There is some ambiguity in this language. Two particular points of ambiguity are the terms “posting” and “associates.” Is a “posting” a single webpage or a website with multiple pages? What does it mean to “associate” a patented article with the number of the patent? Patentees may be more willing to mark their products virtually if these questions can be answered, and they can be more certain they are meeting the statutory requirements as a result.<sup>15</sup>

This article proposes interpretations for “posting” and “associates” that are consistent with the text and purpose of the statute, as well as notice requirements in other areas of the law. It also proposes an additional statutory requirement for patentees employing virtual marking. Part II argues that the history of the patent system, and patent marking specifically, should inform the interpretation of the ambiguous statutory terms. Part III outlines the particular issues caused by the ambiguity in the virtual marking requirements; specifically, that it is unclear what the boundary for a “posting” is, the extent to which downtime and modifications are permissible, and what it means to “associate” a product with a patent number. Part IV examines how

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12. See Gaetan de Rassenfosse, *Notice Failure Revisited: Evidence on the Use of Virtual Patent Marking* 16-17 (Nat'l Bureau of Econ. Research, Working Paper No. 24288, 2018), <https://www.nber.org/papers/w24288.pdf> (finding that approximately 12% of patent holders use virtual marking, and estimating that up to 25% of commercially active patentees use virtual marking); MICHELLE K. LEE, UNITED STATES PATENT AND TRADEMARK OFFICE, REPORT ON VIRTUAL MARKING 23 (2014), [https://www.uspto.gov/sites/default/files/aia\\_implementation/VMreport.pdf](https://www.uspto.gov/sites/default/files/aia_implementation/VMreport.pdf) (highlighting a comment that “virtual marking is not widely used”).

13. See LEE, *supra* note 12, at 23 (“The commenter proposed that the USPTO undertake an initiative to educate the public on how to use virtual marking and on the advantages of using this alternative. The commenter further suggested that increased knowledge and awareness of virtual marking may lead to more usage of virtual marking, thereby benefiting both patent owners and the public.”).

14. 35 U.S.C. § 287(a).

15. See *Mayo Collaborative Servs. v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 90 (2012) (expressing concern about “legal uncertainty” in the patent context); see also Anna S. Rominger, *Rethinking the Paradigm: Can the Wagner Act and Labor-Management Cooperation Coexist?*, 8 DEPAUL BUS. L.J. 159, 192 (1996) (“Companies need legal certainty in order to pursue their business goals in an efficient manner.”).

other areas of the law treat questions of digital notice and registration notice, and develops the common thread that notice is adequate when an observer could be reasonably expected to recognize the existence of a certain fact. Part V proposes that “posting” should be limited to a single webpage, that “associate” should mean to directly connect each patented product with each relevant patent number, and that the title of each patent be included along with the patent number. Part V further urges courts to adopt these interpretations, urges the United States Patent and Trademark Office (“USPTO”) to promulgate these interpretations in its guidance, and urges Congress to include the new language in the marking statute when it next revisits the patent system.

## II. THE HISTORY OF PATENT MARKING

This Part explains the basic history of the patent system and the patent marking requirements, as well as the background for the introduction of the virtual marking requirements. A clear definition should be consistent with the ultimate goals of the patent system, the marking requirements generally, and virtual marking specifically.<sup>16</sup> As a result, this history will illuminate the analysis of how to interpret the ambiguous statutory terms.

### A. ORIGINS OF PATENT MARKING

In the early years of the patent system, patentees were not required to mark their products; rather, patents were considered public records and the public was considered to be on notice of all patents.<sup>17</sup> However, Congress quickly became aware of the difficulties of such a requirement.<sup>18</sup> In the early nineteenth century, someone looking to learn which patents covered a certain product would have to travel by horseback to Washington, D.C., where the patents were stored in “shoebox form.”<sup>19</sup> This was further complicated by the fact that the singular patent office (and all of the patents) were destroyed in a fire

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16. See *Dolan v. U.S. Postal Serv.*, 546 U.S. 481, 486 (2006) (“Interpretation of a word or phrase depends upon reading the whole statutory text, considering the purpose and context of the statute, and consulting any precedents or authorities that inform the analysis.”).

17. *Boyden v. Burke*, 55 U.S. 575, 582 (1852) (“Patents are public records. All persons are bound to take notice of their contents, and consequently should have a right to obtain copies of them.”).

18. See Tim Hsieh, *The Adequacy of the Mark: Raising the Standard Under 35 U.S.C. § 287(a) for Patented Online Software Methods*, 48 IDEA: INTEL. PROP. L. REV. 69, 78 (2007) (discussing the “sheer inconvenience” of obtaining information about patents before the introduction of the marking requirement).

19. *Id.* (internal quotation marks omitted).

in 1836.<sup>20</sup> Understandably, Congress sought to introduce another way for the public to take notice of issued patents.<sup>21</sup>

The requirement that patented products be marked first originated with the Patent Act of 1842, which required that patentees mark their products with only the dates of their patents.<sup>22</sup> Under this Act, there was a statutory penalty of “not less than one hundred dollars” for failing to mark a product that was covered by a patent.<sup>23</sup> The Patent Act of 1861 replaced the statutory penalty with the requirement that exists today: that patentees may not recover damages unless the product employing the patent was marked.<sup>24</sup> In 1927, Congress altered the requirements so that patentees needed to mark the patent number on the product instead of the date of the patent.<sup>25</sup> In 1952, Congress allowed patentees to abbreviate “Patent” to “Pat.” on marked products.<sup>26</sup> This was the final revision prior to the enactment of the America Invents Act of 2011.<sup>27</sup>

At this point in the doctrine’s development, the Federal Circuit articulated the three main purposes of the marking requirements: “1) helping to avoid innocent infringement . . . 2) encouraging patentees to give notice to the public that the article is patented . . . and 3) aiding the public to identify whether an article is patented.”<sup>28</sup>

#### B. THE AMERICA INVENTS ACT AND THE ADDITION OF VIRTUAL MARKING

In 2011, Congress passed the America Invents Act, which introduced a number of revisions to the patent system, including the introduction of virtual marking.<sup>29</sup> “Virtual marking” was introduced primarily to lower costs for patentees, as well as to permit easier marking on smaller products.<sup>30</sup> The House Report for the Act also noted that “[c]onstructive notice is possible by ‘marking’ any patented

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20. *Id.*

21. *See id.* (“Realizing these problems, Congress imposed a duty to mark in the Patent Act of 1842 . . .”).

22. Eugene Goryunov & Mark Polyakov, *To Mark or Not to Mark: Application of the Patent Marking Statute to Websites and the Internet*, 14 RICH. J.L. & TECH. 2, 3 (2007).

23. *Id.* (quoting *Nike v. Walmart Stores, Inc.*, 138 F.3d 1437, 1443 (Fed. Cir. 1998)).

24. *See id.*; 35 U.S.C. § 287(a) (2013).

25. *See Goryunov & Polyakov, supra* note 22, at 3.

26. *Id.*

27. *See id.* (noting that “[t]he Patent Act of 1952 codified the Marking Statute as it exists today”; the piece was published in 2007).

28. *Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1443 (Fed. Cir. 1998).

29. *See generally* Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011).

30. *See* H.R. REP. NO. 112-98, at 52-53 (2011) (“This amendment will save costs for producers of products that include technology on which a patent issues after the product

article that the patent holder (or its licensee) makes, uses, sells or imports.”<sup>31</sup> Based on this language, we can understand virtual marking as a means for providing constructive notice. Noting that virtual marking appears to primarily benefit the patentee,<sup>32</sup> the primary focus should be the first two purposes of patent marking articulated in *Nike, Inc. v. Wal-Mart Stores, Inc.*<sup>33</sup> by the Federal Circuit: the constructive notice must be both sufficiently adequate to help members of the public avoid being innocent infringers and simple enough that patentees are encouraged to provide this notice.<sup>34</sup>

### III. AMBIGUITIES IN THE VIRTUAL MARKING STATUTE

Armed with the background and general framework within which the virtual marking requirements operate, we can begin to examine the issues with the specific ambiguous terms in the marking statute: “posting” and “associates.” As this Part illustrates, the term “posting” is unclear as to what exactly constitutes a posting, as well as to what extent downtime and modifications are permissible. The term “associates” is unclear as to what is required to connect a patented product with the patent number, as well as what, if any, limit should be placed on products covered by large numbers of patents. Later, Part V argues for interpretations that seek to resolve these issues.<sup>35</sup>

#### A. “POSTING”

The virtual marking statute provides that patentees may mark their products by “fixing thereon the word ‘patent’ or the abbreviation ‘pat.’ together with an address of a *posting* on the Internet . . . that associates the patented article with the number of the patent.”<sup>36</sup> Many patentees appear to believe “posting” means a single webpage,<sup>37</sup>

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is on the market, and will facilitate effective marking on smaller products.”); *see also* S. REP. NO. 111-18, at 14 (2009).

31. H.R. REP. NO. 112-98, at 52.

32. The primary benefits of patent virtual marking are to reduce costs and allow for easier marking of small products. *See id.* at 52-53. These benefits primarily work for patentees; members of the public are not substantially affected by this change—without virtual marking, they would still be able to see patent numbers on products.

33. 138 F.3d 1437 (Fed. Cir. 1998).

34. *See Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1443 (Fed. Cir. 1998).

35. *See infra* Part V.

36. 35 U.S.C. § 287(a) (2013) (emphasis added).

37. Many companies that use virtual marking seem to have reserved a specific webpage for their patented products, and this page is marked on their products. *See, e.g.*, Tivo, *Tivo Corp. Legal Center*, <https://business.tivo.com/about-us/licensing> (last visited Aug. 22, 2020); YETI, *Patents*, [https://www.yeti.com/en\\_US/patents.html](https://www.yeti.com/en_US/patents.html); LG, *Patent*, <https://www.lg.com/us/patent> (last visited Aug. 22, 2020); GENERAL MILLS, *Virtual Patent Marking*, <https://www.generalmills.com/pat> (last visited Aug. 22, 2020); LBP, *Patents*, <https://www.lbpmfg.com/patents/> (last visited Aug. 22, 2020).

and the United States Patent and Trademark Office (“USPTO”) seems to share this belief.<sup>38</sup> However, this view is not completely unchallenged.<sup>39</sup> In *National Products, Inc. v. Arkon Resources, Inc.*,<sup>40</sup> the parties disputed whether using the patentee’s primary website address, rather than a specific address for patents, was adequate notice to comply with the marking statute.<sup>41</sup> While the court declined to rule on the adequacy of notice in this case, the court did go out of its way to point out the difficulty of locating the patents page on the patentee’s website.<sup>42</sup>

One can understand why a company may want to direct visitors to its homepage rather than a page specifically for patents. Directing visitors to a homepage allows the patentee to advertise its product offerings, sales, and promotions, which the patentee may not be able to do on a specific page dedicated to patents. Additionally, the URL for the homepage would necessarily contain fewer characters than a longer URL for patents, so it could be easier to fit the homepage address on a smaller product. Finally, using the homepage could allow for more flexibility if, for example, the web developer changed its routing scheme for the website; the patentee would then not need to redesign its products with a different URL for patents. Further, as *National Products* illustrates, this is a real point of confusion for at least one patentee.<sup>43</sup> Given the variety of reasons why a patentee might wish to direct users to its homepage, the plaintiff in *National Products* is likely not alone either.

An additional issue raised by the term “posting” is the transience of webpages: specifically, that websites can be changed very easily,

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38. See LEE, *supra* note 12, at 14 (“Section 287(a) requires only that virtual marking Web pages be ‘accessible to the public without charge.’”); *cf.* 35 U.S.C. § 287(a) (requiring “a posting on the Internet, accessible to the public without charge”). While this interpretation was provided fairly informally in a report on virtual marking, a court might nevertheless offer it some deference when interpreting the statute. See *United States v. Mead Corp.*, 533 U.S. 218, 220 (2001) (noting that “an agency’s interpretation may merit some deference whatever its form, given the ‘specialized experience and broader investigations and information’ available to the agency”).

39. See *Nat’l Prods., Inc. v. Arkon Res., Inc.*, No. CV 18-02936 AG, 2019 WL 1034321, at \*16 (C.D. Cal. Jan. 9, 2019) (discussing a product which is marked with the patentee’s primary website URL as opposed to a specific page for patents).

40. No. CV 18-02936 AG, 2019 WL 1034321 (C.D. Cal. Jan. 9, 2019).

41. See *Nat’l Prods., Inc.*, 2019 WL 1034321, at \*16 (“The parties do not appear to dispute that . . . [the patentee] marks at least some of [its] products with the word ‘PATENTED’ and the URL of [the patentee’s homepage] . . . [and that] any person can access the website, but has to additionally navigate to a ‘Patents and Trademarks’ page of the website to see a listing of [the patentee]’s patents.”).

42. See *id.* (“Out of curiosity, the Court attempted to access the ‘Patents and Trademarks’ page from [the patentee]’s website’s home page, but did not find any links on the homepage that directly linked to such a webpage, which is apparently nested under the link ‘Legal.’”).

43. See *id.*

and are also prone to downtime (e.g., due to maintenance, errors, or attacks).<sup>44</sup> Traditional patent marking is governed by a “consistent and continuous” standard, meaning that a patentee must mark its products consistently and continuously to be in compliance with the marking requirements.<sup>45</sup> The inference is that this same standard would apply to virtually marked products as well,<sup>46</sup> but the statute does not fully define the requirements for patentees wishing to virtually mark.<sup>47</sup> Without someone litigating the issue, patentees may not know how much downtime is considered acceptable,<sup>48</sup> or what the permissible extent and frequency of modifications is.<sup>49</sup> Another way of framing these questions is to consider them through the lens of notice: is there a certain point where too much downtime or improper modifications cause notice to be inadequate?

In light of these issues, a clear definition of “posting” should indicate whether patentees must use a single webpage, or if a website with multiple pages is permissible. Additionally, it should provide some benchmark for enabling patentees to ensure they are not operating with too much downtime or making impermissible modifications. Part V provides an analysis and proposes a definition consistent with these goals.<sup>50</sup>

#### B. “ASSOCIATES”

The virtual marking statute provides that patentees may mark their products by “fixing thereon the word ‘patent’ or the abbreviation ‘pat.’ together with an address of a posting on the Internet . . . that

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44. See McCaffrey, *supra* note 5, at 395-96 (flagging potential issues with downtime and modifications of virtual marking sites).

45. Nike, Inc. v. Wal-Mart Stores, Inc., 138 F.3d 1437, 1446 (Fed. Cir. 1998) (“In order to satisfy the constructive notice provision of the marking statute, [the patentee] must . . . show[ ] that substantially all of the [products] being distributed were marked, and that once marking was begun, the marking was substantially consistent and continuous.”); see also McCaffrey, *supra* note 5, at 373-74 (“To recover under the marking statute, patentees must satisfy the requirement that marking be ‘consistent and continuous.’ Courts have developed this standard because § 287 does not expressly define what is required to comply with the marking statute.”).

46. See McCaffrey, *supra* note 5, at 374 (“If Congress amends § 287 to permit virtual marking, courts will have the challenge of determining what form of virtual marking complies with the consistent-and-continuous standard under the statute.”).

47. See 35 U.S.C. § 287(a) (2013) (listing no requirements for handling downtime on virtual marking sites or managing changes to a site’s marking information); McCaffrey, *supra* note 5, at 374 (noting that § 287 does not fully define the marking requirements for patentees).

48. See McCaffrey, *supra* note 5, at 396 (noting that downtime “could be a violation of the ‘continuous’ element of the compliance standard,” but also that “[a] certain amount of downtime may be acceptable”).

49. See *id.* (“One issue is how much modification, in form or content, is permissible under the ‘consistent’ element of the compliance standard.”).

50. See *infra* Part V.

associates the patented article with the number of the patent.”<sup>51</sup> Unlike physical products, there are no space constraints on a virtual marking webpage.<sup>52</sup> Theoretically, a user could list hundreds of patents and be in compliance with the marking requirements.<sup>53</sup> According to one commentator, this is not adequate notice.<sup>54</sup> For example, LG’s virtual marking page lists 626 patents for a single product, the “Optim G E970,” with large numbers of patents for other products as well.<sup>55</sup> One can imagine that it may be difficult for a potential infringer to effectively evaluate its product against a list of that size.

Additionally, some patentees who virtually mark their products do not distinguish among their product offerings, but instead list all patents they own.<sup>56</sup> The one district court to face this issue held this method of marking to be inadequate notice,<sup>57</sup> but without an appellate determination, other patentees may continue to organize their sites in this manner. In fact, many patent owners who are using virtual marking are “associating” their products with patent numbers in different ways.<sup>58</sup> Wherever the line is drawn, it seems unlikely that every implementation of a virtual marking site will sufficiently associate a product with its patent numbers. As a result, the law should seek to clarify what it means to “associate” a product with a patent number.

The issues presented by the ambiguity in the terms “posting” and “associates” for virtual marking are not like those presented by traditional patent marking, which requires only the word “Patent” (or an

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51. 35 U.S.C. § 287(a) (2013) (emphasis added).

52. See McCaffrey, *supra* note 5, at 395 (noting that “[p]atentees currently face practical limits dictated by the space available on physical products, whereas a website has theoretically limitless length.”).

53. See *id.* (“[T]here is no official limit on the number of patents that patentees can list under traditional marking law, but there is a de facto limit due to space constraints on the physical product. . . . Courts have not yet considered how many patent listings on a product can reasonably convey notice under either traditional or virtual marking . . .”).

54. See *id.* at 394-95 (“Allowing patentees to list thousands of patent numbers with no guidance for the public does not provide adequate notice.”).

55. See LG, *Patent*, <https://www.lg.com/us/patent> (last visited Aug. 20, 2020).

56. See, e.g., *Mfg. Res. Int’l, Inc. v. Civiq Smartscales, LLC*, 397 F. Supp. 3d 560, 576 (D. Del. 2019) (noting that the patentee’s site “labels the listed patents as ‘LCD display patents’ and states, ‘one or more of the above listed . . . patents may be used by [the patentee’s] products’ without identifying any specific products”).

57. See *Civiq Smartscales*, 397 F. Supp. at 578 (“[T]he website does nothing to ‘associate’ any of 112 patents with any of the 46 identified covered products . . . . This is insufficient as a matter of law to meet the requirements of virtual marking under § 287.”).

58. See LEE, *supra* note 12, at 22 (listing a number of ways in which virtual marking is employed, ranging from providing only a list of patent numbers to pairing patent numbers with specific products and including links to the patents themselves).

abbreviation of it) and the patent number.<sup>59</sup> Constructive notice is not unique to patent law, however, and courts have grappled with notice questions for centuries in other areas of the law.<sup>60</sup> Lessons from these other areas of the law can provide some key touchstones regarding what constitutes adequate notice, and these touchstones will inform the analysis of how to define the ambiguous statutory terms.<sup>61</sup>

#### IV. PRINCIPLES OF DIGITAL NOTICE AND REGISTRATION NOTICE

To evaluate the adequacy of the constructive notice provided under virtual marking, we can look to other areas of the law that require notice in various contexts. The issues surrounding the term “posting” raise questions of digital notice, or in other words, notice questions that arise from the shift in context from a physical product to a digital environment.<sup>62</sup> By contrast, the issues surrounding the term “associates” raise questions of registration notice, or in other words, notice questions about whether the specific information provided in the notice is sufficient to put the public on notice of the patent.<sup>63</sup> While each notice category has some specific contours that are relevant to the analysis of virtual marking, the general theme is that notice is adequate when someone looking for the information in question could reasonably be expected to find it.

##### A. DIGITAL NOTICE

Questions of digital notice have previously appeared in the contract and real property law contexts, and the way these areas of the law answer these questions can illuminate how notice can be achieved

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59. See 35 U.S.C. § 287(a) (requiring that patentees include on the product “the word ‘patent’ or the abbreviation ‘pat.’, together with the number of the patent”).

60. See, e.g., *Burkart v. Bucher*, 2 Binn. 455, 460 (Pa. 1810) (holding that in the real property context, “[w]here a purchaser cannot make out a title, but by a deed which leads him to another fact,” the purchaser is on constructive notice of the fact); *Livingston v. Roosevelt*, 4 Johns. 251, 251 (N.Y. Sup. Ct. 1816) (suggesting that newspaper notice regarding the dissolution of a partnership is sufficient constructive notice of the dissolution). Many other areas of the law employ constructive notice standards, including trademark law, copyright law, real property law, and contract law. See *infra* Part IV (discussing how these areas of the law treat constructive notice questions—specifically those of digital notice and registration notice).

61. See *infra* Part IV.

62. See Caroline Desmond, Note, *The Transformative Potential of Digital Media & Technology on Class Actions*, 23 LEWIS & CLARK L. REV. 747, 754-55 (2019) (discussing challenges in the class-action context with “digital notice,” or the notice provided by “digital methods currently proposed as supplemental or constructive forms of notice”). For a discussion of the issues surrounding the term “posting,” see *supra* Part III.A.

63. See *Gaston v. Dashiell*, 55 Tex. 508, 510 (1881) (“Registration notice is only of the existence and contents of the instrument recorded.”). For a discussion of the issues surrounding the term “associates,” see *supra* Part III.B.

through virtual marking. Specifically, contract law teaches that the adequacy of digital notice often hinges on context and appearance, and that information contained within a single page often more clearly provides notice. Real property law also teaches that even prolonged unavailability of the data does not preclude a finding of notice in certain circumstances.

### 1. *Contract Law*

Generally, contract law concerns private agreements between two or more parties.<sup>64</sup> For a contract to form, there must be a “meeting of the minds,” or in other words, mutual assent to the terms of the offer.<sup>65</sup> A party’s assent can be implied by conduct, but only if the party has reasonable notice of the offer and its terms.<sup>66</sup> The question of whether a party has digital notice comes up with some regularity in the context of “terms of service” and other clickwrap agreements, and these questions typically involve whether a user has notice of specific terms or information on webpages.<sup>67</sup> Virtual marking tends to focus on the same type of inquiry, but with the information in question being a patent number instead of contract terms.<sup>68</sup>

In the internet context, users typically indicate assent to terms by checking a box or clicking a button that says, “I agree,” “I accept,” or some other similar phrase indicating agreement.<sup>69</sup> When the terms of

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64. See RESTATEMENT (SECOND) OF CONTRACTS § 1 (AM. LAW INST. 1981) (“A contract may consist of a single promise by one person to another, or of mutual promises by two persons to one another; or there may be, indeed, any number of persons or any number of promises.”).

65. 1 RICHARD A. LORD, WILLISTON ON CONTRACTS § 3:4 (4th ed. 2019) (“Whether there is mutual assent to the terms of a contract is determined by an objective test, rather than the subjective intentions of the parties.”).

66. See *Berkson v. Gogo LLC*, 97 F.Supp.3d 359, 385 (E.D.N.Y. 2015) (“Reasonable notice must be given prior to the acts constituting acceptance. The conduct of a party is not effective as a manifestation of consent unless he intends to engage in the conduct and knows or has reason to know that the other party may infer from his conduct that he assents.”).

67. See, e.g., *Berkson*, 97 F. Supp. at 397 (evaluating users’ notice of the terms of an in-flight wi-fi service); *Cullinane v. Uber Technologies*, 893 F.3d 53, 62 (1st Cir. 2018) (evaluating whether a user of a ride-sharing app had reasonable notice of the app’s terms of service); *Meyer v. Uber Technologies, Inc.*, 868 F.3d 66, 78 (2d Cir. 2017) (same); *Hines v. Overstock.com, Inc.*, 668 F. Supp. 2d 362, 367 (E.D.N.Y. 2009) (evaluating whether a user had notice of the terms of use for an online retailer’s website).

68. See *Mfg. Res. Int’l, Inc. v. Civiq Smartscares, LLC*, 397 F. Supp. 3d 560, 577 (D. Del. 2019) (framing the virtual marking inquiry as whether a user has notice that “the product is associated with the patent, even where a patentee may use a single website to mark multiple products.”)

69. See Matt Meinel, *Requiring Mutual Assent in the 21st Century: How to Modify Wrap Contracts to Reflect Consumer’s Reality*, 18 N.C. J.L. & TECH. ON. 180, 184 (2016) (“In clickwrap agreements, users are presented with the actual terms of the agreement and are required to click ‘I agree’ in order to proceed with the transaction. Because the consumer makes a purposeful action to assent after clear notice of terms, clickwraps

the offer are listed on the same page as this assent mechanism, courts often hold that notice is adequate.<sup>70</sup> For example, in one case, a court held that users had notice of the license terms when those terms were provided in a scrollable window on the same page as the acceptance button.<sup>71</sup> In so holding, the court rejected the argument that the disputed clause, which was three hundred lines into the terms, would be difficult to find because the window of terms showed only ten lines at one time.<sup>72</sup> The court emphasized that the user “had a full and fair opportunity to read the entire document,” and that “no time limitation limited [the user]’s opportunity to scroll through the terms and conditions.”<sup>73</sup>

This inquiry becomes more complicated when users are presented with a link directing them to another page containing the terms, although the link alone does not preclude a finding of adequate notice.<sup>74</sup> In *Cullinane v. Uber Technologies*,<sup>75</sup> the Uber app provided a hyperlink to the company’s terms of service during the user registration process.<sup>76</sup> In holding that users did not have notice of the contract’s terms, the First Circuit considered a number of facts specific to that app, including the number of words, color contrasts, and placement of other elements on the page.<sup>77</sup> The court strongly emphasized that the

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‘expressly and unambiguously manifest’ assent and are therefore enforceable contracts.”).

70. See, e.g., *Fteja v. Facebook, Inc.*, 841 F. Supp. 2d 829, 838 (S.D.N.Y. 2012) (quoting *Grosvenor v. Qwest Commc’ns Int’l, Inc.*, No. 09-cv-2848, 2010 WL 3906253, at \*2 (D. Colo. Sept. 30, 2010)) (describing cases consistent with the rule that “a click-wrap is valid where the terms of the agreement appear on the same screen with the button the user must click to accept the terms and proceed with the installation of the product”).

71. See *Novak v. Overture Servs., Inc.*, 309 F. Supp. 2d 446, 451 (E.D.N.Y. 2004) (internal citations omitted) (“Prior to registration for access to the [service], Plaintiff must accept the [service’s terms and conditions]. On this page is a window for viewing the “terms and conditions” contract and a button to indicate acceptance of the terms contained therein.”).

72. *Novak*, 309 F. Supp. 2d at 451 (“Plaintiff claims that, because so little of the contract was viewable at a time, the . . . clause must be unenforceable. The Court disagrees.”).

73. *Id.*

74. See *Fteja*, 841 F. Supp. 2d at 835 (“[C]licking [a] hyperlinked phrase is the twenty-first century equivalent of turning over the cruise ticket. In both cases, the consumer is prompted to examine terms of sale that are located somewhere else.”); see also, e.g., *Cullinane*, 893 F.3d at 62 (holding that a user of a ride-sharing app did not have reasonable notice of the app’s terms of service when the terms were hyperlinked on the screen); *In re Holl*, 925 F.3d 1076, 1083-84 (9th Cir. 2019) (holding that user was bound to terms despite the need to click multiple links and exercise “web-browsing intuition”); *Berkson*, 97 F. Supp. 3d at 404 (holding that users of in-flight wi-fi service were not bound to terms despite a textual statement in small font above the “next” button during registration).

75. 893 F.3d 53 (1st Cir. 2018).

76. *Cullinane*, 893 F.3d at 59.

77. *Id.* at 62-63.

hyperlink was not blue and underlined, as most hyperlinks are, but rather was displayed “in a gray rectangular box in white bold text.”<sup>78</sup> It also pointed out the existence of several other items on the page that were in “large capital letters and dark colored font.”<sup>79</sup> Had the hyperlinks been more conspicuous, it is likely the court may have held users to be on notice of the license terms.<sup>80</sup> However, the Second Circuit conducted a similar factual inquiry a year earlier and held that Uber’s app did provide sufficient notice of the terms.<sup>81</sup> In this case, though, the hyperlinks were blue and underlined, and the screen was “uncluttered” and required no scrolling.<sup>82</sup>

In another case, the Ninth Circuit considered the terms of UPS’s “My Choice” tracking service, which required the user to click through one (and sometimes two) hyperlinks to reach the terms, and the terms incorporated another agreement which were not hyperlinked at all and only available on UPS’s primary website.<sup>83</sup> Despite the fact that multiple steps and “web-browsing intuition” were required to locate the clause at issue, the district court held that users were on notice of those terms, and the Ninth Circuit affirmed.<sup>84</sup>

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78. *Id.* at 63. Notably, several other courts have also emphasized the “common appearance of a hyperlink” as well. *Id.*; see also *Meyer*, 868 F.3d at 78 (“[T]he hyperlinks are in blue and underlined.”); *Adelson v. Harris*, 774 F.3d 803, 808 (2d Cir. 2014) (“[T]he hyperlinks were not hidden but visible in the customary manner, that is, by being embedded in blue, underlined text.”); *Fteja*, 841 F. Supp. 2d at 835 (quoting *United States v. Hair*, 178 Fed. Appx. 879, 882 n.3 (11th Cir. 2006)) (“The phrase ‘Terms of Service’ is underlined, an indication that the phrase is a hyperlink, a phrase that is ‘usually highlighted or underlined’ and ‘sends users who click on it directly to a new location—usually an internet address or a program of some sort.’”).

79. *Cullinane*, 893 F.3d at 63.

80. See *id.* at 63-64 (“Though not dispositive, the characteristics of the hyperlink raise concerns as to whether a reasonable user would have been aware that the gray rectangular box was actually a hyperlink. . . . Even though the hyperlink did possess some of the characteristics that make a term conspicuous, the presence of other terms on the same screen with a similar or larger size, typeface, and with more noticeable attributes diminished the hyperlink’s capability to grab the user’s attention. If everything on the screen is written with conspicuous features, then nothing is conspicuous.”).

81. See *Meyer*, 868 F.3d at 78 (considering a number of factors including the placement of elements on the page, lack of need for scrolling, and the color of the hyperlink).

82. See *id.* (“Although the sentence is in a small font, the dark print contrasts with the bright white background, and the hyperlinks are in blue and underlined.”).

83. *In re Holl*, 925 F.3d at 1083 (“The user must access the UPS My Choice Service Terms via the enrollment page’s hyperlink, potentially after following the first hyperlink to the 96-page Technology Agreement. The user must then read the UPS My Choice Service Terms and understand that they incorporate the UPS Tariff/Terms and Conditions of Service. Because the My Choice Service Terms do not include hyperlinks to the incorporated documents, the user must visit the full ups.com website, intuitively find the Service Terms and Conditions link at the bottom of the webpage, select it, and locate yet another link to the UPS Tariff/Terms and Conditions of Service.”).

84. *Id.* (“We cannot say, with ‘definite and firm conviction,’ that the district court erred by finding the incorporation valid.”).

The key inquiry in these types of cases appears to be whether the existence of the terms was reasonably conspicuous to the user.<sup>85</sup> But as these cases illustrate, what is reasonably conspicuous can depend on the specific facts and court in a particular case.<sup>86</sup> However, there seem to be some relatively safe principles for providing adequate notice if a hyperlink is used; specifically, using blue and underlined hyperlinks<sup>87</sup> and keeping the screen relatively uncluttered<sup>88</sup> seem to be fairly accepted ways to ensure adequate digital notice.

## 2. Real Property – Equitable Servitudes

Real property law generally concerns itself with “[l]and and anything growing on, attached to, or erected on it.”<sup>89</sup> This can include corporeal property (e.g., land and buildings) and incorporeal property (e.g., easements).<sup>90</sup> While real property law is a broad area of the law, constructive notice typically appears in the context of equitable servitudes, or private agreements that govern the use or occupancy of real property.<sup>91</sup> When a property owner records a servitude, the recordation generally serves as constructive notice to potential purchasers of the servitude’s existence.<sup>92</sup>

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85. See *Meyer*, 868 F.3d at 79 (“As long as the hyperlinked text was itself reasonably conspicuous—and we conclude that it was—a reasonably prudent smartphone user would have constructive notice of the terms.”).

86. Compare *Cullinane*, 893 F.3d at 62 (finding notice inadequate because the hyperlink was not conspicuous enough), with *In re Holl*, 925 F.3d at 1083 (finding notice adequate even though some terms were not hyperlinked at all).

87. See *Cullinane*, 893 F.3d at 63-64 (discussing how deviating from the typical blue and underlined format for hyperlinks “raise[d] concerns as to whether a reasonable user would have been aware” it was a hyperlink).

88. See *Meyer v. Uber Technologies, Inc.*, 868 F.3d 66, 78 (2d Cir. 2017) (noting the “blue and underlined” hyperlinks and “uncluttered” nature of the screen); cf. *Cullinane*, 893 F.3d at 63 (“The inclusion of the additional payment option and the placement of a large blue PayPal button in the middle of the screen were more attention-grabbing and displaced the hyperlink to the bottom of the screen.”).

89. *Property*, BLACK’S LAW DICTIONARY (11th ed. 2019).

90. *Id.*

91. *Covenant*, BLACK’S LAW DICTIONARY (11th ed. 2019). These agreements typically appear in a deed or lease. *Id.*

92. See, e.g., *Citizens for Covenant Compliance v. Anderson*, 906 P.2d 1314, 1320 (Cal. 1995) (quoting CAL. CIV. CODE §§ 1213, 1215 (West 1989)) (“[E]very ‘conveyance’ of real property recorded as prescribed by law provides ‘constructive notice’ of its contents to subsequent purchasers. The term ‘conveyance’ is broadly defined to include ‘every instrument in writing . . . by which the title to any real property may be affected’”); *Genovese Drug Stores, Inc. v. Connecticut Packing Co.*, 732 F.2d 286, 290 (2d Cir. 1984) (“The traditional rule is that a purchaser or lessee of property is charged with constructive notice only of those encumbrances that appear in his direct chain of title.”); *Emrick v. Multicon Builders, Inc.*, 566 N.E.2d 1189, 1193 (Ohio 1991) (“In determining whether the purchaser had constructive notice, we held that since the encumbrance was never recited in any deed in the chain of title, the purchaser could not be charged with constructive notice.”); *Cole v. Seamonds*, 104 S.E. 747, 750 (W. Va. 1920) (“[T]he authorities are uniform in holding that actual notice of the restriction is not essential, but that

The concept of digital notice often appears in the real property context when a servitude is recorded correctly, but an error by the clerk prevents it from appearing in the chain of title during a title search.<sup>93</sup> In *Mayfield v. First City Bank of Florida*,<sup>94</sup> the deed in question was properly recorded, but disappeared from the county's electronic records after only seventy-three minutes due to a clerk's error.<sup>95</sup> While "recogniz[ing] the harshness of the result," the court held that the recordation provided constructive notice because "constructive notice attaches upon compliance with the recording statute," and no requirement existed that the "documents had to remain in the official record."<sup>96</sup> This rule is not unique to Florida law; Georgia and many other jurisdictions have produced similar holdings as in *Mayfield*.<sup>97</sup> As a result, it appears that even long gaps in the availability of digital records may not necessarily preclude a finding of adequate digital notice, so long as the person providing the notice acted in accordance with the relevant requirements. This principle could be of par-

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constructive notice is sufficient."); *Earl v. Pavex, Corp.*, 313 P.3d 154, 166 (Mont. 2013) ("[W]e hold that a prospective purchaser is on constructive notice of recorded servitudes and encumbrances granted by the existing and prior owners of the parcel in question during the respective periods when each owner held title to the parcel."); *Federoff v. Pioneer Title & Tr. Co. of Ariz.*, 803 P.2d 104, 108 (Ariz. 1990) ("Under the rules of constructive notice, a successor in interest is charged with notice of any equitable covenant that is properly recorded in a prior instrument and for which the successor is required to search. The successor takes the property bound by the covenant and must comply with it.").

93. See, e.g., *Mayfield v. First City Bank of Fla.*, 95 So.3d 398, 400 (Fla. Dist. Ct. App. 2012) (evaluating whether purchaser had constructive notice of a deed that appeared in the official record briefly before disappearing).

94. 95 So.3d 398 (Fla. Dist. Ct. App. 2012).

95. *Mayfield*, 95 So.3d at 400 ("[I]n the . . . electronic official records, the corresponding book and page numbers showed that the documents were voided . . . Thus, except for a brief period of approximately 73 minutes on July 6, 2006, the . . . deed and . . . mortgage did not appear in the official records of [the county].").

96. *Id.* at 402-03.

97. See, e.g., *Leeds Bldg. Prods., Inc. v. Sears Mortg. Corp.*, 477 S.E.2d 565, 568 (Ga. 1996) ("A majority of jurisdictions have recognized that a defect in the acknowledgment of an instrument required for recordation, which is not apparent on the face of the instrument, does not prevent the recordation from providing constructive notice to subsequent bona fide purchasers."); *Kendall v. J.I. Porter Lumber Co.*, 64 S.W. 220, 222 (Ark. 1901) (holding that constructive notice attached to covenants despite a clerk's error because "the recorder was required to record them, and when filed for record they were constructive notice of their contents to all persons."); *Columbia Gas Transmission Corp. v. Bennett*, 594 N.E.2d 1, 6 (Ohio 1990) ("Failure to discover an instrument within the chain of title, even though improperly recorded by a county recorder, will not negate constructive notice."); *Miller v. Simonson*, 92 P.3d 537, 541 (Idaho 2004) ("The Idaho recording statute clearly establishes that once an instrument has been acknowledged, certified, and presented for recording it provides constructive notice to all subsequent purchasers regardless of whether the instrument is thereafter properly recorded by county officials or not.").

ticular relevance to virtual patent marking, where information may occasionally be unavailable despite the best efforts of the patentee.<sup>98</sup>

## B. REGISTRATION NOTICE

In addition to the questions of digital notice, questions of registration notice have previously appeared in the trademark, copyright, and real property law contexts. While the case law in each of these areas is nuanced, the general theme is that the notice must be provided in such a way that someone seeking the information would reasonably be able to recognize the facts located in the notice. Furthermore, real property law teaches that registration notice does not extend when the searcher would need to undertake an unreasonable effort to identify the information contained in the notice.

### 1. Trademark

Generally speaking, trademark law prevents others from copying or using a “mark” that indicates the source of another’s goods or services.<sup>99</sup> A “mark” typically refers to words and logos, but can refer to any word, name, symbol, or device that indicates source.<sup>100</sup> Under the Lanham Act, Congress has authorized mark owners to register their marks with the United States Patent and Trademark Office.<sup>101</sup> Registration carries numerous benefits, including demonstrating prima facie validity of the mark and granting to the registrant the exclusive right to use the mark in commerce.<sup>102</sup> Registration also provides nationwide constructive notice to the public of the registrant’s claim of

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98. See *infra* Part V.A.2.

99. *Qualitex Co. v. Jacobson Prods. Co.*, 514 U.S. 159, 163 (1995) (noting that “[i]n principle, trademark law . . . prevent[s] others from copying a source-identifying mark”); see also 15 U.S.C. § 1114 (2005) (providing a cause of action for mark owners against any person who “use[s] in commerce any reproduction, counterfeit, copy, or colorable imitation of a registered mark in connection with the sale, offering for sale, distribution, or advertising of any goods or services on or in connection with which such use is likely to cause confusion, or to cause mistake, or to deceive”).

100. 15 U.S.C. § 1127 (2005) (“The term “trademark” includes any word, name, symbol, or device, or any combination thereof . . .”). This language has been interpreted to include shapes, sounds, fragrances, and colors. *Qualitex Co.*, 514 U.S. at 162, 174.

101. 15 U.S.C. § 1051(a)(1) (2002) (“The owner of a trademark used in commerce may request registration of its trademark on the principal register hereby established by paying the prescribed fee and filing in the Patent and Trademark Office an application and a verified statement, in such form as may be prescribed by the Director, and such number of specimens or facsimiles of the mark as used as may be required by the Director.”).

102. 15 U.S.C. § 1115 (2002) (providing that registration serves as “prima facie evidence of the validity of the registered mark . . . and of the registrant’s exclusive right to use the registered mark in commerce on or in connection with the goods or services specified in the registration”).

ownership.<sup>103</sup> However, registrants are still required to provide additional notice to the public of their registration to recover damages for actions occurring after the mark is registered.<sup>104</sup>

The trademark notice requirement is very similar to the patent marking requirement.<sup>105</sup> In order to recover post-registration damages in an infringement suit for a registered trademark, the mark owner must display the mark with “the words ‘Registered in U.S. Patent and Trademark Office’ or ‘Reg. U.S. Pat. & Tm. Off.’ or the letter R enclosed within a circle, thus ®.”<sup>106</sup> In other words, instead of marking the product with a patent number, a mark owner is marking the product with the ® symbol to place the public on notice of the mark’s registration.

While there is “surprisingly little case law” on the adequacy of trademark notice,<sup>107</sup> a few examples illustrate what seems to be the common thread: registration notice is adequate if a member of the public, upon examining the product, could reasonably be expected to recognize that the mark on the product was registered.<sup>108</sup> One illustrative example relates to marks used on clothing items.<sup>109</sup> In cases where a registered mark appears on clothing or other accessories, courts have held that providing notice of the registration on the neck label or price tag is sufficient notice, even though it may not accom-

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103. 15 U.S.C. § 1072 (1946) (“Registration of a mark on the principal register . . . shall be constructive notice of the registrant’s claim of ownership thereof.”).

104. See 15 U.S.C. § 1111 (1988) (“[I]n any suit for infringement under this chapter by such a registrant failing to give such notice of registration, no profits and no damages shall be recovered under the provisions of this chapter unless the defendant had actual notice of the registration.”).

105. See *Nat’l Prods., Inc. v. Arkon Res., Inc.*, No. C15-1553RSL, 2017 WL 497678, at \*1 (W.D. Wash. Feb. 7, 2017) (noting that “the trademark notice provision is similar to that found in patent law”). Note that this case is distinct from the case with the same name discussed in *supra* note 39 and accompanying text.

106. 15 U.S.C. § 1111. This statutory notice is required to recover any profits or damages for acts that occur post-registration as part of a Lanham Act § 32 claim for infringement of a registered mark. 3 J. THOMAS MCCARTHY, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 19:144 (5th ed. 2019). Any damages for acts that occur pre-registration do not require this registration notice and can be brought under a Lanham Act § 43(a) action for infringement of an unregistered mark. *Id.* (“This means that a trademark owner can sue under Lanham Act § 43(a) for damages from infringing acts occurring prior to registration unaffected by the notice requirement and under Lanham Act § 32(1) for damages for acts post-registration so long as the notice requirement is met.”).

107. *Nat’l Prods., Inc.*, 2017 WL 497678, at \*1.

108. See, e.g., *AGSouth Genetics, LLC v. Georgia Farm Servs., LLC*, No. 1:09-CV-186 (WLS), 2013 WL 5774698, at \*9 (M.D. Ga. Oct. 24, 2013) (placing emphasis on whether “any observer would be placed on sufficient notice of the protected status of the mark”).

109. See, e.g., *Reebok Int’l Ltd. v. Su Youn Pak*, No. 87 CIV. 2727 (TPG), 1989 WL 76225, at \*3 (S.D.N.Y. June 30, 1989) (discussing Reebok’s use of registration symbols on the neck label and hang tags of garments, but only sometimes in the designs of the garments).

pany the mark on the product itself.<sup>110</sup> Additionally, one court has held that the registration notice need not appear “directly adjacent to the mark.”<sup>111</sup> Instead, the emphasis should be on whether “any observer would be placed on sufficient notice of the protected status of the mark.”<sup>112</sup> In a third example, however, notice was held to be insufficient when a mark owner included the ® symbol on “a subset of marketing materials and on a subset of the product representations within those materials.”<sup>113</sup> In that case, the court noted that the mark owner did not “consistently mark[] substantially all of its [trademarked] products, and . . . no longer distribut[ed] unmarked products,”<sup>114</sup> but rather, “did so in an inconsistent and wholly insufficient manner.”<sup>115</sup>

As these cases illustrate, the main theme in these inquiries appears to be whether it would be reasonable for a member of the public to see, when encountering a given product, that the mark on the product was registered. It is probably reasonable to expect someone to see a registration symbol on a price tag even if it is not marked on the good itself. Similarly, it is probably reasonable to expect someone to see the registration symbol even if not located directly adjacent to the mark itself. Conversely, it is probably unreasonable to expect someone to see a registration symbol if it only appears in some marketing materials, and only on some of the products within those materials.

## 2. Copyright

At a high level, copyright law seeks to protect “original works of authorship.”<sup>116</sup> Typical examples are literary, musical, and dramatic works, but any work “fixed in [a] tangible medium of expression” can be protected.<sup>117</sup> When a protectible work is created, the author of the work gains several exclusive rights, including the rights to reproduce the work, distribute the work, perform the work publicly, and create

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110. *See Reebok*, 1989 WL 76225, at \*3 (“Affixing the notice of registration to plaintiffs’ trademarks, whether on the garment itself or on a tag, is adequate notice of such registration.”); *Coach, Inc. v. Citi Trends, Inc.*, No. CV 17-4775-DMG (KSx), 2019 WL 1940622, at \*6 (C.D. Cal. Apr. 5, 2019) (“[The mark owner] provides the constructive registration language on its goods’ price tags . . . . That is adequate under section 1111 to put [a defendant] on notice.”).

111. *AGSouth Genetics*, 2013 WL 5774698, at \*9.

112. *Id.*

113. *Nat’l Prods., Inc.*, 2017 WL 497678, at \*1.

114. *Id.* at \*3 (quoting *Am. Med. Sys., Inc. v. Med. Eng’g Corp.*, 6 F.3d 1523, 1538 (Fed. Cir. 1993)).

115. *Id.*

116. 17 U.S.C. § 102(a) (1990).

117. *Id.*; *see Fourth Est. Pub. Benefit Corp. v. Wall-Street.com, LLC*, 139 S. Ct. 881, 887 (2019) (noting that prominent types of original works of authorship include “literary, musical, and dramatic works”).

derivative works.<sup>118</sup> When another person or entity attempts to exercise one of these rights, the author may bring suit for copyright infringement.<sup>119</sup> However, in some cases, authors are required to put potential infringers on notice in order to bring a suit.<sup>120</sup>

Currently, for works published before March 1, 1989, copyright owners must provide notice of their copyright in order to bring an infringement suit.<sup>121</sup> Notice is optional for works published on or after March 1, 1989, but the requirements are nevertheless illustrative.<sup>122</sup> Effective copyright notice consists of three elements: the copyright symbol ©, the year of first publication of the work, and the name of the copyright owner.<sup>123</sup> In addition, the notice must be placed “on copies or phonorecords in a way that [is] permanently legible to an ordinary user of the work and could not be concealed from view upon reasonable examination.”<sup>124</sup> While courts have interpreted this requirement in various ways, the general trend is clear: like with trademark law, the determination of whether notice is adequate focuses on whether a potential infringer could reasonably be expected to know that a work is copyrighted.<sup>125</sup>

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118. 17 U.S.C. § 106 (2002) (providing copyright holders with the exclusive rights to reproduce the copyrighted work, prepare derivative works, distribute copies of the work, perform the copyrighted work publicly, and display the copyrighted work publicly); see also *Fourth Est.*, 139 S. Ct. at 887.

119. 17 U.S.C. § 501 (2019) (“Anyone who violates any of the exclusive rights of the copyright owner . . . is an infringer of the copyright or right of the author, as the case may be. . . . The legal or beneficial owner of an exclusive right under a copyright is entitled . . . to institute an action for any infringement of that particular right committed while he or she is the owner of it.”); see also *Fourth Est.*, 139 S. Ct. at 887 (“Upon registration of the copyright . . . a copyright owner can recover for infringement that occurred both before and after registration.”).

120. See generally UNITED STATES COPYRIGHT OFFICE, COPYRIGHT NOTICE (2017), <https://www.copyright.gov/circs/circ03.pdf>.

121. See *id.* at 1.

122. See *id.* In most cases, the duration of a copyright is the life of the author plus seventy years. See 17 U.S.C. §§ 302-303 (1998). As a result, many works protected by copyright are still governed by the notice requirement; as of 2020, this would include any work published before March 1, 1989 by an author who is still living or who died after the year 1950.

123. UNITED STATES COPYRIGHT OFFICE, *supra* note 120, at 1.

124. *Id.* at 2.

125. See, e.g., *Uneeda Doll Co. v. Goldfarb Novelty Co.*, 373 F.2d 851, 852-53 (2d Cir. 1967) (quoting *Shapiro, Bernstein & Co. v. Jerry Vogel Music Co.*, 161 F.2d 402, 409 (2d Cir. 1946)) (“The purpose of a copyright notice is to prevent innocent persons who are unaware of the existence of the copyright from incurring the penalties of infringers by making use of the copyrighted work.’ In keeping with this purpose, courts generally, and particularly those of this circuit, have afforded protection to one who has substantially complied with [the statutory notice requirements].”)

Several key cases illustrate this common thread.<sup>126</sup> In one case, a court held that notice was adequate when a copyright holder provided the letter “C” inside of a hexagon in place of the copyright symbol.<sup>127</sup> While the Copyright Office has suggested that a “C” inside parentheses may be insufficient,<sup>128</sup> the United States Court of Appeals for the Sixth Circuit has offered that it may indeed be sufficient while affirming a district court holding that the copyright holder “substantially complied with the [notice] statute.”<sup>129</sup> Similarly, for author names, the United States Court of Appeals for the Second Circuit has held that notice can still be adequate “even when the stated party on a copyright notice is not precisely correct.”<sup>130</sup> The purpose of copyright notice is to “prevent innocent persons who are unaware of the existence of the copyright” from infringing, and courts seem to focus on whether this purpose is substantially met.<sup>131</sup>

In addition to including the three elements of notice, copyright holders are required to include the notice “in such manner and location as to give reasonable notice of the claim of copyright.”<sup>132</sup> In one case, a copyright owner included the notice on the bottom of a computer chip, and the notice was not visible when the chip was attached to the circuit board employing the chip.<sup>133</sup> However, the court held that this location was acceptable because the chip would need to be removed from the board in order for the copyrighted program to be copied.<sup>134</sup> The Second Circuit has also held that any location is sufficient so long as it notifies anyone seeking to copy the work of the copyright’s existence.<sup>135</sup>

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126. See, e.g., *Videotronics, Inc. v. Bend Elecs.*, 586 F. Supp. 478, 481 (D. Nev. 1984) (holding that the letter “C” enclosed inside of a hexagon, instead of the required circle, was sufficient to satisfy the copyright symbol element).

127. *Id.*

128. See *id.*

129. *Forry, Inc. v. Neundorfer, Inc.*, 837 F.2d 259, 266 (6th Cir. 1988) (“[I]f a ‘C’ in a hexagon is sufficient, an argument exists that a ‘C’ in parentheses is sufficient.”).

130. *Martha Graham Sch. & Dance Found., Inc. v. Martha Graham Ctr. of Contemp. Dance, Inc.*, 380 F.3d 624, 645 (2d Cir. 2004) (holding that a copyright notice listing a dance center as the copyright owner was sufficient regardless of whether the copyright was formally assigned to the dance center).

131. See *Uneeda Doll Co.*, 373 F.2d at 852-53 (“In keeping with this purpose, courts generally, and particularly those of this circuit, have afforded protection to one who has substantially complied with [the statutory notice requirements].”).

132. 17 U.S.C. § 401(c) (1988).

133. *Forry*, 837 F.2d at 266.

134. *Id.* (“Once [the chip is] removed, the copyright notice would be clearly visible, and so . . . the location of the notice sufficiently complied with [the notice requirements].”).

135. See *Coventry Ware, Inc. v. Reliance Picture Frame Co.*, 288 F.2d 193, 195 (2d Cir. 1961) (“[The notice statute] should not be read to impose a restriction on placement which, had it been intended by Congress, would certainly have been expressly stated.”).

As with trademark law, it appears the common theme here is whether it is reasonable for a potential infringer to know that a work is copyrighted. This theme seems to dovetail with the common thread that underpins the trademark notice cases.<sup>136</sup> Even outside of the intellectual property regimes, this common thread still seems to hold true, particularly in the real property context.<sup>137</sup>

### 3. Real Property – Equitable Servitudes

While relevant to questions about digital notice,<sup>138</sup> real property law also addresses questions relating to registration notice for equitable servitudes. While an equitable servitude typically binds the original parties to the agreement, it can also bind a successor in interest if the successor has actual or constructive notice of the servitude.<sup>139</sup> The nuances of various state laws can differ, but the general rule is that a duly recorded servitude provides constructive notice to subsequent purchasers.<sup>140</sup> This rule does have restrictions, however; in particular, purchasers are often not deemed to have constructive notice in the case of a “wild deed,” or a deed that does not appear in the chain of title.<sup>141</sup> In applying this general rule, courts tend to focus on a common thread quite like that of the trademark and copyright notice requirements:<sup>142</sup> specifically, whether a potential purchaser would reasonably be expected to know of a servitude’s existence in the property’s chain of title.<sup>143</sup>

This common thread is illustrated in cases that hold even when a servitude appears indirectly in the property’s chain of title, purchasers may still not be held on notice of the servitude.<sup>144</sup> For instance, if

136. See *supra* Part IV.A.

137. See *infra* Part IV.B.3.

138. See *supra* Part IV.A.2.

139. See, e.g., *Excel Willowbrook, L.L.C. v. JP Morgan Chase Bank, Nat. Ass’n*, 758 F.3d 592, 601 n.26 (5th Cir. 2014) (“Equitable servitudes run against a successor in interest even where there is no privity of estate, if the successor has actual or constructive notice.”).

140. See *supra* note 92.

141. See, e.g., *Sabo v. Horvath*, 559 P.2d 1038, 1039 (Alaska 1976) (holding that “a deed recorded outside the chain of title is a ‘wild deed’ and does not give constructive notice”).

142. See *supra* Parts IV.A.1-2.

143. See, e.g., *Beach v. Faust*, 40 P.2d 822, 823 (Cal. 1935) (noting that the purpose of recording laws “is to protect those who honestly believe they are acquiring a good title, and who invest some substantial sum in reliance on that belief”).

144. See, e.g., *Spring Lakes, Ltd. v. O.F.M. Co.*, 467 N.E.2d 537, 540 (Ohio 1984) (holding that a purchaser does not take notice of a covenant occurring in another conveyance by the same grantor). Notably, this is not a uniform rule in all jurisdictions. See 14 MICHAEL ALLEN WOLF, POWELL ON REAL PROPERTY § 82.01[4] (2020) (“Whether the purchaser, in the process of [a title] search, has the burden of locating all documents that have been deposited for record, even if not properly recorded, will vary from state to state. . . . [I]n many states a subsequent purchaser is considered to have constructive

grantor *A* conveys half of Blackacre to *B* with a covenant, and the other half of Blackacre to *C* with no covenant, *C* is not held to have constructive notice of *B*'s covenant, even though the parcel was shared originally.<sup>145</sup> The rationale behind this rule seems to be protecting purchasers who have made a good faith effort to ensure they are obtaining good title by not requiring them to engage in an unreasonable or burdensome inquiry.<sup>146</sup>

As with trademark and copyright law, it appears that the adequacy of notice in the real property context centers on whether it would be reasonable for a purchaser to encounter the equitable servitude in the chain of title. In particular, the limits on what a purchaser must search are notable. While in cases like *Hancock v. Gumm*,<sup>147</sup> a purchaser could theoretically search through all subsequent titles from the original grantor, she is not required to do so for notice purposes.<sup>148</sup> Thus, there is a line at which a search that, while possible, becomes unreasonable.

Overall, understanding digital notice and registration notice through the lenses of contract law, real property law, trademark law, and copyright law informs the analysis of what constitutes adequate notice in the virtual marking context. The common thread across all areas of the law is reasonableness; if it would be reasonable to expect someone to take notice of a certain fact upon observing the website or product, notice is likely adequate. In the patent context, this likely means that if it would be reasonable for a potential infringer, upon going to the URL marked on a product, to recognize which patents cover the product, then the notice is adequate. The interpretations of the ambiguous statutory terms will therefore embody this theme.

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notice of only those interests that are recorded within the grantor's chain of title. . . . In other jurisdictions the search is not so limited, but may include all transactions regardless of the date on which they are recorded."'). However, the cases are still illustrative of a common view of what constitutes adequate notice.

145. See *Wolf*, *supra* note 144, at § 82.01; *Hancock v. Gumm*, 107 S.E. 872, 877 (Ga. 1921) ("[W]here a recorded deed to a lot forming part of a larger tract contains restrictive covenants, which by the terms of the deed are not only to apply to the lot conveyed, but, as in this case, to other lands of the grantor, a purchaser of one of the lots is not charged with notice of the covenant contained in a prior deed from the common grantor to another lot or parcel of the general tract.").

146. See *Beach*, 40 P.2d at 823 (noting that the purpose of recording laws "is to protect those who honestly believe they are acquiring a good title, and who invest some substantial sum in reliance on that belief"); *Glorieux v. Lighthipe*, 96 A. 94, 96 (N.J. 1915) ("A purchaser may well be held bound to examine or neglect at his peril, the record of the conveyances under which he claims; but it would impose an intolerable burden to compel him to examine all conveyances made by every one in is [sic] chain of title.").

147. 107 S.E. 872 (Ga. 1921).

148. See *Hancock*, 107 S.E. at 877.

## V. PROPOSING DEFINITIONS FOR THE STATUTORY TERMS

In light of the issues presented by the statutory ambiguities discussed in Part III, this Part argues that the law should seek to provide clearer interpretations for the terms “posting” and “associates.”<sup>149</sup> This Part proposes interpretations for those two terms; specifically, it proposes that “posting” should mean a single webpage, and that “associates” should mean to explicitly connect the specific patented product with the number of the patents used in the product. Further, it argues for an addition to the statutory language, which would require patentees to include both the number and title of each patent on the virtual marking webpage.

### A. DEFINING “POSTING”

#### 1. *Setting the Boundary for “Posting”*

The first challenge presented by the term “posting” is whether it should be confined to a single webpage, or if it can be a website with multiple pages.<sup>150</sup> This Part argues that the appropriate boundary for posting is a single dedicated webpage that is not the homepage.<sup>151</sup> The relevant dictionary definition of posting is “a message, link, image, etc., posted to an online location such as a blog, social media website, or forum.”<sup>152</sup> This definition implies that a posting is a webpage; a website with many pages is analogous to a blog or forum, which contains multiple posts and pages (these would then qualify as “postings” under the dictionary definition). In addition to the dictionary definition, the United States Patent and Trademark Office (“USPTO”) has seemed to equate “posting” with “webpage.”<sup>153</sup> While this interpretation is informal and not binding, a court may accord it some persuasive weight as an administrative interpretation.<sup>154</sup>

The question is, then, whether one of the relevant purposes of patent marking, either adequacy of notice or incentives for the paten-

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149. See *supra* Part III.

150. See *supra* Part III.A.

151. Under this standard, one page for all patent products would be sufficient to meet the requirements, and this appears to be what many patentees are doing currently. See sources cited in *supra* note 37. However, if some patentees choose to create individual pages for each product, they could certainly do so under this standard, as long as the URL marked on the product matched the page specific to that product.

152. OXFORD UNIV. PRESS, *Posting*, LEXICO, <https://www.lexico.com/en/definition/posting> (last visited Aug. 20, 2020).

153. See LEE, *supra* note 12, at 14 (“Section 287(a) requires only that virtual marking Web pages be ‘accessible to the public without charge.’”); cf. 35 U.S.C. § 287(a) (requiring “a posting on the Internet, accessible to the public without charge”).

154. See *United States v. Mead Corp.*, 533 U.S. 218, 220 (2001) (noting that “an agency’s interpretation may merit some deference whatever its form, given the ‘specialized experience and broader investigations and information’ available to the agency”).

tee,<sup>155</sup> should outweigh the definition and agency interpretation of “posting.” Taking lessons from trademark and copyright law, adequacy of notice should be judged by whether it would be reasonable to expect someone to take notice of a certain fact.<sup>156</sup> Here, the question is whether a potential infringer would take notice that a specific product is covered by not just any patent but the specific patent that it utilizes.<sup>157</sup>

It is likely that allowing patentees to mark products with the address of their website homepages could create a situation where notice is not always adequate. In *National Products, Inc. v. Arkon Resources, Inc.*,<sup>158</sup> for example, the patentee directed users to its website homepage.<sup>159</sup> In discussing the patentee’s marking strategy, the court noted that it could not find the specific page containing patents from the homepage; it later discovered that the patent information was nested under “Legal.”<sup>160</sup> While the court in this case declined to decide this issue,<sup>161</sup> it is fair to conclude that this notice was not adequate. If a court could not locate the patent information at all, it certainly could not take notice that a specific product was covered by a specific patent. A similarly situated potential infringer would likely experience the same issue, and it does not seem appropriate to treat them as being on notice of patents they would normally not be able to locate.

On the other hand, there may be circumstances in which a website homepage does clearly direct the user to a page for patents. In these cases, however, the placement of the link could create a difficult line-drawing exercise for courts. Must the patentee place the link to patent information in the main navigation bar at the top of the page?

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155. See *supra* Part II.

156. See *supra* Part IV.

157. See *Stryker Corp. v. Zimmer, Inc.*, 782 F.3d 649, 660 n.5 (Fed. Cir. 2015), *vacated on other grounds*, 136 S. Ct. 1923 (2016) (“[T]he plain language of the marking statute provides that the patented article be marked with the ‘number of the patent.’”).

158. No. CV 18-02936 AG, 2019 WL 1034321 (C.D. Cal. Jan. 9, 2019).

159. See *Nat’l Prods., Inc. v. Arkon Res., Inc.*, No. CV 18-02936 AG, 2019 WL 1034321, at \*16 (C.D. Cal. Jan. 9, 2019) (discussing product which is marked with the patentee’s primary website URL as opposed to a specific page for patents).

160. *Nat’l Prods. Inc.*, 2019 WL 1034321, at \*16 (“Out of curiosity, the Court attempted to access the ‘Patents and Trademarks’ page from [the patentee]’s website’s home page, but did not find any links on the homepage that directly linked to such a webpage, which is apparently nested under the link ‘Legal.’”).

161. See *id.* (citing U.S. PATENT & TRADEMARK OFFICE, REPORT ON VIRTUAL MARKING (Sept. 2014), [https://www.uspto.gov/sites/default/files/aia\\_implementation/VMreport.pdf](https://www.uspto.gov/sites/default/files/aia_implementation/VMreport.pdf) (“The Court finds this to be an intriguing issue. But the Court finds that on the current record, [the alleged infringers] have failed to meet their burden of adequately raising the issue for summary adjudication. Particularly if the issue truly is one of first impression, placing legal limits on what constitutes marking would be inappropriate on such a significantly limited record.”)).

Is it sufficient to include the link in the site's footer? What about other locations on the page? Given the number of different ways that patentees choose to virtually mark their products,<sup>162</sup> courts would likely have to engage in a number of facts-and-circumstances analyses to determine whether notice was adequate for a given page. These factual inquiries could look a lot like the inquiries in clickwrap contract cases, where courts seek to determine whether the existence of terms is reasonably conspicuous.<sup>163</sup> Given the variety of outcomes in those cases, this could be a barrier to creating clarity for patentees.<sup>164</sup> It seems, then, that the adequacy-of-notice factor also cuts toward setting the boundary at a single webpage, given the risk for inadequate notice and the potential for difficult line-drawing exercises if a different interpretation is used.

When considering the patentee's interests, a broader interpretation of "posting" may provide additional benefits to the patentee, such as marketing opportunities, fewer characters in the address, and flexibility in website design.<sup>165</sup> However, these interests likely do not outweigh the dictionary definition, agency interpretation, and adequacy-of-notice considerations previously discussed because the availability of virtual marking is already designed primarily to create benefits for the patentee, such as cost savings and easier marking on small products.<sup>166</sup> As a result, it already tends to favor one of the main purposes of patent marking: "encouraging patentees to give notice to the public that the article is patented."<sup>167</sup> It is difficult to justify, then, a broad interpretation that marginally advances that same goal, but perhaps at the expense of another primary purpose of patent marking: "helping to avoid innocent infringement."<sup>168</sup> It is quite possible that someone who is unable to ascertain whether a patent covers a certain product might later innocently infringe on that patent.

Without Congress, the USPTO, or the Federal Circuit adopting this boundary, however, patentees will still be required to provide adequate notice and could potentially do so under a broader interpretation. In contract law, a hyperlink to additional contract terms does

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162. See LEE, *supra* note 12, at 22 (listing a number of ways in which virtual marking is employed, ranging from providing only a list of patent numbers to pairing patent numbers with specific products and including links to the patents themselves).

163. See *supra* Part IV.D (discussing courts' interpretations of notice requirements in the context of clickwrap "terms of service agreements").

164. See *id.* (concluding that, while there are some guiding principles available, questions of this type can be difficult for courts to answer); see also *State v. Zuanich*, 593 P.2d 1314, 1324 (Wash. 1979) (en banc) (Stafford, J., dissenting) (noting the contrast between "[s]pecificity and clarity" and "future case by case definition by the judiciary").

165. See *supra* Part IV.B.

166. See *supra* Part II.C.

167. *Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1443 (Fed. Cir. 1998).

168. *Nike, Inc.*, 138 F.3d. at 1443.

not necessarily preclude digital notice of the terms, so long as the existence of the terms is reasonably conspicuous to the user.<sup>169</sup> A similar standard could be used to evaluate virtual marking sites; if the existence of a page with patent information would be reasonably conspicuous to a potential infringer, then perhaps that infringer could be treated as being on notice of the patents, even if the product is marked with the patentee's homepage URL. If such a standard were to be adopted, patentees would be well-served to keep their homepages uncluttered and use blue and underlined hyperlinks to point to the patent information, as courts seemed to look for these factors in particular when evaluating notice in the contract law context.<sup>170</sup> But even in contract law, a single webpage containing both the terms and the assent mechanism seem to be treated much more favorably by the courts, and the same would likely occur in the patent context.<sup>171</sup> Thus, patentees seeking certainty should consider limiting their "postings" to a single page, even in the absence of a formal interpretation by Congress, the USPTO, or the Federal Circuit.

## 2. Website Transience

The second challenge posed by the term "posting" is the transience of webpages.<sup>172</sup> Specifically, how much downtime, if any, is permissible, and what types of modifications are allowed to be made to the site?<sup>173</sup> Real property law teaches that there are instances when a search may not be practically possible, for example, when the clerk errs in recording a deed or covenant.<sup>174</sup> This situation is analogous to website downtime; in both cases, an error makes it practically impossible for a member of the public to take notice of a certain fact. The primary difference is that in the property cases, a government official (the clerk) is responsible for the error, but in virtual marking cases, the patentee could be responsible for the error. This distinction should not be dispositive, however, because patentees are often not directly responsible for downtime on their sites.

The reality is that most websites experience some level of downtime, often caused by outages at the website owner's hosting provider.<sup>175</sup> According to one study, even the most reliable hosting

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169. See *supra* Part IV.A.1.

170. See *id.*

171. See *id.*

172. See *supra* Part III.A.

173. See *id.*

174. See *supra* Part IV.D.

175. See Michael Guta, *Websites Average 3 Hours of Host Downtime a Month, How Does Your Business Site Fare?*, SMALL BUS. TRENDS (Feb. 15, 2019), <https://smallbiz-trends.com/2019/02/web-hosting-uptime-statistics.html> ("The latest research from Host-

provider still experienced forty-five minutes of downtime over the course of the year 2018, with the average coming in at approximately three hours of downtime.<sup>176</sup> Given this fact, websites often measure their uptime (i.e., lack of downtime) as a function of “nines.”<sup>177</sup> While the industry standard uptime is somewhere below two nines,<sup>178</sup> some services advertise the availability of five or six nines for certain critical systems.<sup>179</sup> Unsurprisingly, this increased availability comes at a cost.<sup>180</sup>

Determining what balance of cost and uptime is most appropriate for virtual marking sites is beyond the scope of this article. It would not be appropriate to require that a virtual marking site be available without interruption.<sup>181</sup> However, it would be appropriate to use the “nines” metric to set a standard for virtual marking website availability. After some additional study, Congress, the USPTO, courts, or other scholars could offer a baseline number of “nines” that would allow for constructive notice to attach in virtual marking cases. Courts might also consider adding an exception for bad faith on the part of the patentee; if there is evidence indicating that a patentee willfully took down its virtual marking page for a significant period of time, courts may be understandably less inclined to say that a patentee provided adequate notice of its patents to the public.<sup>182</sup>

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ing Facts has revealed the average website is down three hours a month due to the downtime of web host providers.”).

176. *Id.*

177. See Dan Kusnetzky, *How Many Nines of Uptime Do You Need?*, VIRTUALIZATION & CLOUD REV. (June 1, 2015), <https://virtualizationreview.com/articles/2015/06/01/how-many-nines-of-uptime-do-you-need.aspx> (providing an assessment of the implications of the “nines” concept on system uptime). The concept of “nines” refers to the percentage of time during which a website is available; for example, two “nines” would mean an uptime of 99% and three “nines” would mean an uptime of 99.9%. *Id.*

178. See *id.* (“If we step back for a moment to consider the uptime seen with typical industry standard (x86-based) physical systems, 95 percent to 99 percent uptime is a pretty common range.”).

179. See *id.* (“Continuous processing system suppliers like Stratus Technologies state that their hardware-based systems offer 99.9999 percent (6 nines) of uptime and their software-based solutions offer 99.999 percent (5 nines) of uptime.”).

180. See *id.* (“The extra cost will probably be reasonable, considering the criticality of certain workloads.”).

181. Systems with five or six nines are often deemed appropriate or desirable for even the most critical applications. See *id.* (suggesting that applications with “critical[] . . . workloads” should consider incurring the extra cost for high availability). Even a system with six nines would incur approximately 30 seconds of downtime per year. Especially given the principle from real property cases that consistent availability is not unequivocally necessary, see *supra* Part IV.D, a requirement that a system be up without interruption would completely swallow the virtual marking option.

182. The patent system contains other provisions that tend to work against parties who act in bad faith, so such an exception would not be wholly unprecedented. See, e.g., *Bd. of Educ. ex rel. Bd. of Trs. of Fla. State Univ. v. Am. Bioscience, Inc.*, 333 F.3d 1330, 1344 (Fed. Cir. 2003) (“[P]atents have in the past been held unenforceable for failure to correctly name inventors in cases where the named inventors acted in bad faith or with

For modifications, it is important to note that one of the key benefits of virtual marking is that it permits patentees to quickly modify their sites upon the issuance of a new patent, or the expiration of an old patent.<sup>183</sup> Preventing changes to virtual marking sites, or imposing heavy restrictions on those changes, would severely undercut that purpose.<sup>184</sup> On the other hand, if changes occur too frequently and it is not clear when the patent information became available on the virtual marking site, notice might nevertheless be inadequate. But patentees bear the burden of establishing compliance with the marking statute,<sup>185</sup> so a failure to appropriately track when and what modifications are made to the site would ultimately impact a patentee's ability to obtain damages.

While this article generally argues for interpretations that promote certainty for patentees, this is an area where flexibility is likely needed because what patentees must do to meet this burden likely depends on their specific situations. If a patentee owns very few patents, it may not need to change its virtual marking website for many years, perhaps even up to twenty years.<sup>186</sup> In these cases, proving that the website did not change could be very easy; including the date that the site was last updated on the page could very well be sufficient. However, if a patentee owns thousands of patents, it may find itself changing its site much more often.<sup>187</sup> These patentees would

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deceptive intent.”); *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 572 U.S. 545, 555 (2014) (“[A] district court may award fees in the rare case in which a party’s unreasonable conduct—while not necessarily independently sanctionable—is nonetheless so ‘exceptional’ as to justify an award of fees.”).

183. See McCaffrey, *supra* note 5, at 369 (“Patentees must change their marks when their patents expire or become invalid in the course of litigation. But high manufacturing costs prevent patentees from changing their marks cheaply and efficiently. Virtual marking would enable patentees to change their marks as quickly and easily as posting to a blog or sending an e-mail message.”).

184. See *id.* at 396 (“To get the maximum benefit from virtual marking, patentees should be permitted to modify their sites liberally.”).

185. *Nike, Inc.*, 138 F.3d at 1447 (citing *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098, 1111 (Fed. Cir. 1996)) (noting that “compliance with the marking statute is a question of fact, and the burden of proving compliance with the marking statute is upon the patentee”).

186. Under current law, the term of a patent is twenty years. See 35 U.S.C. § 154(a)(2) (2015) (providing that the “grant [of a patent] shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States or, if the application contains a specific reference to an earlier filed application . . . from the date on which the earliest such application was filed.”). Theoretically, then, a patentee with a single patent could leave its website untouched for twenty years, until the patent expires.

187. One scholar has suggested that patentees are “significantly more likely to use virtual marking if they have a large patent portfolio,” so this may be the most likely scenario. See de Rassenfosse, *supra* note 12, at 17.

likely need to do more to provide notice of potential changes. One possibility is keeping a detailed changelog of the virtual marking site.<sup>188</sup>

Some scholars have suggested different solutions to this problem, such as providing a public registry, creating a notification system for users who subscribe to a given marking site, or using blockchain to maintain a distributed ledger of changes.<sup>189</sup> While these solutions are interesting and may each work for some patentees, none are perfect as a blanket solution. A public registry could raise additional questions about the mechanics of virtual marking.<sup>190</sup> Additionally, a close comparison to a potential public registry, the online database for trademarks,<sup>191</sup> does not provide the notice required to collect post-registration damages despite providing nationwide constructive notice of the registration.<sup>192</sup> Given the close similarity between the trademark and patent marking requirements,<sup>193</sup> it should give courts pause to diverge the two requirements with respect to the impact of a public registry on constructive notice.

Further, requiring a notification system could create additional costs for patentees, if such a feature could not easily be built into their existing websites.<sup>194</sup> A major goal of virtual marking is to reduce costs for patentees, so increased development costs could undercut

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188. See McCaffrey, *supra* note 5, at 396 (suggesting that “patentees should also be required to keep records of all past revisions as evidence of the contents on a particular date or range of dates.”).

189. See *id.* (“Any virtual marking website should include a notification system that alerts members of the public who subscribe to it that a particular page has been updated. A public registry would ensure consistency in the structure and appearance of product pages and also guarantee that records of past revisions were available as required by law.”); de Rassenfosse, *supra* note 12, at 18 (“[V]irtual patent marks are scattered across the Internet, hosted on assignees’ web sites that may be temporarily unavailable. Defendants could use such elements in court to argue against proper marking. Recent advances in distributed computing (i.e., blockchain technology) could be exploited to address these deficiencies. In particular, a distributed ledger, which contains information that is available to all—and verifiable by all—at any time, could be implemented.”).

190. It might be difficult to determine, for instance, how individual products are mapped to patents on a public registry site. One can imagine a system that requires the public to search for specific products, which might be burdensome in cases when the actual patentee’s name is unclear. Similarly, the routing scheme for such a wide-ranging system could produce fairly long URLs, which might cut against the goal of marking on small products. See *supra* Part II.C.

191. See U.S. PATENT & TRADEMARK OFFICE, *Search Trademark Database*, <https://www.uspto.gov/trademarks-application-process/search-trademark-database> (last visited Aug. 24, 2020) (explaining how to use the USPTO’s trademark database to search for specific marks).

192. See *supra* notes 105-108 and accompanying text.

193. See *Nat’l Prods., Inc. v. Arkon Res., Inc.*, No. C15-1553RSL, 2017 WL 497678, at \*1 (W.D. Wash. Feb. 7, 2017) (noting that “the trademark notice provision is similar to that found in patent law”).

194. See, e.g., Ilya Pozin, *How Much Does a Website Cost?*, FORBES (Aug. 7, 2013), <https://www.forbes.com/sites/ilyapozin/2013/08/07/how-much-does-a-website-cost/#378a>

that potential benefit.<sup>195</sup> The additional effort and cost to implement such a system could further undercut another goal of patent marking more generally: “encouraging patentees to give notice to the public.”<sup>196</sup> While virtual marking is optional, the fact that it is designed to decrease costs for patentees should discourage the imposition of additional costs on those who wish to take advantage of virtual marking.

Notably, the USPTO currently offers an alert system for when certain specified keywords appear in a patent application that is published.<sup>197</sup> One can use this tool to search on a particular patentee’s name to receive future notifications of that patentee’s applications.<sup>198</sup> This feature works only for published applications; the USPTO would need to expand the system to alert when patents are eventually issued.<sup>199</sup> It is likely that if Congress desires such a notification system for patent marking purposes, however, the cost to the USPTO to expand its existing notification system is much lower in aggregate than requiring individual patentees to each craft their own notification systems.

Using blockchain, while perhaps the most interesting option, could also be the most challenging for patentees. Many companies are still working to develop blockchain capability,<sup>200</sup> and it does not seem likely that patent marking is the use that will motivate further development in this area.<sup>201</sup> Additionally, the average investment required

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51bc416d (noting that specific features, and details about those features, can significantly impact development time and pricing for a website).

195. See H.R. REP. NO. 112-98, at 52-53 (2011) (“This amendment will save costs for producers of products that include technology on which a patent issues after the product is on the market, and will facilitate effective marking on smaller products.”).

196. See *Nike, Inc.*, 138 F.3d at 1443.

197. *Patent Application Alerts – Frequently Asked Questions*, PATENT APPLICATION ALERT SERVICE (2020), <https://www.uspatentappalerts.com/faq.php> (informing users that this system provides alerts “when an application matching [the user’s] search criteria is published”).

198. After creating an account, one can create a new alert, which includes a field for “Assignee” (i.e., the patentee). *New Alert*, PATENT APPLICATION ALERT SERVICE (2020), <https://go.uspatentappalerts.com/alert.php>. For example, a test search conducted by the author on August 31, 2020 yielded four recently published patent applications for assignee “Apple, Inc.”

199. *Patent Application Alerts*, *supra* note 197 (noting that the tool “only searches the group of applications published the prior week”).

200. See Brant Carson et al., *Blockchain Beyond the Hype: What Is the Strategic Business Value?*, MCKINSEY (June 2018), <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value> (“Despite the hype, blockchain is still an immature technology, with a market that is still nascent and a clear recipe for success that has not yet emerged. Unstructured experimentation of blockchain solutions without strategic evaluation of the value at stake or the feasibility of capturing it means that many companies will not see a return on their investments.”).

201. See generally IBM, *Blockchain Use Cases*, <https://www.ibm.com/blockchain/use-cases/> (last visited Aug. 27, 2020) (identifying a number of compelling uses for

to implement blockchain for many companies is quite high,<sup>202</sup> which could cut against virtual marking's goal of reducing costs to patentees. If a company already had a significant blockchain infrastructure, however, it could potentially leverage that to manage any changes to its virtual marking site.

Because patentees should be allowed to modify their sites as necessary,<sup>203</sup> and they bear the burden of proof in establishing constructive notice,<sup>204</sup> the steps that patentees take to establish notice when their sites are modified should largely be left up to them. A patentee who hardly ever updates its site should not be required to implement a potentially costly notification system, but a patentee with thousands of patents probably needs to do more than include only a date at the bottom of the page. Some of the solutions offered by commentators could work for certain patentees with complex sites or well-developed blockchain capabilities, and perhaps the USPTO could consider expanding its notification system for patent applications to cover issued patents, if patentees so desire. In any case, the marking statute provides that damages begin accruing when the infringer was on constructive notice of the patent.<sup>205</sup> So long as each patentee can determine and demonstrate when the infringer would have been on notice of the patent, the exact manner by which they make that determination can vary.

Overall, the dictionary definition of "posting," the USPTO's apparent interpretation of the word, and the risk of inadequate notice all cut toward a posting being a single webpage. While a broader definition may provide some limited benefits for patentees, those benefits simply do not outweigh the other considerations, and may indeed come into conflict with providing adequate notice to the public. Further, due to the transience of websites, patentees should make extra

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blockchain technology, including healthcare, customs declarations, and regulatory compliance).

202. ERNST & YOUNG LLP, TOTAL COST OF OWNERSHIP FOR BLOCKCHAIN SOLUTIONS 13 (Apr. 2019), [https://www.ey.com/Publication/vwLUAssets/ey-total-cost-of-ownership-for-blockchain-solutions/\\$File/ey-total-cost-of-ownership-for-blockchain-solutions.pdf](https://www.ey.com/Publication/vwLUAssets/ey-total-cost-of-ownership-for-blockchain-solutions/$File/ey-total-cost-of-ownership-for-blockchain-solutions.pdf) (estimating that for the average client situation, the cost to implement blockchain over five years exceeds \$300,000).

203. See McCaffrey, *supra* note 5, at 396 ("To get the maximum benefit from virtual marking, patentees should be permitted to modify their sites liberally.").

204. *Nike, Inc.*, 138 F.3d at 1447 (citing *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098, 1111 (Fed. Cir. 1996)) (noting that "compliance with the marking statute is a question of fact, and the burden of proving compliance with the marking statute is upon the patentee").

205. See 35 U.S.C. § 287(a) (2013) ("In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice.").

effort to ensure they are providing adequate notice and maintaining records of what changes they make to their sites, which will depend on their specific facts. As a result, “posting” should be interpreted to mean a single webpage that is not the homepage wherein modifications are appropriately tracked by the patentee. Congress, the USPTO, or the courts should also consider establishing a standard using the “nines” metric to determine what level of uptime is needed for adequate notice to be achieved. In the absence of these standards, patentees should look to ensure that their virtual marking sites reasonably convey to potential infringers that their products are covered by specific patents, ideally by using a single page with some system for tracking changes to the virtual marking site.

#### B. DEFINING “ASSOCIATES”

The primary challenge raised by the term “associates” is that it is unclear what exactly is required to “associate” a specific product with a patent number on a virtual marking website. The relevant dictionary definition of “associate” is to “connect (something) with something else because they occur together or one produces another.”<sup>206</sup> One reading of this definition suggests a requirement to create a clear link between products and patents. However, an argument could be made that if the word “connect” is interpreted broadly, that simply providing a list of patent numbers, and nothing else, is sufficient notice. After all, the person searching for the patent already knows that the patentee makes a certain product; thus, the inclusion of patent numbers alone might be enough to “connect” the product to the patent in some cases, especially if the patentee does not sell many products.

While it does not appear that the USPTO has made an interpretation of this term, one district court has addressed the issue in some detail.<sup>207</sup> In *Manufacturing Resources International v. Civiq Smartscales*,<sup>208</sup> the court noted that the association requirement is designed to “provide[] a level of notice commensurate with that of physical marking.”<sup>209</sup> By contrast, it added, “[m]ere direction to a general website listing patents for all the patentee’s products does not create this same association.”<sup>210</sup> In holding that the patentee did not provide adequate notice to potential infringers, the court highlighted

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206. OXFORD UNIV. PRESS, *Associate*, LEXICO, <https://www.lexico.com/en/definition/associate> (last visited Aug. 24, 2020).

207. *See* Mfg. Res. Int’l, Inc. v. Civiq Smartscales, LLC, 397 F. Supp. 3d 560, 577 (D. Del. 2019).

208. 397 F. Supp. 3d 560 (D. Del. 2019).

209. *Civiq Smartscales*, 397 F. Supp. at 577.

210. *Id.*

that a list of patents, without a more explicit connection to specific products, “merely creates a research project for the public.”<sup>211</sup>

This is analogous to the real property context in particular. In one case, a court held that a purchaser was not on notice of a covenant that applied to his land but was included only in the conveyance from the same grantor to another purchaser.<sup>212</sup> This and other similar holdings seem underpinned by the fact that while doing so is possible, forcing purchasers to check every conveyance by every person in the chain of title would “impose an intolerable burden.”<sup>213</sup> In other words, such a scheme would “create[] a research project for the public.”<sup>214</sup>

Considered broadly, lessons from other areas of the law teach that notice is adequate when the relevant public could be reasonably expected to take notice of a given fact.<sup>215</sup> Given that the relevant inquiry is whether a potential infringer is on notice that a specific product is covered by a specific patent,<sup>216</sup> it does not seem that we could reasonably expect someone to take that notice if given only a list of patents without reference to specific products.

From the dictionary definition, we know that to associate a patented product with a patent number, it must connect the two items. Given the lessons from other areas of the law, as well as the District Court holding in *Civiq Smartscapes*, it seems clear that simply listing patent numbers with no further information does not sufficiently connect a product with the patent number. As a result, the interpretation of the word “associates” should reflect a higher standard. The author proposes that “associates” be interpreted to mean to specifically connect the patented product with the number of the patents used in the product.

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211. *Id.* (“[I]t is clear from the plain language of the statute itself and related statutes that the website itself must do more than simply list the patentee’s patents. Simply listing all patents that could possibly apply to a product or all patents owned by the patentee on the patentee’s marking website does not give the public notice. It merely creates a research project for the public.”).

212. *See Hancock v. Gumm*, 107 S.E. 872, 877 (Ga. 1921) (“[W]here a recorded deed to a lot forming part of a larger tract contains restrictive covenants, which by the terms of the deed are not only to apply to the lot conveyed, but, as in this case, to other lands of the grantor, a purchaser of one of the lots is not charged with notice of the covenant contained in a prior deed from the common grantor to another lot or parcel of the general tract.”).

213. *Glorieux v. Lighthipe*, 96 A. 94, 96 (N.J. 1915).

214. *Civiq Smartscapes*, 397 F. Supp. 3d at 577.

215. *See supra* Part IV.

216. *See Stryker Corp. v. Zimmer, Inc.*, 782 F.3d 649, 660 n.5 (Fed. Cir. 2015), *vacated on other grounds*, 136 S. Ct. 1923 (2016) (“[T]he plain language of the marking statute provides that the patented article be marked with the ‘number of the patent.’”).

## C. INSERTION OF TITLE REQUIREMENT

These interpretations still leave one key problem unaddressed: the possibility that even if the requirements are otherwise met, patentees may provide so many patent numbers that it becomes untenable to understand all patents covering a specific product.<sup>217</sup> An example of this issue, as illustrated previously, is LG's virtual marking site, which lists 626 patents for one individual product, the "Optim G E970."<sup>218</sup> One scholar has posited that this is not adequate notice,<sup>219</sup> and this seems to be a reasonable conclusion. At a minimum, it is inconsistent with the patent marking goal of "helping to avoid innocent infringement."<sup>220</sup> It is possible, perhaps even likely, that a potential infringer, even when conducting a good faith effort to avoid infringement, might overlook a claim that potentially reads on its product when given such a large number of patents to examine.

To address this problem, one potential solution is to limit the number of patents a patentee can list for a given product.<sup>221</sup> However, "any limit that Congress impose[s] would be arbitrary."<sup>222</sup> An arbitrary limit on the number of patents would not be fair to patentees. Patents represent a *quid pro quo* between the inventor and the public; the inventor discloses how to make and use the invention to the public in exchange for a temporary monopoly on the invention.<sup>223</sup> Because patents must be useful, novel, and nonobvious, each patent presumably "represents a unique . . . invention."<sup>224</sup> If we ask patentees to limit their marking sites to list only a certain number of patents, we are effectively asking them to surrender their benefit in the *quid pro quo* for some inventions; the public already has the invention,

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217. See *supra* Part III.B.

218. See LG, *Patent*, <https://www.lg.com/us/patent> (last visited Aug. 24, 2020).

219. See McCaffrey, *supra* note 5, at 394-95 ("Allowing patentees to list thousands of patent numbers with no guidance for the public does not provide adequate notice.")

220. See *Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1443 (Fed. Cir. 1998).

221. McCaffrey, *supra* note 5, at 395 (suggesting that Congress could "provide a limit to the number of valid patents that can be listed for a single product" or "enforce a reasonable limit by preventing patentees from adding more than a predetermined number of marks to a product page").

222. *Id.*

223. Ben McEniery, *Patent Eligibility and Physicality in the Early History of Patent Law and Practice*, 38 U. ARK. LITTLE ROCK L. REV. 175, 175 (2016) ("It is uncontroversial that the patent system exists to provide an incentive to encourage the invention and commercialization of new products and processes and the disclosure by the patent applicant of information sufficient to enable a person skilled in the relevant field of technology to reproduce the claimed invention. This disclosure is the *quid pro quo* of the patent system; it is the benefit the public receives in exchange for the State bestowing monopoly rights on a private individual.")

224. Dmitry Karshedt, *Damages for Indirect Patent Infringement*, 91 WASH. U. L. REV. 911, 929 n.91 (2014); see also 35 U.S.C. §§ 101-103 (2012) (providing requirements for utility, novelty, and non-obviousness).

but now the patentee is limited in its ability to enforce its monopoly on the patents that it is unable to list. While it would help avoid especially large lists of patents, simply placing an arbitrary cap on the number of patents a patentee can list is not the best solution to this problem.

Alternatively, there is no requirement that patent marking language contain *only* the patent number. In fact, for eighty-five years, patentees were required to mark the dates of their patents on products instead of the patent number.<sup>225</sup> In addition, copyright law requires that works be marked with three elements for proper notice: the copyright symbol, the copyright owner's name, and the year of first publication.<sup>226</sup> With that in mind, it is fair to believe that more information about the patent can be included, particularly on a virtual marking website, where space is "theoretically limitless."<sup>227</sup>

There is one component of a patent that is fairly succinct and can convey significant meaning about the focus of the patent: the title. According to the USPTO, the title of the invention should be less than 500 characters "but technically accurate and descriptive" of the invention.<sup>228</sup> Further, if a patent applicant does not provide a descriptive title, the examiner may suggest a new title to the applicant or simply amend the title.<sup>229</sup> With this in mind, the title may be an appropriate component to add to the virtual marking requirements.

At least one patentee has already begun including this information on its virtual marking site: General Mills.<sup>230</sup> While this site does not organize by specific product,<sup>231</sup> the benefit of the title's presence can clearly be seen. Assume for example, that a competitor wants to create a new line of frozen pizzas. By looking through the list of patents on General Mills' site, this competitor can quickly distinguish patents that may be relevant (e.g., "Pizza Product," "Cheese Composi-

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225. See Goryunov & Polyakov, *supra* note 22, at 3 (noting that beginning in 1927, patentees were required to include the patent number rather than the date, which was originally required in 1842).

226. See UNITED STATES COPYRIGHT OFFICE, *supra* note 120, at 1.

227. See McCaffrey, *supra* note 5, at 395.

228. U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 601 (Nov. 2015), <https://www.uspto.gov/web/offices/pac/mpep/mpep-0600.pdf>.

229. See *id.* at § 606.01 ("Where the title is not descriptive of the invention claimed, the examiner should require the substitution of a new title that is clearly indicative of the invention to which the claims are directed. . . . This may result in slightly longer titles, but the loss in brevity of title will be more than offset by the gain in its informative value in indexing, classifying, searching, etc. If a satisfactory title is not supplied by the applicant, the examiner may, at the time of allowance, change the title by an examiner's amendment.").

230. GENERAL MILLS, *supra* note 37 (including not only patent numbers but also patent titles).

231. See *id.* (containing broad categories such as "Baking" and "Meals" instead of specific product offerings).

tions and Related Methods”) from those that may not be relevant (e.g., “Dumpling Producing Method and Device,” “Square Bottom Taco Shell”).<sup>232</sup> While this is not an airtight solution—some patents are still titled vaguely<sup>233</sup>—it seems much more reasonable to hold someone on notice that a product is covered by a patent when the title is provided along with the patent number.

Including the titles of patents is not a heavy burden for patentees; after all, the space available on virtual marking sites is essentially limitless.<sup>234</sup> For patentees with large numbers of patents, adding the title will significantly aid the public in avoiding innocent infringement. While it may require some marginal additional effort on the part of the patentee’s website developer, this seems a small price to pay for the additional notice afforded by the presence of patent titles.

If patentees wish to further enhance the notice provided by their virtual marking websites, they could include even more information beyond just the title and the product number. For example, patentees could also include images of specific products<sup>235</sup> or links to the patent documents themselves.<sup>236</sup> While these additions, and perhaps even others not listed here, could help the public avoid innocently infringing, each additional requirement could also result in higher costs for patentees<sup>237</sup> and could risk creating information overload or fatigue to the public.<sup>238</sup> Simply requiring a title strikes a good balance here, as

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232. *See id.*

233. *See id.* (listing patent titles such as “Food Product” and “Label”).

234. *See* McCaffrey, *supra* note 5, at 395.

235. LBP, a manufacturer of various food and beverage containers, has included images of its products on its virtual marking site. *See* LBP, *Patents* (Nov. 4, 2019), <https://www.lbpmsg.com/patents/> [<https://web.archive.org/web/20191104175922/https://www.lbpmsg.com/patents/>]. This addition could be particularly useful for patentees whose products do not have immediately clear names, such as the coffee containers and beverage sleeves patented by LBP. *See id.*

236. While the author was not able to locate a specific virtual marking webpage that does this in practice, the mechanics would be relatively simple. Many public registries exist for obtaining patent documents. *See, e.g.,* GOOGLE, *Google Patents*, <https://patents.google.com/> (last visited Aug. 24, 2020); U.S. PATENT & TRADEMARK OFFICE, *USPTO Patent Database*, <http://patft.uspto.gov/netahtml/PTO/index.html> (last visited Sept. 5, 2020); EUROPEAN PATENT OFFICE, *Espacenet*, <https://worldwide.espacenet.com/> (last visited Aug. 24, 2020). Patentees could either link to the entries stored on one of these sites or maintain the patent documents on their own servers and link to those documents. Either way, this would eliminate the additional step for the public of looking up the patent once obtaining the patent number from the virtual marking website.

237. Depending on the products, it may not be easy or desirable for some patentees to provide images of each product on their virtual marking sites. Similarly, storage considerations may make it difficult for certain patentees to store and link to patent documents for all patents they own, especially if they own hundreds or thousands of patents. Locating and storing all patent documents could be a much more costly task than including only the title along with the patent number.

238. *See* Oren Perez, *Complexity, Information Overload, and Online Deliberation*, 5 I/S: J.L. & POL’Y INFO. SOC’Y 43, 56 (2009) (discussing the concept of information over-

it is short and should be relatively simple to add to the page as it consists of only additional text.

As a result of this analysis, the author recommends requiring that all patentees include the title of the patent along with the patent number on their virtual marking websites. This would be a simple amendment; Congress could simply insert the words “and title” into the marking statute where appropriate. In context, 35 U.S.C. § 287(a) would then read, in relevant part, “a posting on the Internet . . . that associates the patented article with the number *and title* of the patent.” Even in the absence of such an amendment, however, patentees are not prohibited from including additional information on their virtual marking sites, and could enhance the notice effected by their sites by including the title and perhaps even other additional information about the patents.

## VI. CONCLUSION

Virtual marking was implemented to reduce costs for patentees and facilitate easier marking on small products, but it has not been widely adopted. It is quite likely that greater certainty surrounding the requirements for virtual marking could lead to increased adoption. As a result, this article proposes that for purposes of the virtual marking statute, “posting” be interpreted as a single webpage that is not the homepage and has some system for managing changes, and “associates” be interpreted to mean specifically connecting the patented product with the number of the patents used in the product. Further, the article proposes that Congress insert the words “and title” into the statute, such that patentees are required to include the title of the patent along with the patent number on virtual marking webpages.

To implement these interpretations, the author recommends that courts begin applying the interpretations of “posting” and “associates” as marking issues come up, and the author also urges the United States Patent and Trademark Office (“USPTO”) to promulgate these interpretations as appropriate in its guidance. Further, Congress appears poised to provide new rules for patent eligibility in the near future;<sup>239</sup> the author proposes including the new statutory language in this bill, should it be further considered.

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load and noting that “[t]here are numerous studies that demonstrate that the capacity of the human mind to deal with extensive amounts of information—in terms of attention resources, memory, and processing (computation)—is highly limited”).

239. Christopher P. King, *Patent Eligibility Reform in Congress: Updates on the Tilis-Coons Proposal*, MONDAQ (Aug. 21, 2019), <https://www.mondaq.com/unitedstates/Intellectual-Property/838446/Patent-Eligibility-Reform-In-Congress-Updates-On-The-Tilis-Coons-Proposal>.

Of course, there is nothing stopping a patentee from abiding by these recommendations immediately. Given the discussion in this article, it seems highly unlikely that any court would find a single webpage that associates patent numbers with specific products, and includes titles, as providing inadequate notice under the marking statute, particularly given courts' "long-standing focus on the notice effected by the method of marking the patented article rather than on the precise mechanistic compliance with the statute."<sup>240</sup> Patentees who are looking to employ virtual marking, but have concerns about the requirements, should feel comfortable that a marking strategy as described herein should be sufficient to provide adequate notice.

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240. *Rutherford v. Trim-Tex, Inc.*, 803 F. Supp. 158, 161 (N.D. Ill. 1992).

