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A Novel, Nonobvious Approach to Curb Abusive Patent Litigants

Zachary H. Valentine*

INTRODUCTION

Imagine the following scenario: A young innovator sits in his basement, meticulously coding podcasting software that, in his opinion, will change the course of the industry. The innovator tirelessly perfects the invention after work during the week, eventually to the point where he wants to patent his new invention and reap the rewards of his relentless labor. The young innovator files with the United States Patent and Trademark Office, receives a patent, and opens up an online retailer to sell his software. A few years later, after the software has seen new updates and has graduated into retail stores and large ecommerce sites, the innovator receives a cease and desist letter from a company that he has never heard of in essence stating that his software infringes on a patent that covers a "system for disseminating media content representing episodes in a serialized sequence," and further threatens a patent infringement lawsuit if

^{*} Candidate for Juris Doctor, Roger Williams University School of Law, 2016; B.S. in Biology, Salve Regina University, 2011. I would like to thank my family for providing me with a continuing source of inspiration. I also want to thank Scott DePasquale for his thoughtful conversations about patent trolls, which ultimately resulted in my writing this Comment.

^{1.} U.S. Patent No. 8,112,504, at [54] (filed Mar. 4, 2009) (issued Feb. 8, 2012). This patent was eventually invalidated after being challenged by the Electronic Frontier Foundation ("EFF") before the Patent Trial and Appeal Board, but not before plaintiff Personal Audio extorted famous podcaster Adam Carolla into settling for an unknown sum, and also walked away with a \$1.3 million jury verdict against CBS. See Elec. Frontier Found. v. Pers. Audio, No. IPR2014-00070, No. 41 at 29 (P.T.A.B. April 10, 2014); Joe Mullin,

he refuses to shell out \$100,000.

Unfortunately, this hypothetical innovator has encountered one of the biggest problems currently stifling innovation.² Patent trolls, or "patent assertion entities"—to be politically correct—are patent holders that, in one way or another, obtain patents merely to generate money through litigation rather than utilizing their exclusive patent rights to create something new or practice the field of art.³ These patent trolls hunt small businesses and large corporations alike by using egregious tactics to manipulate inventors into abandoning their hard work and extort individuals and organizations into paying licensing fees.⁴ Their modus operandi is straightforward, although it differs depending on the size of their prey. Patent trolls often hunt large corporations in open court via infringement lawsuits.⁵ Although one would think that the justice system would be a fair battleground, the diligent patent trolls forum shop, seeking inconvenient courts with rocketdocket schedules, plaintiff-friendly verdicts, troll-friendly judges, and jurors of limited education and technological sophistication.⁶ However, when the trolls approach smaller prey, they do so with their hands under their trench coats—by sending threatening letters to mom-and-pop businesses via certified mail.⁷ To date, patent trolls have ultimately been able to weasel away with over a half trillion dollars in wealth that could be going towards other areas of the economy.8

Infamous "Podcasting Patent" Knocked Out, ARS TECHNICA (Apr. 10, 2015, 6:00 PM), http://arstechnica.com/tech-policy/2015/04/infamous-podcasting-patent-knocked-out-in-patent-office-challenge/.

4. Patricia S. Abril & Robert Plant, *The Patent Holder's Dilemma: Buy, Sell, or Troll?*, COMMC'NS. ACM., Jan. 2007, at 36, 43.

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^{2.} See William J. Watkins, Jr., Patent Trolls: Predatory Litigation and the Smothering of Innovation 2 (2013).

^{3.} *Id.* at 11.

^{5.} See, e.g., Jeremiah Chan & Matthew Fawcett, Footsteps of the Patent Troll, 10 Intell. Prop. L. Bull. 1, 2 (2005).

^{6.} See Watkins, supra note 2, at 30–32.

^{7.} See, e.g., Daryl Lim, Standard Essential Patents, Trolls, and the Smartphone Wars: Triangulating the End Game, 119. PENN St. L. Rev. 1, 82–83 (2014) ("PAEs have also targeted end users such as retailers using Wi-Fi equipment instead of implementers who make the equipment. Earlier in 2011, one PAE, Innovatio, sent more than 8000 letters to hotels, coffee shops, and restaurants who used technology by Cisco and Motorola, alleging patent infringement.").

^{8.} WATKINS, *supra* note 2, at 16.

This issue is all but unrecognized on a nationwide scale: in the current legal field, "[p]atent trolling is at the top of legislative and regulatory reform agendas at many levels." Congress, the White House, state legislatures, and private entities have all tried their hands at remedying the nuisance. Additionally, the Federal Trade Commission ("FTC") has been scrutinizing patent abusers to weed out questionable practices, and the United States Patent and Trademark Office ("USPTO") has made several efforts to increase patent quality. While most efforts have been lackluster in terms of curbing the abusive tactics of patent assertion entities, the most effective bulwark thus far has been the United States Supreme Court. In 2014 alone, the Court accepted seven patent-centric writs of certiorari—resulting in six

^{9.} Robin Feldman & W. Nicholson Price II, *Patent Trolling: Why Bio & Pharmaceuticals Are at Risk*, 17 STAN. TECH. L. REV. 773, 774 (2014).

^{10.} See, e.g., STRONG Patents Act of 2015, S. 632, 114th Cong. (2015); VT. STAT. ANN. tit. 9, §§ 4195–4199 (2014); EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION (2013), https://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf; Sarah Mitroff, Mark Cuban's 'Chair to Eliminate Stupid Patents' Just Got Filled, WIRED (Dec. 20, 2012, 6:30 AM), http://www.wired.com/2012/12/eff-patent-donation/. See also Richard Mannella & Julie A. Hopkins, Patrolling the Patent Trolls: Ongoing Developments in US IP Law, ACC DOCKET, Dec. 2014, at 78, 80, available at http://us.practicallaw.com/4-590-9225 (follow "Click to download PDF" hyperlink).

^{11.} See, e.g., FED. TRADE COMM'N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (Mar. 2011), https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-market place-aligning-patent-notice-and-remedies-competition-report-federal-trade/ 110307patentreport.pdf; see also 15 U.S.C. § 46(b) (2006) (empowering the FTC to conduct sweeping economic studies of business practices, including patent assertion practices).

^{12.} See, e.g., Request for Comments on Enhancing Patent Quality, 80 Fed. Reg. 6475, 6477 (proposed Feb. 5, 2015) (to be codified at 37 C.F.R. pt. 1).

^{13.} See Feldman & Price, supra note 9, at 774–75.

^{14.} See, e.g., Alice Corp. v. CLS Bank Int'l, 134 S. Ct. 2347, 2352 (2014) (holding that process patents directed at an abstract idea ineligible subject matter unless the process amounts to substantially more than the abstract idea; applying an abstract idea with a form of technology does not meet this standard); MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118, 137 (2007) (holding that a licensee need not breach a licensing agreement in a declaratory judgment for non-validity); eBay, Inc. v. MercExchange, LLC, 547 U.S. 388, 394 (2006) (requiring patent holders seeking permanent injunctive relief to meet the traditional four-factor equitability test).

unanimous opinions ¹⁵ and one 7-2 decision ¹⁶—that can be read as a strategic effort to both close the door on patent trolls and discourage unmeritorious litigation. ¹⁷ However, the results will be unsurprisingly disappointing because clever trolls can inherently move more quickly than the Court and will actually be able to take advantage of some of these decisions moving forward. ¹⁸ While the Court is mostly setting up downstream barricades (i.e., trying to deter abusive patent holders from bringing unmeritorious claims), the lacerations in the patent system left as a result of the trolls cannot be remedied without extensive upstream blockades (i.e. not granting patent trolls patents to abuse in the first place). In this sense, areas ripe for mending are located within the patentability inquiry: the novelty and nonobviousness requirements.

This Comment begins with Part I, which introduces the problem of patent trolls and their history. Part II analyzes how the Court has been addressing the issue of patent trolling, as well as its overall (in)effectiveness. In Part III, I will predict some problems that may arise due to the Court's recent efforts and will argue that, despite the push, patent trolls will respond by changing their methods to target the patentability analysis out of court. Finally, Part IV will argue that, because of this predicted shift in patent troll behavior, narrowing the novelty and nonobviousness analyses through the judiciary will be the most effective way to mend the patent system without leaving good faith innovators handicapped. By narrowing these patentability inquiries, the Court will not only fend off abusive patent litigation, but will also discourage trolls from purchasing dated patent rights altogether, a common troll motif. 19 This approach is inherently the next logical step in light of recent decisions, and the results

^{15.} Alice, 134 S. Ct. 2347; Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120 (2014); Limelight Networks, Inc. v. Akamai Techs., Inc., 134 S. Ct. 2111 (2014); Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749 (2014); Highmark Inc. v. Allcare Health Mgmt. Sys., Inc., 134 S. Ct. 1744 (2014); Medtronic, Inc. v. Mirowski Family Ventures, LLC, 134 S. Ct. 843 (2014).

^{16.} Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831 (2015).

^{17.} See Mannella & Hopkins, supra note 10, at 82, 84.

^{18.} See infra Part II.B.

^{19.} See Watkins, supra note 2, at 13; Chan & Fawcett, supra note 5, at 2–4.

will be analogous to the aftermath of the Court's recent decision in *Alice Corp. v. CLS Bank International*, which addressed patent eligibility for processes directed toward an abstract idea.²⁰ While tinkering with the patentability analysis will ultimately lead to fewer available patents, even for even good faith innovators, it will reduce the number of ambiguous patents for trolls to acquire, thereby decreasing litigation arising from vexatious plaintiffs while simultaneously discouraging threats behind closed doors. By adhering to this method, the Court will also be able to fulfill the ultimate constitutional goal of the patent system: promoting useful arts by only rewarding truly innovative creators the powers of exclusivity.²¹

I. TROLLING FOR DOLLARS

Patent trolls currently present a substantial threat to the United States economy.²² Of all the colloquialisms, they are the legal equivalent of the bad apple that spoils the whole bunch. These individuals and entities confidently feed off the current system because, realistically, when the cost to defend a suit against a troll can range in the tens-to-hundreds-of-millions,²³ it is more economical for a defendant to give into their shakedown than to pay the costs associated with civil discovery.²⁴

^{20.} See 134 S. Ct. at 2352. See also Donald Zuhn, USPTO Holds Forum on Interim Guidance—Part III, PAT. DOCS (Feb. 19, 2015 11:59 PM), http://www.patentdocs.org/2015/02/uspto-holds-forum-on-interim-guidance-part-iii.html ("[I]n the span of ten months, the allowance rate for business method art units had dipped from 24% in January to 5% in July to 3% in October.").

^{21.} U.S. CONST. art. I, § 8, cl. 8 (granting Congress the power "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries").

^{22.} See WATKINS, supra note 2, at 16–17.

See, e.g., Philip Elmer-DeWitt, How Apple Lost \$533 million to an 8th-grade dropout patent troll, FORTUNE (Feb. 27, 2015, 12:22 PM), http://fortune.com/2015/02/27/how-apple-lost-533-million-to-an-8th-gradedropout-patent-troll/ (\$533 million jury verdict against Apple Inc. awarded to patent troll); Joe Mullin, Symantec Must Pay \$17 Million to World's Biggest TECHNICA 9, 12:09 Patent Troll.Ars (Feb. 2015, http://www.arstechnica.com/tech-policy/2015/02/symantec-must-pay-17million-to-worlds-biggest-patent-troll/ (\$17 million verdict against Symantec Corp. awarded to patent troll).

^{24.} See John M. Golden, "Patent Trolls" and Patent Remedies, 85 Tex. L. Rev. 2111, 2129 (2007); see also Anna Mayergoyz, Comment, Lessons from Europe on How to Tame U.S. Patent Trolls, 42 CORNELL INT'L L.J. 241, 242–43

Additionally, by skirting the production of goods in commerce, abusive patent holders entirely obviate the Constitution's explicit goals by hindering and discouraging innovation.²⁵ By now it should be patently evident that these "patent trolls" are on Santa's naughty list, but how did they get there in the first place?

Although patent trolls may make one think of the old "Norwegian fairy tale of Three Billy Goats Gruff," which featured "a troll living under [a] bridge, attacking any person or thing who dare[d] to cross," in reality, patent trolls are often inanimate, incorporated entities.²⁶ The "troll" denomination was coined by Intel Corporation's then-assistant general counsel Peter Detkin to describe "somebody who tries to make a lot of money off a patent that they are not practicing and have no intention of practicing and in most cases never practiced."27 More eloquently delineated as "nonpracticing entities" ("NPEs"), "patent assertion entities" ("PAEs"), or "patent monetizers," these patent holders characteristically own patent rights but only use them to "create" infringement litigation.²⁸ While these delineated categories all fall under the umbrella of the term "patent troll," and are often used synonymously, subtle differences exist between NPEs and $PAEs.^{29}$

Described simply, NPEs are "entit[ies] that own[] patents, but do[] not manufacture or market a product." Common examples that fall under this wide net include: (1) start-up companies that have not yet perfected their manufacturing processes; (2)

25. Cf. Leslie T. Grab, Note, Equitable Concerns of eBay v. MercExchange: Did the Supreme Court Successfully Balance Patent Protection Against Patent Trolls?, 8 N.C. J.L. & TECH. 81, 84 (2006).

^{(2009).}

^{26.} Watkins, supra note 2, at 11; see Chan & Fawcett, supra note 5, at 1–3.

^{27.} Mayergoyz, *supra* note 24, at 245 (quoting Brenda Sandburg, *Trolling for Dollars*, RECORDER, Jul. 30, 2001, at 1); *see also* Peter N. Detkin, *Leveling the Patent Playing Field*, 6 J. MARSHALL REV. INTELL. PROP. L. 636, 636 & n.3 (2007).

^{28.} WATKINS, supra note 2, at 11. See, e.g., Chan & Fawcett, supra note 5, at 1; Feldman & Price, supra note 9, at 773.

^{29.} For the sake of this Comment, the "patent monetizer" nomenclature is a mere tautology of the "PAE" nomenclature. PAEs inherently are patent monetizers because they seek to capitalize on the efforts of inventors by purchasing patents and using them as a weapon in commerce. See Feldman & Price, supra note 9, at 773–75.

^{30.} Mannella & Hopkins, *supra* note 10, at 77.

companies that once sold a product but ceased to continue; and, most controversially in terms of patent reform, (3) universities and research institutions (including their respective technology transfer offices).³¹ In the same vein, PAEs also do not manufacture anything, but what makes them particularly nefarious is their strategy to acquire extensive patent portfolios for the *sole purpose* of suing other market players for patent infringement.³² In this sense, PAEs can be considered more malicious than NPEs because they never have, are not currently, and most likely never will, produce anything other than adversity, and can be considered less trustworthy because of their tactics in obtaining and enforcing their patents.³³ While these tactics are frankly genius, they have come to reek of moral turpitude when viewed in the historical context of patent trolling.

A. The Patent Troll Adaptive-Evolution

In a sense patent trolling is all but old news: people have been milking the patent system since this nation's founding.³⁴ While the concept of exploiting patents might be old, as time has progressed, trolls' strategies have grown in complexity to keep up with the advancing technologies that they exploit.³⁵ Throughout this evolution, however, there has been a common theme: obtain and hold a patent for a soon-to-be-obsolete technology that is broad enough to cover whatever technology inevitably takes its place.³⁶

Patents are engrained in the Constitution as a method for Congress "[t]o promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive right to their . . . Discoveries." The essential goal—promoting the evolution of

^{31.} See id.; see also Brian Pomper, In Considering Patent Law Changes, Don't Forget Impact on Universities, IPWATCHDOG (Feb. 15, 2015), http://www.ipwatchdog.com/2015/02/15/patent-law-changes-impact-on-universities/.

^{32.} Mannella & Hopkins, supra note 10, at 77.

^{33.} See id.

^{34.} See generally Jeffrey H. Matsuura, Jefferson vs. The Patent Trolls: A Populist Vision of Intellectual Property Rights (2008).

^{35.} See WATKINS, supra note 2, at 1-5.

^{36.} See id. at 13.

^{37.} U.S. CONST. art. I, sec. 8, cl. 8. Today, the term "useful Arts" is considered to encompass the "technological arts." See In re Musgrave, 431

technology—was thought by many of the Founders to be served most effectively by granting creators monopolies for a limited amount of time.³⁸ Thomas Jefferson, who is at the forefront of patent trolling history, thought quite the opposite, 39 and it was likely he who encountered the first patent troll.⁴⁰ In these early days, although "[n]o one . . . was acting as a patent troll[] under [its] modern definition[,]... [t]here were, however, a growing number of inventors who were beginning to integrate licensing of rights to use patents into a deliberate commercial strategy."41 These early inventors would, in addition to manufacturing their own patented goods, license the rights to do so to other manufacturers in return for a royalty on the sales. 42 Although, this is a common method of doing business for both trolls and nontrolls, today this notion offended Jefferson, who believed that such a practice was "overreaching and [a] misuse of patent rights" that would ultimately "thwart the development of new applications and enhancements for existing devices and processes."43 Although the Court disagreed with him when the issue arose in litigation,⁴⁴ Jefferson is notably one of the first individuals to recognize that patent rights, if not utilized properly, could impede the progress of technology.45

Around the same time, Eli Whitney, a name every elementary school student in the United States recognizes as the famous inventor of the cotton gin, proved to be the originator (albeit not

- 40. See MATSUURA, supra note 34, at 101–02.
- 41. *Id.* at 101.
- 42. See id. at 101–02.
- 43. Id. at 102, 106.
- 44. See Evans v. Jordan & Morehead, 13 U.S. (9 Cranch) 199, 202 (1815).
 - 45. See Matsuura, supra note 34, at 106.

F.2d 882, 893 (C.C.P.A. 1970).

^{38.} See WATKINS, supra note 2, at 4.

^{39.} See Thomas Jefferson, Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 1 The Founders' Constitution 600–01 (Phillip B. Kurland & Ralph Lerner eds., 1987), available at http://press-pubs.uchicago.edu/founders/print_documents/v1ch16s25.html ("It has been pretended by some, (and in England especially,) that inventors have a natural and exclusive right to their inventions Inventions cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody.").

widely recognized by the legal community) of patent trolling strategies and acted as an NPE by today's standards.⁴⁶ After successfully obtaining a patent for the cotton gin,⁴⁷ Whitney's manufacturing company went out of business and discontinued production three short years later.⁴⁸ Thereafter, to monetize his patent, Whitney resorted to suing plantation farmers for patent infringement.⁴⁹ Similarly, George Selden, a patent attorney who is commonly recognized as the first patent troll, began operating as a PAE under the modern definition as early as 1895.⁵⁰ Selden "obtained a patent for automobile engine technology[,]" and "[t]hrough a holding company, he threatened to sue the automotive industry for patent infringement to obtain licensing fees." Today, patent trolls retain this fundamental practice.

To be successful, however, trolls need to obtain patents. To meet the growing demand, "patent sharks" began brokering patent ownership rights to trigger-happy litigants early in patent troll history. So As the technological renaissance progressed, "the market for patent trading and patent assertion has expanded dramatically," especially as newer, more efficient products outcompeted once-popular technologies. Nowadays, some patent trolls target despondent companies and either offer to purchase their patent, or more nefariously lurk around "bankruptcy auctions where patents of failed technology companies are offered for sale.... [This] ha[s] allowed many trolls to accumulate massive portfolios." S4

^{46.} See Mannella & Hopkins, supra note 10, at 78.

^{47.} U.S. Patent No. 9,957 (issued Mar. 14, 1794), available at http://www.archives.gov/education/lessons/cotton-gin-patent/ (last visited Feb. 14, 2015). The actual patent number is not actually known, but rather is a rough estimate. See Julian Trubin, Eli Whitney, The Invention of the Cotton Gin, Julian Trubin (June 2013), http://www.juliantrubin.com/bigten/whitneycottongin.html.

^{48.} See MITCHELL WILSON, AMERICAN SCIENCE AND INVENTION: A PICTORIAL HISTORY 80 (1954).

^{49.} See *id*.

^{50.} See Mannella & Hopkins, supra note 10, at 78.

^{51.} Id.

^{52.} See Feldman & Price, supra note 9, at 778.

^{53.} *Id.*; see also Watkins, supra note 2, at 13.

^{54.} WATKINS, supra note 2, at 13.

B. The Patent Troll Issue is Socially and Monetarily Expensive

Trolls famously target software patents, business method patents, and patents for outdated technologies because the turnaround is inherently guaranteed: Business method patents are plentiful and large corporations continue to update their technologies, rendering the last generation moot.55 Unsurprisingly, the very same corporations that are in the business of creating the usurping products are common targets for patent trolls.⁵⁶ To battle these corporate behemoths, trolls have evolved their simple "wait and sue" strategy into one that exploits the judiciary and manipulates the public: forum shopping.⁵⁷ However, the forum shopping tactic utilized by trolls is not necessarily based in conflicts of law, as it is generally. Trolls forum shop in the same way you or I would shop for groceries—in the same places every time.⁵⁸ And, in the same way our supermarkets encourage us to return, these for acontinue to graciously welcome patent troll lawsuits.⁵⁹

Generally, a troll's primary objective is to file suit in the United States District Court for the Eastern District of Texas, "the American mecca of patent litigation." In return, the Eastern District of Texas continuously hosts patent-holding plaintiffs with an open embrace. Recent statistics show that the Eastern District of Texas leads the nation in the number of patent suits filed, followed closely by the District of Delaware. Known trolls

^{55.} See Mannella & Hopkins, supra note 10, at 78; Gene Quinn, Business Methods by the Numbers: A Look Inside PTO Class 705, IPWATCHDOG (Jan. 22, 2012), http://www.ipwatchdog.com/2012/01/22/business-methods-by-the-numbers-a-look-inside-pto-class-705/.

^{56.} See, e.g., Brian Howard, Lex Machina Releases First Annual Patent Litigation Year in Review, Lex Machina (May 13, 2014), https://lexmachina.com/patent-litigation-review/ (listing Apple, Amazon, AT&T, and others as the companies facing the highest number of new patent infringement lawsuits in 2014).

^{57.} See David G. Barker, Comment, Troll or No Troll? Policing Patent Usage with an Open Post-Grant Review, 2005 Duke L. & Tech. Rev. 9, ¶ 7 (2005), available at http://scholarship.law.duke.edu/cgi/viewcontent.cgi? article=1129&context=dltr.

^{58.} See, e.g., Howard, supra note 56.

^{59.} See Watkins, supra note 2, at 31–32.

^{60.} Id. at 1.

^{61.} See id. at 31–32.

^{62.} See Howard, supra note 56. Lex Machina, a firm that analyzes

hold at least three of the top ten spots for the amount of patents asserted in court by plaintiffs, and, unsurprisingly, the most common defendants in these suits are large technology companies—Apple, Amazon, and AT&T.⁶³ While the Delaware and Eastern Texas district courts are roughly tied for the amount of patents cases that actually go to trial, plaintiffs filing in the Eastern District of Texas have an astoundingly high victory rate in comparison, estimated in past years as high as 78%.⁶⁴ The Eastern District of Texas is also notorious for its rocket-docket schedule crammed with patent infringement cases, as well as its propensity for lay-jury trials in these oftentimes hyper-technical suits.⁶⁵ Patent trolls literally set up shop within the Eastern District's jurisdiction to purposefully avail themselves to these

patent litigation trends and other patent-relevant variables, speculates that patent-plaintiffs may consider the District of Delaware "as an increasingly friendly venue" due to the fact that a hefty portion of companies are headquartered in the state. *Id.*

63. *Id.* Some critics believe that the percentage of patent-troll plaintiffs is closer to sixty percent:

Of the ten plaintiffs filing the most lawsuits, all are trolls. The most litigious troll last year was ArrivalStar, a company that Ars [Technica] first reported on in 2012 when the company started suing public transit agencies. ArrivalStar, run by Vancouver resident Martin Jones, agreed to back away from that strategy after a US transit group lawyered up, but it continues to sue a vast array of private companies using different forms of vehicle-tracking technology.

Looking at the ten most frequently asserted patents, seven of them are from the ArrivalStar family of patents describing vehicle-tracking technology. Other patents on the most-asserted list include ones that originated at AT&T, Xerox, and Stanford University but are now in the hands of various trolls.

Joe Mullin, *The Year in Patent Litigation: More Trolling, More Texas*, ARS TECHNICA (May 14, 2014, 1:27 PM) [hereinafter *2014 in Patent Litigation*], http://www.arstechnica.com/tech-policy/2014/05/the-year-in-patent-litigation-more-trolling-more-texas/.

64. See Watkins, supra note 2, at 29 (citing Julie Blackman, Ellen Brickman & Corinne Brenner, East Texas Jurors and Patent Litigation, Jury Expert (March 1, 2010), http://www.thejuryexpert.com/wp-content/uploads/BlackmanetalTJEMarch2010.pdf); 2014 in Patent Litigation, supra note 63.

65. See Watkins, supra note 2, at 29–31. Some commentators suggest that the issue of allowing lay juries to hear patent cases is another avenue to reform patent law to curb patent trolling. See, e.g., id. at 52–53; Rob Tiller, Another Idea for Addressing Patent Trolling: Eliminate Jury Trials, Opensource.com/ (Feb. 17, 2015), http://www.opensource.com/law/15/2/patent-reform-eliminate-jury-trials.

benefits and manipulate the public (i.e., potential jurors) along the way by "masquerade[ing] as nonprofit foundations and community do-gooders." 66 Moreover, of all the patent cases filed in the Eastern District of Texas, Judge Rodney Gilstrap sees more than triple the amount as any other judge in the district. 67

Trolls are able to lure defendants to their favorite forum by exploiting federal circuit law governing specific jurisdiction.⁶⁸ In patent infringement suits brought by troll-plaintiffs against large companies that deliberately market their products to consumers nationwide, "the jurisdictional inquiry is relatively easily discerned from the nature and extent of the commercialization of the accused products or services by the [company] in the forum" because "the claim both 'arises out of' and 'relates to' the [company's] alleged manufacturing, using, or selling of the claimed invention."⁶⁹ Therefore, many infringement defendants that fall target to trolls will be subject to the specific jurisdiction of the Eastern District of Texas.

On the other side of the coin, large companies cannot lure trolls away from their Eastern Texas forum. If a large company were to bring an action for declaratory judgment in response to an infringement claim "to clear the air of infringement charges," its cause of action would "neither directly arise[] out of nor relate[] to the making, using, offering to sell, selling, or importing of arguably infringing products in the forum, but instead [would] arise[] out of or relate[] to the activities of the [troll] in enforcing

^{66.} Watkins, supra note 2, at 17; see also id. at 30–32.

^{67.} See 2014 in Patent Litigation, supra note 63, at fig. 13.

^{68.} See Watkins, supra note 2, at 23–24. The jurisdictional analysis in infringement cases is familiar; courts look to whether the claim arises out of activities that the defendant (e.g., a large technology company) has directed towards the forum. See Breckenridge Pharm., Inc. v. Metabolite Labs., Inc., 444 F.3d 1356, 1363 (Fed. Cir. 2006). If the court answers in the affirmative, the court will then examine whether the jurisdictional assertion would be fair and reasonable for the defendant. Id. This places the burden on the defendant to "present a compelling case that the presence of some other considerations would render jurisdiction unreasonable under the five-factor test articulated in by the Supreme Court in Burger King [Corp. v. Rudzewicz]." Id. (quoting 471 U.S. 462, 476–77 (1985)); see also World-Wide Volkswagen Corp. v. Woodson, 444 U.S. 286, 292 (1980) (setting out a five-factor test for analyzing specific jurisdiction inquiries).

^{69.} Avocent Huntsville Corp. v. Aten Int'l Co., 552 F.3d 1324, 1332 (Fed. Cir. 2008).

the patent or patents in suit."⁷⁰ Thus, the jurisdictional inquiry shifts from one focusing on activities *arising from* the forum to activities that are *related to* the forum, which, for a large company headquartered in areas other than the Eastern District of Texas, is merely the receipt of a letter marked with a Marshall, Texas return address that alleged infringement—an activity that falls short of satisfying the specific jurisdiction analysis.⁷¹

Therefore, through this jurisdictional misbalance in favor of troll-plaintiffs, the Eastern District of Texas acts as a black hole vacuuming up large prey. When the inquiry shifts to the defendant, however, they can rarely assert that their forum is proper.⁷² This inherently incentivizes trolls to stay hunkered down in the Eastern District of Texas and encourages further abuse of the system. This jurisdictional battle for the Eastern District of Texas is also a lose-lose scenario: (1) the troll's target will not have their forum preference, and (2) defendants will likely lose the ultimate lawsuit due to troll-sympathetic juries. Moreover, the average infringement case can cost up to \$4 million just to defend.⁷³ Thus, it is painfully obvious that many companies settle with trolls in fear of a loss that could be in the eight-figure range.⁷⁴

From an overhead perspective, the continuous exploitation of the judicial system is only a prerequisite to the worst evil perpetrated by patent trolls—the hindering of research and development ("R&D").⁷⁵ Unfortunately, settlements are not the

^{70.} *Id.* (quoting Red Wing Shoe Co. v. Hockerson-Halberstadt, Inc., 148 F.3d 1355, 1360 (Fed. Cir. 1998)).

^{71.} See, e.g., id. at 1333.

^{72.} See WATKINS, supra note 2, at 24.

^{73.} See Am. Intell. Prop. Law Assoc., Report of the Economic Survey 35 (2013), available at http://library.constantcontact.com/download/get/file/1109295819134-177/AIPLA+2013+Survey_Press_Summary+pages.pdf.

^{74.} See, e.g., Andrew Chung, U.S. Jury Says Motorola Infringed One Intellectual Ventures Patent, REUTERS (Mar. 25, 2015, 6:20 PM), http://www.reuters.com/article/2015/03/25/us-usa-motorola-patent-verdict-idUSKBN0ML2NS20150325; see also Michael Blanding, Bringing Patent Trolls into the Light, FORBES (Aug. 20, 2014, 11:10 AM), http://www.forbes.com/sites/hbsworkingknowledge/2014/08/20/bringing-patent-trolls-into-the-light/.

^{75.} See COMM. ON INTELL. PROP. RIGHTS IN THE KNOWLEDGE-BASED ECON., Stephen A. Merrill, Richard C. Levin & Mark B. Myers eds., A PATENT SYSTEM FOR THE 21ST CENTURY 95 (2004) [hereinafter A PATENT SYSTEM]; see also Paul M. Mersino, Note, Patents, Trolls, and Personal Property: Will eBay

only source of monetary harm to companies; in fact, it has been argued that the troll problem does not necessarily stem from abusive litigation tactics. 76 Patent trolls are the estimated cause of \$29 billion leached from defendant-companies per annum "in direct out-of pocket costs," and, "in aggregate, patent litigation destroys over \$60 billion in firm wealth each year."77 Shockingly, this number may actually be a conservative estimate because it only includes "legal fees going to lawyers, and the licensing fees paid in tribute to make the trolls go away," and, moreover, "[t]he findings come from a relatively small sample of 83 companies, both small and large." 78 As R&D is the precursor to innovation, the leaching of budgetary funds from R&D directly undercuts the driving purpose of the patent system. For large technology firms, the costs of defending patent troll suits divert huge R&D expenditures; in fact, "[i]n 2011, Apple and Google spent more money on patent litigation and defensive patent acquisitions than on research and development."79 In contrast, the cost to an

Auction Away a Patent Holder's Right to Exclude?, 6 AVE MARIA L. REV. 307, 316 (2007).

JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, 76. BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 3 (2008). However, the numbers stated should be received with caution, as some economists disagree as to whether they accurately reflect an unbiased examination of the patent trolling problem. Compare James Bessen & Michael J. Meurer, The Direct Costs From NPE Disputes, 99 CORNELL L. REV. 387, 412 (2014) ("Given the explosion of NPE patent litigation, it is difficult to pin down precisely the direct costs to defendants, but we believe that the \$29 billion annual figure . . . is a plausible estimate; the true number could be higher or lower."), with David L. Schwartz & Jay P. Kesan, Analyzing the Role of Non-Practicing Entities in the Patent System, 99 Cornell L. Rev. 425, 455 (2014) ("Bessen and Meurer's study provides some new data for discussion. However, limitations in the data suggest to us that their findings should be viewed skeptically, as an outer boundary of the costs of NPE litigation, and one that is likely to be substantially overstated."). See also Joff Wild, Blog, Deconstructing Bessen and Meurer - Paper Raises Big Questions over Their NPE Claims, INTELL. ASSET MGMT. (Jul. 27, 2012), http://www.iam-media.com /Blog/Detail.aspx?g=454c1adc-52c3-4c2d-8981-e4716361f219.

^{77.} James Bessen, *The Evidence Is in: Patent Trolls Do Hurt Innovation*, HARV. BUS. REV., Nov. 2014, *available at* https://www.hbr.org/2014/07/the-evidence-is-in-patent-trolls-do-hurt-innovation.

^{78.} Joe Mullin, New Study, Same Authors: Patent Trolls Cost Economy \$29 Billion Yearly, ARS TECHNICA (July 3, 2012, 10:11 AM), http://www.ars technica.com/tech-policy/2012/07/new-study-same-authors-patent-trolls-cost-economy-29-billion-yearly/ [hereinafter New Study].

^{79.} Sam Gustin, Viewpoint: Obama's 'Patent Troll' Reform: Why

unsuccessful patent troll is minimal because patent trolls' attorneys usually work on a contingency fee basis. 80 Additionally, trolls do not have to divert R&D funds to their litigation budget because they do not make any products. 81 Thus, the common solution put forth in reform efforts usually involves fee shifting. 82 However, such "downstream" solutions are not likely to fix the problem of patent trolling. 83

II. RECENT REFORM EFFORTS ARE INSUFFICIENT

As discussed, patent trolling is stifling American innovation by sucking money directly from R&D budgets. In this light, it is not surprising that the common reform efforts have targeted remedies in order to balance out budgetary misbalances. Through the patent-troll-lawsuit-continuum, remedies can be considered "downstream" because a settlement or judgment is typically the end of the line for many cases. "Upstream" activities, on the other hand, normally occur before litigation is even conceived; for example, the application and prosecution of the patent. These upstream areas typically do not involve the patent troll because, as discussed, patent trolls buy patent rights much later down the road—after the patent has already been approved by the USPTO, and perhaps even practiced for a period of time thereafter.⁸⁴ The difficulties in patent reform can be summed up succinctly as How do we curb patent troll activities (i.e., abusive litigation and enveloped threats) without foreclosing the patent system to inventors who do not wish to abuse it (i.e., people who actually make something useful for society)? Furthermore, can we

Everyone Should Care, TIME (June 8, 2013), http://www.business.time.com/2013/06/08/viewpoint-obamas-patent-troll-reform-why-everyone-should-care/.

^{80.} See WATKINS, supra note 2, at 15–16 (stating that contingency fees commonly range as high as 45%).

^{81.} See WATKINS, supra note 2, at 15.

^{82.} See, e.g., Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1756 (2014) (giving district courts more discretion in awarding attorney's fees under 35 U.S.C. § 285); Highmark Inc. v. Allcare Health Mgmt. Sys., 134 S. Ct. 1744, 1749 (2014) (requiring the Federal Circuit to be more deferential to district courts in awarding attorney's fees under 35 U.S.C. § 285); Innovation Act, H.R. 3309, 113th Cong. § 3 (2013).

^{83.} See Gene Quinn, Fee-shifting Won't Do Anything to Stop Patent Trolls, IPWATCHDOG (Mar. 3, 2015), http://www.ipwatchdog.com/2015/03/03/fee-shifting-wont-do-anything-to-stop-patent-trolls/ [hereinafter Fee-Shifting].

^{84.} See Chan & Fawcett, supra note 5, at 2.

target upstream activities at all without offending the Constitution?

A. Setting up Downstream

Recent reforms that have focused on curbing patent trolls once litigation has already commenced have been met with mixed reviews. 85 Rather than focusing on remedies and their associated procedural aspects, it may be better to focus on the upstream activities before the patent is granted. By preventing the patent from being eligible or patentable in the first place, a patent troll cannot obtain broadly worded or ambiguous patents to use as weapons. While this would foreclose the patent system for those who do not wish to abuse their patent rights to some extent, it would reinforce the constitutional goal of promoting innovation by disarming trolls and favoring only strong patents.

The judiciary has been toiling with this problem for centuries. Perhaps the most powerful recognition was that of Justice Bradley over 130 years ago in Atlantic Works v. Brady.86 The patent at issue covered a dredging boat that utilized a pump, a mud-fan, and a series of tanks that, to keep the vessel level, would fill with water based on the depth below.⁸⁷ This process was reversible by the pump, which could remove water from the watertight compartments depending on the mud-flap's measurements.⁸⁸ The plaintiff-owner of the patent filed an infringement suit against Atlantic Works, a builder of boats that functioned in approximately the same manner but used a different mode of operation.⁸⁹ The defendant challenged the patent's validity on the grounds of invention 90 and novelty, arguing that

The truth is, the word cannot be defined in such manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not. In a given case we may be able to say that there is present invention of a very high

^{85.} See, e.g., Fee-Shifting, supra note 83.

^{86. 107} U.S. 192 (1883).

^{87.} *Id.* at 193–94.

^{88.} *Id*.

^{89.} Id. at 194–99.

^{90. &}quot;Invention," or lack thereof, is an outdated doctrine that is hardly applied by the courts when examining validity, mainly due to the subsequent amendments to the Patent Act since *Atlantic Works*, and the difficulty in maintaining such a standard; as the Supreme Court stated in 1841:

"the principle of said dredge-boat[] had been substantially known and publically used before." Justice Bradley agreed with the defendant, opining that patents were not designed to grant a monopoly for "every slight advance made." 92

What do dredging boats have to do with modern-day patent trolls suing large corporations? First, they can both be, at least hypothetically, found under bridges. Second, and more importantly, they both have a connection to the struggles involved with reforming patent law. In denying the validity of the patent, Justice Bradley succinctly added:

The design of the patent laws is to reward those who make some substantial discovery or invention, which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It was never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for

order. In another we can see that there is lacking that impalpable something which distinguishes invention from simple mechanical skill. Courts, adopting fixed principles as a guide, have by a process of exclusion determined that certain variations in old devices do or do not involve invention, but whether the variation relied upon in a particular case is anything more than ordinary mechanical skill is a question which cannot be answered by applying the test of any general definition.

McClain v. Ortmayer, 141 U.S. 419, 427 (1891). The Patent Act currently defines "invention" as an "invention or discovery." 35 U.S.C. § 100(a) (2015).

^{91.} Atl. Works, 107 U.S. at 194.

^{92.} *Id.* at 200.

profits made in good faith.93

Thus, the century-old patent reform problem is a double-edged sword: incentivizing innovation by granting limited monopolies also allows litigants to abuse such monopolies without contributing to society. While the system is willing to grant patents to those who increase public knowledge, the current structure's overinclusive nature allows trolls to hold onto unpracticed patents and use their exclusive rights to invidiously threaten legitimate businesses—the costs of which ultimately fall onto the consumer.⁹⁴

Because patent trolls mainly cause damage to innovation by abusing their patent rights in court, reform efforts try to chip away at their litigation practices. This may be the reason why recent reforms have addressed the troll problem by discouraging litigation; for example, the Court just recently issued unanimous decisions aimed towards deterring frivolous patent litigation in Octane Fitness, LLC v. ICON Health & Fitness⁹⁵ and Highmark Inc. v. Allcare Health Management System, Inc. 96 The Court in both cases focused on the Patent Act's attorney's fee provision, which allows a district court "in exceptional cases [to] award reasonable attorney fees to the prevailing party."97 Since 2005, the Federal Circuit had only awarded attorney's fees when a party could show "material inappropriate conduct related to the matter in litigation, such as willful infringement, fraud or inequitable conduct in procuring the patent, misconduct during litigation, vexatious or unjustified litigation, conduct that violates

^{93.} *Id*.

^{94.} See Watkins, supra note 2 at 15–19; Fed. Trade Comm'n, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy, ch. 3, at 40–41 (2003) [hereinafter To Promote Innovation], http://www.ftc.gov/sites/default/files/documents/reports/promote-innovation-proper-balance-competition-and-patent-law-and-policy/innovationrpt.pdf.

^{95. 134} S. Ct. 1749, 1755–57 (2014) (reasoning that the Federal Circuit's rigid test for determining whether an "exceptional" case exists in awarding attorney's fees under 35 U.S.C. § 285 impermissibly interferes with a district court's discretion; holding that the standard for an "exceptional" case is one that sticks out from others due to its frivolous nature).

^{96. 134} S. Ct. 1744, 1747 (2014) (holding that a district court's decision to award attorney's fees under 35 U.S.C. § 285 must be reviewed under an abuse of discretion standard).

^{97. 35} U.S.C. \S 285 (2012); see also Octane, 134 S. Ct. at 1757; $Highmark,\,134$ S. Ct. at 1749.

Fed.R.Civ.P.11, or like infractions" as "established by clear and convincing evidence." The Court rejected this "unduly rigid" formulation, and found that the Federal Circuit's abandonment of a "holistic, equitable approach" ten years prior was "inconsistent with the text" of the attorney's fee statute. Preferring the ordinary meaning of the word "exceptional," the Court held in Octane that awarding attorney's fees is within the district court's discretion—in other words, when a court reviews the totality of the circumstances and determines that the case "simply... stands out from others with respect to the substantive strength of a party's litigating position" or when the case was litigated in an "unreasonable manner." Accordingly, because the district court has discretion in this determination, the Court further held in Highmark that such a finding is only reviewable under an abuse of discretion standard. 101

The Court has tried to set up other downstream barriers by easing the ability for an accused infringer to bring an action for declaratory judgment. In *MedImmune, Inc. v. Genentech, Inc.*, the Court held that a party in an infringement case could still bring an action for declaratory judgment to challenge the patent's validity regardless of whether that party was paying royalties to the other party in accordance with a licensing agreement. ¹⁰² The Court's decision was thought to "diminish trolls' abilit[ies] to use legal threats as a means of extracting advantageous licensing agreements" because trolls had commonly argued that licensees would not pay a licensor fees for an invalid patent. ¹⁰³ Although the Court rejected this reasoning, the trolls were still able to get around the *MedImmune* holding by altering their licensing agreements in a manner that shields themselves against

^{98.} Brooks Furniture Mfg. v. Dutailier Int'l, Inc., 393 F.3d 1378, 1381–82 (Fed. Cir. 2005).

^{99.} Octane, 134 S. Ct. at 1754–55; Highmark, 134 S. Ct. at 1748; see also 35 U.S.C. § 285.

^{100.} Octane, 134 S. Ct. at 1756.

^{101.} *Highmark*, 134 S. Ct. at 1749; see also 28 U.S.C. § 1295 (2012) (empowering the Federal Circuit with exclusive jurisdiction over patent cases).

^{102. 549} U.S. 118, 137 (2007).

^{103.} Mayergoyz, supra note 24, at 255; see MedImmune, 549 U.S. at 123–25.

declaratory judgments. ¹⁰⁴ The Court revisited this problem in *Medtronic, Inc. v. Mirowski Family Ventures, LLC*. ¹⁰⁵ Adding further firepower to the anti-troll arsenal, the Court held that in scenarios where a defendant-licensee raises a declaratory judgment for noninfringement in response to a plaintiff-licensor's infringement charge, the burden does not shift to the licensee, but remains on the plaintiff. ¹⁰⁶ Thus, *MedImmune* provides a layer of protection for infringement defendants by allowing them to pay royalties on a patent without forfeiting their ability to challenge the patent's validity and *Medtronic* provides a "straightforward, undiverted analysis of the burden of proof question" ¹⁰⁷ in responsive noninfringement declaratory judgment actions. In combination, these two decisions facilitate a defendant's ability to challenge a patent in response to an infringement suit.

In the same year as *MedImmune*, a unanimous Court in *eBay Inc. v. MercExchange*, *L.L.C.* also came to the aid of infringement defendants by making it more difficult for trolls to get injunctive relief. ¹⁰⁸ Rather than automatically enjoining a defendant after a finding of infringement, as the Federal Circuit had commonly done, ¹⁰⁹ the Court instead found that injunctions may be granted only after weighing the traditional equitable factors. ¹¹⁰ While

^{104.} See Jennifer L. Collins & Michael A. Cicero, The Impact of MedImmune Upon Both Licensing and Litigation, 89 J. PAT. & TRADEMARK OFF. Soc'Y 748, 750–56 (2007) (offering alternative licensing agreements to avoid declaratory judgments).

^{105. 134} S. Ct. 843 (2014).

^{106.} *Id.* at 846.

^{107.} Ronald Mann, Opinion Analysis: Justices Unimpressed with Federal Circuit's Mastery of Federal Procedure Curriculum, SCOTUSBLOG (Jan. 23, 2014, 12:06 PM), http://www.scotusblog.com/2014/01/opinion-analysis-justices-unimpressed-with-federal-circuits-mastery-of-federal-procedure-curriculum/.

^{108.} See 547 U.S. 388, 395 (2006).

^{109.} See, e.g., Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1246–47 (Fed. Cir. 1989) (citing W.L. Gore & Assocs., Inc. v. Garlock, Inc., 842 F.2d 1275, 1281 (Fed. Cir. 1988)) ("It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it.").

^{110.} eBay, 547 U.S. at 391 ("According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest

this certainly would have been an impediment to trolls, the Court cut the blow by further holding that the denial of an injunction cannot be based on whether or not the plaintiff actually practiced the invention, as "traditional equitable principles do not permit such broad classifications." ¹¹¹ The majority rejected the argument that an entity's "lack of commercial activity in practicing [its] patents" would nullify any inference of irreparable harm. ¹¹²

The inherent difficulties in patent reform were also illustrated through the interplay between the eBay majority opinion and Justice Kennedy's concurrence. The majority fell victim to a common argument in support of patent trolls:¹¹³

[S]ome patent holders, such as university researchers or self-made inventors, might reasonably prefer to license their patents, rather than undertake efforts to secure the financing necessary to bring their works to market themselves. Such patent holders may be able to satisfy the traditional four-factor test, and we see no basis for categorically denying them the opportunity to do so.¹¹⁴

Recognizing the distinction between NPEs and PAEs, Justice Kennedy's concurrence highlighted that the Court's holding, aimed at more palatable NPEs, could aid trolling activities. ¹¹⁵ Notably, Justice Kennedy's concurrence was also the first official

would not be disserved by a permanent injunction.").

^{111.} Id. at 393.

^{112.} *Id.* (quoting MercExchange, L.L.C. v. eBay, Inc., 275 F. Supp. 2d 695, 712 (E.D. Va. 2003)) (internal quotation marks omitted).

^{113.} See, e.g., Raymond P. Niro & Paul K. Vickrey, The Patent Troll Myth, 7 SEDONA CONF. J. 153, 156 (2006); see also WATKINS, supra note 2, at 16 ("Supporters of NPEs [argue] that trolls actually benefit the system because they stand up to large companies that, in the past, could infringe patents without repercussions. An individual inventor or small company, they assert, could not afford to take an infringer to court. Trolls fight for the rights of the little guy. By purchasing the patent, the argument continues, trolls infuse capital into small business that can in turn focus on more R&D. [Trolls] assume the risk of enforcing patents, and inventors can focus on inventing. . . . NPE advocates [also] point out that trolls are legitimate holders of a piece of property that are entitled under the law to protect their property rights. Just as heirs who had no role in creating or building up grandfather's company have a right to manage or sell the company they inherited, so do trolls have a right to license and enforce patents they have acquired." (citations omitted)).

^{114.} *eBay*, 347 U.S. at 393.

^{115.} See id. at 395–97 (Kennedy, J., concurring).

condemnation of troll activities from a sitting member of the Court:

An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. For these firms, an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent. When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations. legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.... The potential vagueness and suspect validity of some of these patents may affect the calculus under the four-factor test. 116

Justice Kennedy's skepticism has yet to lose its basis in reality. 117 However, the eBay case has been marginally successful in curbing patent troll activities because it removed the permanent injunction remedy from the trolls' arsenal. 118

The Court has also sought to make life harder for patent trolls in the area of inducing infringement. In *Limelight Networks, Inc.* v. Akamai Technologies, Inc. A unanimous Court held that defendants cannot be liable for inducing infringement when there

^{116.} *Id.* at 396–97 (citations omitted). Since this case, the Court has continued to address the issue of patent trolling directly. *See* Commil USA, LLC v. Cisco Sys., Inc., 135 S. Ct. 1920, 1930–31 (2015). While *Commil* did end up "increas[ing] the *in terrorem* power of patent trolls," at least it is now apparent that the Court is unified in recognizing patent trolls as a legitimate issue. *Id.* at 1932 (Scalia, J., dissenting); *see id.* at 1930–31 (majority opinion). Curiously, before Justice Scalia's dissent in *Commil*, the Court had never used the term "patent troll" in an opinion. *See* Jeff John Roberts, *Supreme Court Says "Patent Troll" for First Time in* Cisco *ruling*, FORTUNE (May 26, 2015, 4:40 PM), http://www.fortune.com/2015/05/26/scotus-cisco-patent-trolls/.

^{117.} See, e.g., Commil, 135 S. Ct. at 1930-31 (majority opinion); id. at 1932 (Scalia, J. dissenting).

^{118.} See, e.g., Lim, supra note 7, at 57 ("[N]on-practicing entities [have] had a much harder time post-eBay, with requests for injunctions denied up to 90 percent of the time.").

has been no direct infringement.¹¹⁹ Prior to this case, the Federal Circuit had reasoned that because "direct infringement can exist independently" from other forms of infringement under section 271 of the Patent Act,¹²⁰ one could be potentially liable for inducing infringement absent a finding of direct infringement.¹²¹ In perhaps its most condescending opinion directed towards the Federal Circuit to date, the Court overturned the appellate court's "fundamental[] misunderstand[ing]" of inducement, making it more difficult to prove induced infringement.¹²² This, in turn, reduces a patent troll's likelihood of winning at an appellate level under multiple theories of liability.¹²³

However, the Court's recent patronization of the Federal Circuit, as highlighted by *Octane, Medtronic*, and *Limelight*, may have negative consequences that could benefit patent trolls. Granting the district courts more discretion allows courts like the Eastern District of Texas more room to operate in favor of patent trolls. This is exemplified through the *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.* decision from early 2015, which added more power to district courts by holding that subsidiary findings of fact are within the sound discretion of the district court judge. Thus, when both parties put on expert witnesses to

^{119. 134} S. Ct. 2111, 2115 (2014).

^{120.} Important for this analysis are the first two subsections:

⁽a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

⁽b) Whoever actively induces infringement of a patent shall be liable as an infringer.

³⁵ U.S.C. § 271 (2012).

^{121.} See Akamai Techs., Inc. v. Limelight Networks, 692 F.3d 1301, 1308–09 (Fed. Cir. 2012), rev'd, 134 S. Ct. 2111, 2116–17 (2014) ("Requiring proof that there has been direct infringement as a predicate for induced infringement is not the same as requiring proof that a single party would be liable as a direct infringer."); see also 35 U.S.C. § 271.

^{122.} See Limelight Networks, 134 S. Ct. at 2117. See also Diane Bartz & Lawrence Hurley, U.S. Supreme Court Rulings May Make Life Harder for Patent Trolls, Reuters (June 2, 2014, 5:27 PM), http://www.reuters.com/article/2014/06/02/us-biosig-nautilus-patent-idUSKBN0ED1M320140602.

^{123.} Bartz & Hurley, supra note 122.

^{124.} Cf. Watkins, supra note 2, at 23–24.

^{125. 135} S. Ct. 831, 835 (2015).

dispute the technical definition of the term "molecular weight," 126 the district court judge had the discretion to pick which expert to go with, and such decision is now reversible only if clearly erroneous. 127 In holding so, the Court in Teva sought to align subsidiary fact-findings within the context of claim construction with the findings of fact under Federal Rule of Civil Procedure 52(a)(6). 128 Prior to this ruling, the Federal Circuit had reviewed such findings of subsidiary fact de novo, 129 reasoning that "[c]laim construction is a legal statement of the scope of the patent right," and the necessary subsidiary fact finding was therefore more akin to questions of law. 130 The Supreme Court disagreed with the Federal Circuit's reasoning, but additionally held that the ultimate determination of a legal question (in Teva, whether the claim was indefinite), which has its basis in the subsidiary facts, is still reviewable under the heightened de novo standard. 131 Regardless, by failing to endorse the view that subsidiary fact-

^{126.} In *Teva*, the Sandoz argued that the term rendered the patent invalid for reasons of indefiniteness, as "molecular weight" could mean (1) "molecular weight as calculated by the weight of the molecule that is most prevalent in the mix that makes up [the drug's active ingredient]," (i.e. "peak average molecular weight"), (2) "molecular weight as calculated by taking all the different-sized molecules in the mix that makes up [the drug's active ingredient] and calculating the average weight" (i.e. "number average molecular weight") or (3) "molecular weight as calculated by taking all the different sized molecules in the mix that makes up [the drug's active ingredient] and calculating their average weight while giving heavier molecules a weight-related bonus when doing so" (i.e. "weight average molecular weight"), all of which were commonly used in the industry. *Id.* at 836.

^{127.} *Id.* at 835; *see also* FED. R. CIV. P. 52(a)(6) (stating that appellate courts "must not set aside" the district court's "[f]indings of fact" unless "clearly erroneous").

^{128.} See Teva, 135 S. Ct. at 837–38.

^{129.} See, e.g., Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp., 744 F.3d 1272, 1276–77 (Fed. Cir. 2014) (en banc); Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998).

^{130.} Lighting Ballast, 744 F.3d at 1284.

^{131.} Teva, 135 S. Ct. at 841. But see Insite Vision Inc. v. Sandoz, Inc., 783 F.3d 853, 861 (Fed. Cir. 2015) (deferring to district court's determination of facts underlying the ultimate legal question of nonobviousness as articulated by expert witnesses resulted in deferring to the district court's legal conclusion of obviousness); Cadence Pharm. Inc. v. Exela PharmSci Inc., 780 F.3d 1364, 1368–69 (Fed. Cir. 2015) (deferring to district court's findings of subsidiary facts left less room for the Federal Circuit court to make its own determination of nonobviousness).

finding—which can define the scope of a patent's claim—is better discerned by knowledgeable appellate scrutiny of the record and its associated extrinsic materials, rather than a district court judge's opinion, the Court inherently granted more power to district courts like the Eastern District of Texas.¹³²

These downstream reform efforts will not likely curb patent abuse because they are only focused on deterring litigation. It is still cheaper for a defendant to settle with a patent troll than to spend money on discovery and risk a multi-million dollar judgment. Reeping the patents out of trolls' hands will further deter litigation, which will have the added benefit of minimizing trolls' patent portfolios. Fortunately, we have already seen the Court attempt to limit the access to the patent system, and while these efforts are not necessarily directed towards patent trolls per se, the trolls will suffer the most loss from such decisions. However, more needs to be done because there is still enough room left for trolls to change their strategy and abuse other vulnerable areas of the patent system.

B. Patent Troll Response: Avoid Litigation, Increase Threats

While discouraging litigation is certainly a priority, a problem associated with patent trolls does not necessarily arise from litigation to begin with. ¹³⁵ As discussed, trolls suck away at a company's R&D budget through litigation, but the numbers mentioned earlier may actually be an underestimation. ¹³⁶ It is inherently more economical for a defendant to settle with a patent-troll-plaintiff than to litigate, and settlement amounts are often subject to nondisclosure agreements, which keep them out of the ultimate tally. ¹³⁷ Lawsuits often cost millions to defend, while "[t]he median amount spent to pay off a troll suit is just \$230,000

^{132.} Cf. Teva, 135 S. Ct. at 851 (Thomas, J., dissenting).

^{133.} See Blanding, supra note 74 ("Patent trolls bank that, in some cases, companies will settle rather than pay the time and monetary costs of fighting infringement lawsuits.").

^{134.} See James Bessen, What the Courts Did to Curb Patent Trolling—for Now, ATLANTIC (Dec. 1, 2014, 12:11 PM), http://www.theatlantic.com/business/archive/2014/12/what-the-courts-did-to-curb-patent-trollingfor-now/383138/ [hereinafter What the Courts Did to Curb Patent Trolling].

^{135.} See Bessen & Meurer, supra note 76, at 3.

^{136.} See id.

^{137.} See New Study, supra note 78.

for large companies and \$180,000 for small- and medium-size defendants." ¹³⁸ Furthermore, "very few strong entities in the patent-trolling business are able to pull off giant multimillion-dollar settlements," so trolls often prefer to settle as well. ¹³⁹ Therefore, if troll settlements were included in the figures, the numbers would be much higher, especially because both sides have an incentive to settle.

Thus, an unaddressed harm comes from the extortion of businesses, both small and large, outside of litigation. Patent trolls are responsible for roughly 60% of patent infringement litigation, 140 and defendants that prefer to settle still end up losing huge sums of money: it is believed that settlements with trolls cost large companies roughly 10% of the average R&D budget annually, 141 and costs small- to medium-sized companies 37% of their direct costs. 142 It seems that the only way to stop the threats and the resulting settlements is to disarm the trolls of their patents, because it is apparent that the problem arises from the ability of patent trolls to obtain ambiguous patents in the first place.

The Court recently attempted to reform upstream activities in a way that may prevent trolls from getting their hands in the honey pot. In addressing the question of indefiniteness, in 2014, the Court unanimously held, in *Nautilus*, *Inc. v. Biosig Instruments*, *Inc.*, that "a patent is invalid for indefiniteness if its claims, read in light of the patent's specification delineating the patent and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." While some argue that the *Nautilus* decision will hurt patent trolls because, "[h]istorically speaking, the patents

^{138.} *Id*.

^{139.} *Id*.

^{140.} See id.

^{141.} John Chambers & Myron E. Ullman, Stopping the Economy-Sapping Patent Trolls, WALL St. J. (Feb. 16, 2015, 7:36 PM), http://www.wsj.com/articles/john-chambers-and-myron-ullman-stopping-the-economy-sapping-patent-trolls-1424133369.

^{142.} See Rebecca J. Rosen, Study: Patent Trolls Cost Companies \$29 Billion Last Year, ATLANTIC (June 29, 2012), http://www.theatlantic.com/technology/archive/2012/06/study-patent-trolls-cost-companies-29-billion-last-year/259070/.

^{143. 134} S. Ct. 2120, 2124 (2014)

that are often asserted by patent trolls" would be weeded out by a knowledgeable patent examiner, 144 this standard has proven more-problematic-than-not in the patentability analysis. 145

Additionally, in *Alice Corp. v. CLS Bank International*, ¹⁴⁶ the Court effectively blocked "the most egregious cases of patent trolling" by making it more difficult for patent trolls to obtain process patents. ¹⁴⁷ The unanimous *Alice* Court held that when process patents are directed towards an abstract idea, "merely requiring generic computer implementation fails to transform that abstract idea into a patent-eligible invention." ¹⁴⁸

For the uninitiated, products¹⁴⁹ and processes¹⁵⁰ are eligible

First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, "[w]hat else is there in the claims before us?" To answer that question, we consider the elements of each claim both individually and "as an ordered combination" to determine whether the additional elements "transform the nature of the claim" into a patent-eligible application. We have described step two of this analysis as a search for an "inventive concept"—i.e., an element or combination of elements that is "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself."

Id. at 2355 (alterations in original) (citations omitted) (quoting Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289, 1294, 1296–98 (2012)).

149. As typically used, a patent for a "product" means that the subject matter of the patent is a "machine, manufacture, or composition of matter." 35 U.S.C. § 101 (2012). The Court has refused to read a narrow definition into these divisions, especially when the legislature intentionally left them broadly interpreted:

[T]his Court has read the term "manufacture" in § 101 in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." Similarly, "composition of matter" has been construed consistent with its common usage to include "all compositions of two or more substances and... all composite articles, whether they be the results of chemical union, or of

^{144.} Bartz & Hurley, *supra* note 122 (quoting the statement of James R. Barney, partner at Finnegan, Henderson, Farabow, Garrett & Dunner, LLP).

^{145.} See infra Part III.B.

^{146. 134} S. Ct. 2347 (2014).

^{147.} Klint Finley, *The Patent Wars May Be Cooling, but They're Far from Over*, WIRED (Feb. 19, 2015, 1:04 AM), http://www.wired.com/2015/02/patent-wars-may-cooling-theyre-far/.

^{148.} Alice, 134 S. Ct. at 2352. Reinforcing the "Mayo framework" for determining subject matter eligibility for patents directed towards the judicial exceptions, the Court articulated the test:

for patent protection,¹⁵¹ but there are three judicially created caveats: abstract ideas,¹⁵² natural phenomena,¹⁵³ and laws of natures,¹⁵⁴ are not eligible for patent protection.¹⁵⁵ These exceptions are often justified on a theory of pre-emption; the "monopolization of [abstract ideas, natural phenomena, and laws of nature] through the grant of a patent might tend to impede innovation more than it would tend to promote it."¹⁵⁶

While not directly aimed towards patent trolls, the *Alice* decision presents a threat to entities that typically acquire computer-based process and business method patents that are worded broadly enough to encompass an abstract idea. ¹⁵⁷ *Alice* has helped put a dent in these specific areas by expressly recognizing that no "inventive concept" exists in patents that merely state an abstract idea and then "add[] the words: 'apply it' on a computer," thereby invalidating patents that trolls

mechanical mixture, or whether they be gasses, fluids, powders, or solids."

Diamond v. Chakrabarty, 447 U.S. 303, 308 (1980) (citations omitted) (omissions in original) (first quoting Am. Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11 (1931); then quoting Shell Dev. Co. v. Watson, 149 F. Supp. 279, 280 (D.C. 1957)).

150. "Process," unlike the products mentioned, is actually defined by the Patent Act to mean a "process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material." 35 U.S.C. § 100.

151. Section 101 of the Patent Act provides that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101.

152. See, e.g., Alice, 134 S. Ct. at 2358–60; Mayo, 132 S. Ct. 1289, 1297–98 (2012); Bilski v. Kappos, 561 U.S. 593, 610–11 (2010); Parker v. Flook, 437 U.S. 584, 589–90 (1978).

153. See, e.g., Mayo, 132 S. Ct. at 1297–98; Gottschalk v. Benson, 409 U.S. 63, 67–68 (1972); Mackay Radio & Tel. Co. v. Radio Corp. of Am., 306 U.S. 86, 91 (1939); The Telephone Cases, 126 U.S. 1, 67–69 (1887); O'Reilly v. Morse, 56 U.S. 62, 113 (1853).

154. See, e.g., Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 133 S. Ct. 2107, 2117 (2013); Diamond, 447 U.S. at 309; Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 131 (1948).

155. See Alice, 134 S. Ct. at 2352, 2354.

156. Mayo, 134 S. Ct. at 1293.

157. See Daniel Nazer, Big Patent Reform Wins in Court, Defeat (for Now) in Congress: 2014 in Review, ELECTRONIC FRONTIER FOUND. (Dec. 25, 2014), https://www.eff.org/deeplinks/2014/12/2014-review-big-patent-reform-wins-court-defeat-now-congress.

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notoriously hold. 158 The natural consequence of the Alice decision has been the steady denial of claims containing abstract ideas, namely business method patents and software patents. 159 This wave of denials is important: by rejecting the patents disfavored by Alice, trolls will not be able to purchase and abuse such patents down the road.

Patent trolls now face a threat in the wake of *Alice* because if a troll with a broad patent sues for infringement, a defendant can, response, bring a declaratory judgment for noninfringement (where it is clear that trolls would still hold the burden of persuasion 160) and for nonvalidity (regardless of the payment of royalty fees under a licensing deal), which could result in a troll's abstractly worded patent being thrown out. 161 Additionally, trolls will no longer have the "incentive to acquire vague, overreaching patents" 162 because those patents will now likely be invalid if challenged. In response, many trolling entities will need to switch up their strategy. Those with ambiguously worded patents will likely stray from litigation to avoid the threat of invalidation under Alice, and trolls with less-broadly-worded patents may avoid litigation in fear of the Octane attorney's fee holding. 163 Going forward, however, it is imperative that the Court further disarm patent-troll-plaintiffs because the Alice decision may not threaten many troll patents, and Octane will not likely prevent threatening letters from travelling through the mail.

III. CLOSING THE DOOR ON PATENT TROLLS

The Court's June 2014 decision in *Alice* continues to ring as the USPTO, the courts, and patent holders readjust to new

^{158. 134} S. Ct. at 2357; see also Nazer, supra note 157.

^{159.} See, e.g., Gene Quinn, A Software Patent Setback: Alice v. CLS Bank, IPWATCHDOG (Jan. 9, 2015), http://www.ipwatchdog.com/2015/01/09/a-soft ware-patent-setback-alice-v-cls-bank/ [hereinafter Software Patent Setback] ("Based on this decision it is hard to see how any software patent claims written in method form can survive challenge.").

^{160.} See Medtronic, Inc. v. Mirowski Family Ventures, LLC, 134 S. Ct. 843 (2014).

^{161.} See Finley, supra note 147.

^{162.} See WATKINS, supra note 2, at 17 (quoting James Bessen et. al, The Private and Social Costs of Patent Trolls, REGULATION, Winter 2011–2012, at 35, 35) (internal quotation marks omitted); see also Finley, supra note 147.

^{163.} See What the Courts Did to Curb Patent Trolling, supra note 134.

examination guidelines, 164 analytical frameworks, 165 and developmental setbacks 166 respectively. Going forward, trolls with weak patents may avoid litigation because of the invalidation threat Alice presents, and the trolls that are not threatened by Alice may need to shift their tactics to avoid litigation in light of Octane's holding. The natural consequence will not be what many wish—that the will trolls tuck their tails between their legs and run away—but, rather, trolls will likely find another "grey area" to Two of the three analyses involved in determining patentability—novelty and nonobviousness—currently supply nefarious plaintiffs with such grey areas. By using these flawed analyses to threaten defendants behind closed doors, trolls can avoid litigation while continuing to extort defendants into settling.

A. Encouraging Narrowly Tailored Claims

Trolls specifically obtain software and business method patents that are broadly worded and overly vague, oftentimes merely instructing a computer to implement a process involving an abstract idea. ¹⁶⁷ Narrowing the area of subject matter eligibility has helped decrease the number of potentially abusive patents in the system ¹⁶⁸ because such patents are not permissible under *Alice*. ¹⁶⁹ However, not all troll patents will be invalid under *Alice* because not all troll patents will flounder if challenged. ¹⁷⁰

Due to this, more needs to be done to disarm the trolls. Targeting the novelty inquiry, which is just one step downstream from the subject matter eligibility determination (i.e., the subject of the *Alice* decision), ¹⁷¹ would further remove ambiguous patents

^{164.} See, e.g., 2014 Interim Guidance on Patent Subject Matter Eligibility, 79 Fed. Reg. 74,618, 74,633 (Dec. 16, 2014) (to be codified at 37 C.F.R. pt. 1); Memorandum from Andrew H. Hirshfeld, Deputy Commissioner for Patent Examination Policy, to Patent Examining Corps (June 25, 2014), http://www.uspto.gov/sites/default/files/patents/announce/alice_pec_25jun201 4.pdf.

^{165.} See supra note 148 and accompanying text.

^{166.} See, e.g., Software Patent Setback, supra note 159.

^{167.} See Nazer, supra note 157.

^{168.} See id.

^{169.} See What the Courts Did to Curb Patent Trolling, supra note 134.

^{170.} See id.

^{171.} See 35 U.S.C. §§ 101–102 (2012).

from the hands of abusive litigants. Moreover, narrowing the novelty inquiry would actually promote innovation, as it is analogous to broadening the scope of the prior art, which is believed to promote innovation. In order to grasp why that is, it is important to understand how the process works in further detail.

The novelty question analyzes the prior art, or, in other terms, "everything that an invention can be compared to when determining whether the invention is worthy of a patent." ¹⁷² In analyzing the prior art, the language of the patent at issue is important—an invention lacks novelty (i.e., it is "anticipated") if "a single prior art disclosure of all elements of a claimed invention [is present as] arranged . . . in the claim." ¹⁷³ Therefore, trolls with broadly worded patents can argue that they rightfully monopolize larger portions of the prior art, which makes it more likely that a potentially new invention would be anticipated. ¹⁷⁴ Trolls can also utilize the language in their patents to argue that defendants have infringed on their exclusive rights. ¹⁷⁵ Additionally, due to the inherency doctrine, ¹⁷⁶ trolls and other patent holders can even

^{172.} M. Henry Heines, First to File: Patents for Today's Scientist and Engineer 9 (2014); see also 35 U.S.C. \S 102.

^{173.} Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1548 (Fed. Cir. 1983) (citing Soundscriber Corp. v. United States, 360 F.2d 954, 960 (Ct. Cl. 1966)); see also Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2129 (2014) ("[A]bsent a meaningful definiteness check . . . patent applicants face powerful incentives to inject ambiguity into their claims."). Furthermore, under the all-elements-in-a-single-reference-rule:

[[]U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate [the invention].

Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1371 (Fed. Cir. 2008).

^{174.} See Grab, supra note 25, at 98.

^{175.} See id. at 109.

^{176.} See, e.g., Atlas Powder Co. v. Ireco, Inc., 190 F.3d 1342, 1346, 1347 (Fed. Cir. 1999) ("To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.'... In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.... Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates." (citations omitted) (quoting In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997)).

argue that their patents cover areas of the art that are not even explicitly disclosed in their patent claims. 177 In these ways, trolls deter innovation by obtaining "weak patents [that] clog up the system." 178 However, by narrowing and further defining the novelty analysis, and by foreclosing the inherency doctrine, broadly worded patents would cover less prior art, leaving less of the art available for trolls to claim. 179 Trolls would only obtain patents that cover more targeted areas of the prior art, it would also leave more areas available for patenting by good faith innovators, thereby unclogging the prior art and incentivizing innovation. A comparison might be needed, and, luckily, a recent statutory enactment has shown to be analogous.

As postulated, the ultimate result of narrowly interpreting claims in the novelty inquiry would be to increase innovation. Incentivizing innovation was the same goal of the America Invents Act ("AIA"),¹⁸⁰ which was enacted by Congress in 2011.¹⁸¹ The AIA sought to accomplish this goal by broadening the scope of the prior art in the novelty analysis.¹⁸² By introducing the "first-to-file rule, which imposes its greatest differences on the 'prior' of 'prior art," the AIA resulted in "more art being 'prior' under the

^{177.} See id.

^{178.} ROBIN FELDMAN, RETHINKING PATENT LAW 37 (2012); see also Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2129 (2014) ("[A] patent must be precise enough to afford clear notice of what is claimed, thereby 'appris[ing] the public of what is still open to them.' Otherwise there would be '[a] zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims." (second and third alterations in original) (footnote omitted) (citations omitted) (first quoting Markman v. Westview Instruments, Inc., 517 U.S. 370, 373 (1996); then quoting United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236 (1942)).

^{179.} See Grab, supra note 25, at 108.

^{180.} Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified in scattered sections of 35 U.S.C.).

^{181.} See H.R. REP. No. 112-98, pt. 1, at 40 (2011); see also Heines, supra note 172, at 24.

^{182.} See Heines, supra note 172, at 11. However, the AIA does not have a retroactive effect, therefore, the relevant prior art will vary based on the date of the patent application—while applications filed on March 16, 2013 and beyond are subject to "prior art defined by the first-to-file rule" (i.e. pre-AIA prior art standards), those applications filed before March 16, 2013 will be compared to the prior art as "defined by the first-to-invent rule" as set out in the AIA. *Id.* at 10. To compound the differential treatments further, "[c]ertain applications filed after March 16, 2013 will still be subject to the first-to-invent rule . . . and some [applications] will be subject to both." *Id.*

AIA than pre-AIA." ¹⁸³ The AIA accomplished this by increasing the total number of (1) United States patents and published patent applications, (2) published literature, (3) commercial activities, and (4) disclosures that are "otherwise available to the public" that an applicant's patent is compared to in the novelty determination. ¹⁸⁴ As a result, fewer inventions are now considered novel under the AIA because the pool of the prior art was widened. ¹⁸⁵

Congress has determined that broadening the pool of the prior art, thereby making it more difficult for an invention to be considered novel, would incentivize innovation. ¹⁸⁶ This is evident in examining the legislative intent behind the AIA; it is clear that the law "remains true to [its] constitutional command," of "promot[ing] innovation by granting inventors temporally limited monopolies on their inventions in a manner that ultimately benefits the public through the disclosure of the invention to the public." ¹⁸⁷ Therefore, because the AIA makes it more difficult for inventions to be novel by implementing a broader prior art with the ultimate *purpose* of incentivizing innovation, implementing other methods that would make it more difficult for inventions to be considered novel may also reinforce the *purpose* of incentivizing innovation. One way to do this is by strengthening the novelty inquiry through the judiciary. ¹⁸⁸

^{183.} *Id.* at 11. Responsively, the nonobviousness requirement only changed in an incremental fashion to reflect the broadened scope of the prior art. *See* 35 U.S.C. § 103 (2012) ("A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 [(the novelty requirement)], if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.").

 $^{184. \}quad \textit{See} \ 35 \ \text{U.S.C.} \ \S \ 102.$

^{185.} See Heines, supra note 172, at 11.

^{186.} See generally H.R. REP. No. 112-98, pt. 1 (2011).

^{187.} *Id.* at 38, 40.

^{188.} Tangentially, it is not even clear whether some pre-AIA holdings are still applicable after the AIA. *Compare* Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts, 153 F.2d 516, 519 (2d Cir. 1946) (holding that an inventor's secret commercial exploitation of an invention prior to its patenting is considered a "public use" under the pre-AIA scope of the prior art), *and* W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1549 (Fed. Cir. 1983) ("The nonsecret use of a claimed process in the usual course of producing articles for commercial purposes is a public use [under the pre-AIA

The current judicial novelty inquiry is similar to the common law "four-corners rule" in contracts. The "all elements in a single document rule" requires that a *single* prior art reference disclose all enabling elements, ¹⁸⁹ either explicitly or *inherently*, of another invention in order for a latter patent to be anticipated. ¹⁹⁰ Furthermore, the invention's "claimed arrangement or combination of those elements must also be disclosed, either expressly or inherently, in that same prior art reference." ¹⁹¹

Narrowly tailoring claims to certain arrangements, combinations, and ranges has been shown to leave little room for a finding of anticipation. 192 Such tailoring not only enhances the

scope of the prior art]."), with Examination Guidelines for Implementing the First-Inventor-to-File Provisions of the Leahy-Smith America Invents Act, 78 Fed. Reg. 11,059, 11,062 (Feb. 14, 2013) (to be codified at 37 C.F.R. pt. 1) (arguing that the statutory edition of "or otherwise available to the public" to 35 U.S.C. § 102(a)(1) indicates that secret commercial exploitation of an invention prior to patenting does not render the invention as part of the prior art and is therefore is not barred from patentability due to lack of novelty), and In re Lister, 583 F.3d 1307, 1315 (Fed. Cir. 2009) (standing for the proposition that in order for a disclosure to be publically accessible, the inquiry is "whether it could be located by 'persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence." (quoting Kyocera Wireless Corp. v. Int'l Trade Comm'n, 545 F.3d 1340, 1350 (Fed. Cir. 2008)).

189. The single prior art reference must "enable one of skill in the field of the invention to make and use the claimed invention." Merck & Co. v. Teva Pharm. USA, Inc., 347 F.3d 1367, 1372 (Fed. Cir. 2003).

190. See, e.g., Therasense, Inc. v. Becton, Dickinson & Co., 593 F.3d 1325, 1332 (Fed. Cir. 2010); MEHL/Biophile Int'l Corp. v. Milgraum, 192 F.3d 1362, 1365 (Fed. Cir. 1999); Celeritas Techs. v. Rockwell Int'l Corp., 150 F.3d 1354, 1361 (Fed. Cir. 1998).

191. Therasense, 593 F.3d at 1333; see also In re Cruciferous Sprout Lit., 301 F.3d 1343, 1349 (Fed. Cir. 2002) ("In order to prove that a claim is anticipated... defendants must present clear and convincing evidence that a single prior art reference discloses, either expressly or inherently, each limitation of the claim."); Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1548 (Fed. Cir. 1983). However, the language of the claim does not necessarily have to be identical to the prior art reference for it to be anticipated. See, e.g., In re Bond, 910 F.2d 831, 832 (Fed. Cir. 1990) ("For a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference.' These elements must be arranged as in the claim under review, but this is not an 'ipsissimis verbis' test.") (first quoting Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 677 (Fed. Cir. 1988); then quoting Akzo N.V. v. U.S. Int'l Trade Comm'n, 808 F.2d 1471, 1479 & n.11 (Fed. Cir. 1986)).

192. See Heines, supra note 172, at 84–86; see also Gen. Elec. Co. v. Wabash Appliance Corp., 304 U.S. 364, 369 (1938) ("The limits of a patent

likeliness of novelty in the patent examination, but also reduces the chance it will be overturned when challenged in court. It will also prevent the clogging of the prior art because patents would cover a less broad area of the prior art. ¹⁹³ Therefore, narrowly tailoring claims would leave more areas, albeit narrow as well, of the prior art for good faith innovators to patent, and incentivize innovation in such areas. Moreover, patent trolls would have to put more effort into finding multiple patents if they wish to monopolize an entire area of the prior art in the future.

However, the allowance of inherent disclosures subverts the current "all elements in a single document" rule because it allows for elements *not* within the document to act as if they were increasing the scope of a patent ¹⁹⁴ to areas not even disclosed to the public. ¹⁹⁵ To fix this broadening feature, inherent disclosures should be eliminated. Allowing inherent disclosures facilitates broadly scoped claims, which undermines innovation and discourages competition. ¹⁹⁶ By allowing a patent to cover areas of the art not explicitly stated in a patent, the public cannot possibly know what areas of the art another inventor lawfully monopolizes. ¹⁹⁷ Discouraging ambiguous patent claims by nullifying inherent disclosures would ultimately leave these undisclosed areas of the prior art open for the prudent inventor, rather than a potential patent troll, to grab onto, with the end result of increased innovation.

To return back to the AIA analogy, incentivizing innovation

must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public.").

^{193.} *Cf.* FELDMAN, *supra* note 178, at 37.

^{194.} See, e.g., Bettcher Indus. Inc. v. Bunzl USA, Inc., 661 F.3d 629, 654 (Fed. Cir. 2011); Schering Corp. v. Geneva Pharms., Inc. 339 F.3d 1373 (Fed. Cir. 2003); MEHL/Biophile, 192 F.3d at 1365. But see Trintec Indus., Inc. v. Top-U.S.A. Corp., 295 F.3d 1292, 1297 (Fed. Cir. 2002) ("Inherency does not embrace probabilities or possibilities.").

^{195.} *Cf.* HEINES, *supra* note 172, at 73.

^{196.} Cf. Feldman, supra note 178, at 37; Heines, supra note 172, at 73.

^{197.} Cf. Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2128 (2014) ("Patent claims . . . should be construed from an objective perspective of a [skilled artisan], based on what the applicant actually claimed, disclosed, and stated during the application process." (quoting Joshua D. Sarnoff & Edward D. Manzo, An Introduction to, Premises of, and Problems with Patent Claim Construction, in Patent Claim Construction in Patent Claim Construction (2014)).

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was not its only purpose—"[t]he legislation [was also] designed to establish a more efficient and streamlined patent system that [would] improve patent quality and limit unnecessary counterproductive litigation costs."198 Congress believes that higher quality patents ensure that "the United States . . . maintain[s] its competitive edge in a global economy," and encourages narrowly tailored claims to meet such goal by effecting a broader prior art, the effects of which are just starting to materialize. 199 Narrowing the scope of patent claims by eliminating areas that facilitate broader claims, such as inherent disclosures, would therefore be an effective way to increase overall patent quality and encourage competition.²⁰⁰ Increased competition would incentivize innovation, and higher patent quality would also have the added benefit of increasing efficiency at the USPTO.201

B. The Nonobviousness Definition is Not Obvious

Another area of patent law that needs guidance is nonobviousness.²⁰² The area of nonobviousness has plagued the patent community due to its inconsistent application and indeterminate standard.²⁰³ Adding further insult to injury, juries inevitably end up siding with hindsight,²⁰⁴ making "obviousness" an inevitable patent killer. Once obviousness is found, it is nearly impossible to convince someone otherwise.²⁰⁵ It has already been

^{198.} H.R. REP. No. 112-98, pt. 1, at 40 (2011).

^{199.} *Id.*; see also Pomper, supra note 31.

^{200.} Cf. Atofina v. Great Lakes Chemical Corp., 441 F.3d 991, 999 (Fed. Cir. 2006) ("There may be many species encompassed within a genus that are not disclosed by a mere disclosure of the genus. On the other hand, a very small genus can be a disclosure of each species within the genus."); In re Meyer, 599 F.2d 1026, 1031–32 (Fed. Cir. 1979) (holding that a claim of a genus does not mean that the patent claims all species within the genus).

^{201.} See generally U.S. PATENT & TRADEMARK OFFICE, 2014–2018 STRATEGIC PLAN (2014) [hereinafter USPTO STRATEGIC PLAN], http://www.uspto.gov/about/stratplan/USPTO_2014-2018_Strategic_Plan.pdf.

^{202.} See Gregory N. Mandel, Another Missed Opportunity: The Supreme Court's Failure to Define Nonobviousness or Combat Hindsight Bias in KSR v. Teleflex, 12 Lewis & Clark L. Rev. 323 (2008) [hereinafter Another Missed Opportunity].

^{203.} See id at 324.

^{204.} See id. at 340.

^{205.} See id. at 336–37.

argued that Alice may lead to some trolls avoiding litigation.²⁰⁶ Further, having a more selective novelty analysis will help unclog the system, which will lead to increased innovation and increased competition, and may result in less art belonging to trolls.²⁰⁷ In addition, with Octane increasing the stakes, others will avoid litigation to avoid possible attorney's fees.²⁰⁸ However, some trolls may not fear these reforms—they will not fear invalidation under Alice because their patents are strong enough to meet the threshold, and they will not fear Octane because a multi-million dollar verdict can offset any possible attorney's fees awarded. Moreover, some trolls would not fear a more selective novelty inquiry because their patents have already been determined as novel. Furthermore, none of the Court's recent decisions really threaten the trolls' ability to send letters that extort defendants into settlements. Those who fear litigation may come to realize that they can take advantage of the hindsight bias and the meaningless nonobviousness standard. Plaintiff-trolls challenge the validity of their prey's patent by oversimplifying issues to a jury (as they already do²⁰⁹) and use that threat to strong-arm defendants into settling outside of court. Thus, it is of the highest priority that the Court steps in to give some shape to the flawed nonobviousness standard.

It is easy to see, just by looking at the statute, how jurors have a difficult time understanding nonobviousness. ²¹⁰ Section 103 of the Patent Act states that an invention *is obvious* "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole *would have been obvious*... to a person having *ordinary skill in the art* to which the invention pertains." ²¹¹ However, the jury is asked for a determination of *non*obviousness. Stated another way, in order for an invention to be *not* obvious, jurors must find that a person

^{206.} See supra Part II.B.

^{207.} See supra Part III.A.

^{208.} See supra Part II.B.

^{209.} See Watkins, supra note 2, at 30. But see In re Robertson, 169 F.3d 743, 745 (Fed. Cir 1999) ("Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." (quoting Cont'l Can Co. v. Monsanto Co., 948 F.2d 1264,1269 (Fed. Cir. 1991)).

^{210.} See Another Missed Opportunity, supra note 202, at 335–36.

^{211. 35} U.S.C. § 103(a) (2012) (emphasis added).

of ordinary skill in the art would *not* have thought the invention *was* obvious at the time it was made.²¹² The double negative is only further confused if a jury is instructed that patent *ineligible* inventions are *invalid*, *not-novel* inventions are *invalid*, but *not-obvious* inventions are *not invalid*.²¹³ Additionally, the statute also states that "[p]atentability shall not be negatived by the manner in which the invention was made."²¹⁴ However, the statutory language is only the tip of the nonobvious problem, but some additional background information may be needed to explain why.

In comparing novelty and nonobviousness, nonobviousness raises questions of quality rather than quantity. Both analyses target the prior art, but nonobviousness posits a different question: Would a person having ordinary skill in the field think that the particular invention is obvious, when compared to the prior art, either because it is an instinctive or miniscule departure from previous inventions, or due to the obviousness of combining prior art references? This inquiry is thus determined by an evaluation of the invention itself, including its properties, operability, and utility, not by how much brainstorming, testing, or searching the inventor had to go through to arrive at the invention. Placently, the Court broadened the nonobviousness inquiry in KSR v. Teleflex when two or more prior art elements are combined, the result of which some commentators have described as the Supreme Court's supreme failure.

^{212.} See id.; see also Another Missed Opportunity, supra note 202, at 326.

^{213.} See Another Missed Opportunity, supra note 202, at 325.

^{214.} Id.; see also Richard S. Gruner, Everything Old is New Again: Obviousness Limitations on Patenting Computer Updates of Old Designs, 9 B.U. J. Sci. & Tech. L. 209, 264 (2003); Kimberly A. Moore, Jury Demands: Who's Asking?, 17 Berkeley Tech. L.J. 847, 848 (2002).

^{215.} See Heines, supra note 172, at 87, 89.

^{216.} See 35 U.S.C. \S 103; see also KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 406 (2007); Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966).

^{217.} See Heines, supra note 172, at 89.

^{218. 550} U.S. 398.

^{219.} See Another Missed Opportunity, supra note 202, at 324; see also Jason Brewer, Updating the Patent System's Novelty Requirement to Promote Small-Molecule Medicinal Progress, 45 J. MARSHALL L. REV. 1151, 1169 (2012); Gene Quinn, KSR on the 5th Anniversary: One Supremely Obvious Mess, IPWATCHDOG (Apr. 29, 2012), http://www.ipwatchdog.com/2012/04/29/ksr-the-5th-anniversary-one-supremely-obvious-mess/.

inventions will face the KSR v. Teleflex standard, as just about everything in the present day is a combination of prior art elements on some metaphysical level. 220

Currently, the standard for examining nonobviousness requires courts to consider the factors laid out in $Graham\ v.\ John\ Deere\ Co.$, which include: (1) the scope and content of the relevant prior art; (2) the differences between the disclosed invention and the prior art; and (3) the "level of ordinary skill" involved in the industry. Additionally, the courts may also consider oftentimes-irrelevant "secondary factors" such as the invention's "commercial success, long felt but unsolved needs, failure of others, etc., . . . to give light to the circumstances surrounding the origin of the subject matter sought to be patented." This analysis is further compounded in light of the Supreme Court's holding in KSR, which stated that a combination of prior art references may be obvious if a person having ordinary skill in the art may have hypothetically tried it. 223

In KSR, the Court rejected a rigid application of the "teaching, suggestion, or motivation" test²²⁴ previously utilized by the Federal Circuit to determine whether a combination of prior art elements was obvious, and instead posed the obviousness inquiry in light of the *Graham* factors: whether the prior art disclosures "would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does."²²⁵ However, the Court never attempted to indicate whom a person of "ordinary skill in the art" would be and did not direct courts to analyze any specific area of the art. Instead, the Court merely claimed that a person of ordinary skill in the art is "also a person of ordinary creativity, not an automaton."²²⁶ This standard has been inconsistently applied by

^{220.} See KSR, 550 U.S. at 418-19.

^{221.} See Graham, 383 U.S. at 17.

^{222.} *Id.*; see also Heines, supra note 172, at 107.

^{223.} KSR, 550 U.S. at 420.

^{224.} Under this test, the combination of prior art elements "is only proved obvious if 'some motivation or suggestion to combine the prior art teachings' can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art." Id. at 407 (quoting Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1323–24 (Fed. Cir. 1999)).

^{225.} *Id.* at 418.

^{226.} Id. at 421.

the USPTO, 227 and has led towards more deference to nonobjective hindsight in the courts. 228 Moreover, since the KSR holding, there has been a steady increase in the total number of patents issued and maintained: while just over 150,000 patents were issued in 2008, the amount more than doubled to just shy of 304.000 in 2014.229

The collective ambiguity is a result of the undefined "person of ordinary skill in the art" standard. To illustrate, if an inventor creates a method for administering a topical agent to treat bacterial ear infections, is the person of ordinary skill in the prior art the doctor who administers the antibacterial agent or a researcher with extensive knowledge of creating pharmaceuticals to treat such bacterial ear infections? The Federal Circuit, in Daiichi Sankyo Co. v. Apotex, Inc., overturned a district court ruling of nonobviousness for this invention that hinged on the belief that the person of ordinary skill was that of a person with a medical degree; the Federal Circuit, on the other hand, based its ruling of obviousness on the belief that inventors in the art comprised only "specialists in drug and ear treatments." 230 Accordingly, the Federal Circuit reasoned that an ordinary pediatrician would neither have the means nor motivation to create the "compound to treat ear infections without damaging a

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^{227.} See Gregory Mandel, The Non-Obvious Problem: How the Indeterminate Nonobviousness Standard Produces Excessive Patent Grants, 42 U.C. Davis L. Rev. 57, 109 (2008) [hereinafter The Non-Obvious Problem]; see also Adam B. Jaffe & Josh Lerner, Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress, and What to Do About It, 32–35, 75, 119–23, 145–49 (2004); A Patent System, supra note 75, at 87–95; Carl Shapiro, Patent System Reform: Economic Analysis and Critique, 19 Berkeley Tech. L.J. 1017, 1018 (2004).

^{228.} See Another Missed Opportunity, supra note 202, at 340–42.

^{229.} See U.S. PATENT & TRADEMARK OFFICE, FISCAL YEAR 2014 PERFORMANCE AND ACCOUNTABILITY REPORT 146 tbl. 6 (2014), http://www.uspto.gov/about/stratplan/ar/USPTOFY2014PAR.pdf. While some may attribute this to the increasing demand for patents worldwide, the amount of patents the USPTO has issued to residents of foreign countries has not increased significantly in the past five years, the only notable exception being Japan. *Id.* at 151–52 tbl. 10; see also USPTO STRATEGIC PLAN, supra note 201, at 5.

^{230. 501} F.3d 1254, 1256–57 (Fed. Cir. 2007), rev'g 441 F. Supp. 2d 672 (D. N.J. 2006).

patient's hearing," and ruled the invention obvious.²³¹ Thus, it is apparent that nonobviousness will differ depending on whether the person of ordinary skill in the art is one that could conceive the invention versus one who could reduce the invention to practice in order to fix a problem.²³²

The nonobviousness analysis is further complicated based on which field of art a court chooses to analyze. Presumably, the ordinary level of skill required for people in sophisticated arts is high, while the level of ordinary skill required for those in less sophisticated fields is low.²³³ If the art is very complicated, it could even be impossible for an inventor in a sophisticated field to meet the threshold because jurors cannot easily place themselves in such an inventor's shoes.²³⁴ The same result can occur in areas where the art does not require a high level of skill because it is easier to "implement a predictable variation" of a previous invention within the relevant prior art through "a simple mechanical solution."²³⁵ Simply stated, the ultimate result is that "[t]oo high a nonobviousness standard reduces the incentives for innovators to invent and disclose," while "[t]oo low a nonobviousness standard allows excessive patenting."²³⁶

In attempting to answer the question of ordinary skill in the art, courts oftentimes consider many factors, ²³⁷ several of which are oftentimes unhelpful. For example, two factors frequently considered are: (1) the inventor's education level, and (2) the level of sophistication required in the art. ²³⁸ Highly sophisticated and educated artists are expected to possess a higher level of creativity, and, therefore, the bar is set artificially high. ²³⁹ On

^{231.} Id. at 1257.

^{232.} See The Non-Obvious Problem, supra note 227, at 72–76.

^{233.} See id. at 75–76.

^{234.} See id. at 76.

^{235.} KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 417 (2007); Izzo Golf, Inc. v. King Par Golf Inc., 561 F. Supp. 2d 334, 340 (W.D.N.Y. 2008).

^{236.} The Non-Obvious Problem, supra note 227, at 89.

^{237.} See, e.g., Envtl. Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 696 (Fed. Cir. 1983) ("Factors that may be considered in determining level of ordinary skill in the art include: (1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.").

^{238.} See id.

^{239.} See The Non-Obvious Problem, supra note 227, at 74–76.

the other side of the spectrum, the bar is set artificially low; even educated artists in a relatively unsophisticated field can have a difficult time convincing a lay jury that their invention was not obvious because their art is not sophisticated.²⁴⁰ The result is the same in both situations—an obviousness finding. In one situation, jurors will assume a highly intelligent person would have thought the invention was obvious because the heightened level of skill required in the art requires an inventor to frequently think of solutions; in the other, the low sophistication of the art almost Thus, diligent patent trolls that presumes obviousness.²⁴¹ recognize this quandary can put the level of ordinary skill in the art into controversy to either conflate or simplify the issues.²⁴² This is particularly dangerous in the realm of patent trolling, where infringement plaintiffs often oversimplify legal issues and tug on the heartstrings of jurors in eastern Texas.²⁴³

Adding fuel to the fire is the existence of hindsight bias. The nonobviousness inquiry ponders whether the invention would have been obvious to a person of ordinary skill in the art at the time it was invented, but "when a patent application or a patent comes to an examiner or a court, an invention has [already] been achieved and a problem has been solved." Although "a lay decision maker can place himself or herself in the mindset of an ordinary person . . . lay individuals are generally not cognitively capable" of putting themselves in the shoes of an artist with ordinary skill at whatever time the invention was made. 245

Sometimes even multiple generations of the invention at issue have developed since the patent in question was issued and trolls

^{240.} See id. at 75.

^{241.} See id. at 74–76.

^{242.} *Cf.* Daiichi Sankyo Co. v. Apotex, Inc., 501 F.3d 1254, 1257 (Fed. Cir. 2007) (citing Merck & Co. v. Teva Pharm. USA, Inc., 347 F.3d 1367 (Fed. Cir. 2003)) (stating that when the level of ordinary skill in the art is not in controversy, the courts will not address the inquiry of ordinary skill). *But see* Printguard, Inc. v. Anti-Mktg. Sys., Inc., 535 F. Supp. 2d 189, 203 (D. Mass. 2008) ("[I]t is well-established that in certain situations, such as with relatively simple and understandable technology, a specific finding on the level of ordinary skill in the art is unnecessary because the prior art itself is representative of the relevant level of ordinary skill.").

^{243.} See Watkins, supra note 2, at 30–31.

^{244.} Jun Wu, Note, Rewinding Time: Advances in Mitigating Hindsight Bias in Patent Obviousness Analysis, 97 Ky. L.J. 565, 570 (2009).

^{245.} The Non-Obvious Problem, supra note 227, at 94.

that own older patents for obsolete technologies can argue that such advancements infringe on their technologically ancient patent. Alternatively, the same troll-plaintiffs could bring a declaratory judgment in order to invalidate their target's patent based on obviousness. This is likely, considering that some downstream barriers set up by the Court to curb patent trolling may be ineffective. These advances are believed to deter litigation, which makes the threat of invalidation a more valuable weapon for a troll because invalidation can be achieved via several methods of internal review. Therefore, it is imperative that the nonobviousness standard gets is thoroughly and clearly defined 247 before further abuse manifests itself in this gaping hole.

CONCLUSION

Patent trolls threaten the economy and undermine the

^{246.} See, e.g., 2014 in Patent Litigation, supra note 63, at fig. 21.

The author currently abstains from providing any suggestion as to what this definition might be because scholars with far more experience and knowledge in the field have supplied plenty of alternatives. For example, some argue that the test for obviousness should be dependent upon the motives for the invention—would the inventor have combined prior art elements "but for" the incentives of the patent system? See TO PROMOTE INNOVATION, supra note 94, ch. 4, at 6-8; Robert Merges, Uncertainty and the Standard of Patentability, 7 High Tech. L.J. 1, 35 (1992). Others argue for a test that bases obviousness on whether the invention was more than a mere trivial advance from the prior art. See Robert P. Merges, Commercial Success and Patent Standards: Economic Perspectives on Innovation, 76 CAL. L. REV. 803, 812 (1988). Another alternative is the constitutional standard, which seeks to set the nonobviousness standard at a level that would most efficiently promote innovation. See, e.g., Malla Pollack, The Multiple of Business MethodPatents:Unconstitutionality Common Sense, Congressional Consideration, and Constitutional History, 28 RUTGERS COMPUTER & TECH. L.J. 61, 120 (2002). However, all of these standards have fundamental flaws that would result in the same murky uncertainties. See The Non-Obvious Problem, supra note 227, at 84-89. Arguably the most favorable standard would "depend on how probable the invention would have been for a person having ordinary skill in the art working on the problem that the invention solves." Id. at 116. This is supported by case law and "at worst . . . provides no less incentive [to innovate] than the current standard.' Id. at 118; see also DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314, 1326 (Fed. Cir. 2009) ("Although predictability is a touchstone of obviousness, the 'predictable result' discussed in KSR refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose.' (quoting KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 416 (2007))).

Constitution by impeding innovation in open court and behind closed doors. Although the Supreme Court has taken steps in addressing the troll problem, these will only be temporary fixes. While some of the decisions of the past decade will deter trolls from litigation because of the threat of invalidation, increased or shifted burdens, or attorney's fees, the strong will still survive and continue with their nefarious tactics. In addressing the patent troll epidemic, it is imperative to not merely set up barriers downstream focusing on litigation. A much more effective method is to target ambiguous areas before the issue reaches the courts. To put a large dent in abusive patent troll activities both inside and outside of court, the system must change in a manner that keeps patents out of abusive litigants' hands to begin with. If patent trolls manage to hold broadly scoped patents, the strongest remedy would be to increase the scrutiny involved in the patentability analysis to make the system more impervious to troll tactics. Trolls will continue to send out threatening letters, and until their firepower is reduced, they will continue to remain a threat. Such lasting change must come from the Court because other modes have been astoundingly ineffective.