
COMMENT

IMPROVING THE PATENT SYSTEM BY ENCOURAGING INTENTIONAL INFRINGEMENT: THE BENEFICIAL USE STANDARD OF PATENTS

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With the growing importance of intellectual property in the global economy, “patent infringement” has become a dirty phrase for patentees and defendants alike. For plaintiffs, it raises thoughts of the theft of one’s just deserts. Yet defendants may think of nuisance-value suits and artificial impediments to the free flow of information. Neither side is happy because the American patent system adopts a blunderbuss approach to granting and protecting inventions. We have a one-size-fits-all solution regulated by an administrative agency, the U.S. Patent and Trademark Office, incapable (perhaps intentionally) of reliably screening out low-quality patent applications. The result has been a deluge of patents that have been granted when they should not have been—i.e., patents that remain unlitigated, impose high costs, and chill follow-on innovation. But because all patents are treated alike, good patents and bad patents are equal under the law; the patent right is always of equal “strength.”

In this Comment, I argue that patent infringement is something to be embraced, not avoided. Much as the legal academy and practitioners have adopted the counterintuitive idea of the efficient breach of contracts, I note that there is such a thing as the efficient infringement of patents; we should be encouraging infringement in certain circumstances to address to the vast private and social costs in today’s patenting system. In this Comment, I analyze the economic and philosophical underpinnings of patent rights, and also make comparisons to trademark law and water law—another

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area of law that assigns rights under conditions of scarcity. Through this analysis, I demonstrate that sometimes incentivizing patent infringement by varying the strength of the patent right is preferable to the status quo. There is no reason for us to have a one-size-fits-all patent right when granted patents are often of low quality and there is room to fit the strength of the right to the underlying value of the patent.

Simply put, I show that a “beneficial use” standard for patents, one that identifies whether the patent owner is exploiting the granted patent right in a societally beneficial manner, is more efficient and makes for better policy than our current system.

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INTRODUCTION

Calls for patent reform have reverberated loudly from Silicon Valley to the halls of Congress, making for unlikely bedfellows like Adobe and JCPenney in the battle against nonpracticing entities (NPEs), or so-called patent trolls.¹ Although post–America Invents Act (AIA) Congresses have proposed myriad bills seeking to address the purported inefficiencies of the patent system, none have reached the President’s pen.² Far from solving an obvious problem, patent reform has faced roadblocks because there is little

¹ Brian Fung, *Patent Reform Advocates Are Launching a ‘Super-Coalition’ to Whack Patent Trolls*, WASH. POST (Jan. 15, 2015), <https://www.washingtonpost.com/news/the-switch/wp/2015/01/15/patent-reform-advocates-are-launching-a-super-coalition-to-whack-patent-trolls/> [https://perma.cc/46NU-BDDA].

² Pauline Pelletier & Eric Steffe, *What to Know About Patent Reform Bills Heading Into 2016*, LAW360 (Dec. 23, 2015, 10:24 AM), <http://www.law360.com/articles/740947/what-to-know-about-patent-reform-bills-heading-into-2016> [https://perma.cc/KE87-78DB]; see also Paul R. Gugliuzza, *Patent Litigation Reform: The Courts, Congress, and the Federal Rules of Civil Procedure*, 95 B.U. L. REV. 279, 281 (2015) (stating that none of the patent reform bills proposed in the 113th Congress became law).

consensus regarding what the exact problem is and which policy levers Congress should pull to fix the issue du jour. For instance, empirical data present a far from convincing picture of the negative impacts of NPE activity.³ Nor is it obvious that we should simply make issued patents better by throwing money at the Patent Office to make it a more effective screening mechanism, rooting out “bad” patents before they can even become patents.⁴ Despite all of what we *do not* know, there are some critical and near-universal opinions about the patent system that suggest we should attempt to fix it rather than give up in the face of uncertainty: an incredible number of patents are low-quality (i.e., were granted and should not have been)⁵ and remain unlitigated.⁶

Even if we are to assume that worthless patents are cost-neutral to society and there are no externalities, these patents have already imposed administrative costs on the U.S. Patent and Trademark Office (USPTO) and private costs on the patentee. At best, spending capital on droves of frivolous patents indicates at least partial market failure due to cost-internalization issues on the part of the patentee. At worst, poor quality creates inherent uncertainty in patents, driving up private and social costs.⁷ In addition, unlitigated or low-quality patents can still exert a strong chilling effect on follow-on innovation, especially in a portfolio of related patents (a so-called patent thicket).⁸ It is difficult to quantify such effects. After all, how does one quantify the mere potentiality for more innovation had it not been for a blocking patent or portfolio? Thus, it makes it difficult to legislate a solution because it is nearly impossible to measure innovation that does not exist but could have existed had it not been for a predicate condition. So how would Congress, using command-and-control policy levers, ever be able to legislate an optimal solution given that the requisite cost–benefit analysis is shrouded in uncertainty?

³ See, e.g., Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457, 497-98 (2012) (suggesting that “NPEs appear to be an important outlet for the enforcement of inventor-owned patents”).

⁴ See Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1508-11 (2001) (arguing that improving the U.S. Patent and Trademark Office process to screen out more bad patents would incur greater costs than simply dealing with problematic patents when they are later litigated).

⁵ See R. Polk Wagner, *Understanding Patent-Quality Mechanisms*, 157 U. PA. L. REV. 2135, 2172 (2009) (discussing the “widespread agreement” that there is a problem with poor patent quality).

⁶ See Kimberly A. Moore, *Worthless Patents*, 20 BERKELEY TECH. L.J. 1521, 1521-22 (2005) (noting that the USPTO grants approximately 180,000 patents each year, but patent holders file only 3000 lawsuits annually—involving a mere 4500 patents). The difference between the total number of patents and those patents that are litigated is more striking when considering the fact that a patent can be litigated at any point during the patent term (which is currently twenty years from filing), not merely in the year it was granted. 35 U.S.C. § 154(a)(2) (2012). And over its twenty-year term, the same patent can also be repeatedly litigated against multiple parties.

⁷ Wagner, *supra* note 5, at 2140-43.

⁸ For more information on patent thickets, see generally Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1 (2005).

Instead of ham-handedly passing laws in an attempt to address the symptoms of an inefficient patent system, a better approach would be to offer incentives to patentees to encourage societally beneficial patenting behaviors and punish them for detrimental behaviors.⁹ In this Comment, I argue that we can do so by varying the strength of the patent right as a function of the patent owner's post-grant behavior. Under such an approach, "good" behaviors would be rewarded with a stronger patent right. Undesirable behaviors, such as letting the patent lay unexploited and unused, would be punished with a weaker patent right. And, as I will explain, even though this solution targets patents after they have been granted, it also has the benefit of changing the behavior of prospective patentees.

In proposing to adjust patent strength, I must emphasize that I do not mean adjusting patent *scope*. Adjusting scope by, for instance, varying the amount of underlying matter the patent seeks to protect is not the aim of this proposal. Changing how much an issued patent's claims cover is antithetical to efficiency because doing so would heighten uncertainty over the scope of a patent and would defeat the public-notice function of patent claims.¹⁰ In terms of what it means to vary patent *strength*, I proceed from the notion that the strength of a right ultimately lies in the right's redressability. As Chief Justice Marshall said, "[E]very right . . . must have a remedy, and every injury its proper redress."¹¹ So the strength of the patent right lies in how violations of that right are to be rectified (or not rectified, as the case may be).

We traditionally conceive of the patent claim as static. That is, once the USPTO grants a patent, the strength of that right is invariant with time.¹² This is because the typical justification for the static nature of the patent right comes from the public-notice function of the patent claims.¹³ But public notice speaks to what may trigger infringement liability, which is a separate question from the strength of the patent right itself. This Comment does not propose to alter what conduct gives rise to infringement liability. Rather, it

⁹ See, e.g., Wagner, *supra* note 5, at 2165 (proposing that the best way to address issues within the patent system is to increase incentives to file better patents, decrease incentives to file bad patents, or do both).

¹⁰ See *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 232 (1942) ("[Patent claims] inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used . . . and which may not." (quoting *Gen. Elec. Co. v. Wabash Corp.*, 304 U.S. 364, 369 (1938))).

¹¹ *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 147 (1803).

¹² See *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984) (noting that the USPTO's broad interpretation of patent applications "serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified."); see also Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 102-03 (2005) (noting that a fundamental question in the current patent law is determining at which point in time a patent claim's scope should be fixed).

¹³ See *supra* note 10.

suggests that we should seek to modulate the law's ability to redress any patent infringement depending on desired policy outcomes. Effectively, I am advocating for the government, in some circumstances, to encourage patent infringement by reducing the ease or degree of redressability for that infringement. This would also award the intentionally infringing party more negotiating power over the patent owner during pre-enforcement bargaining or settlement negotiations.

This proposal is very much akin to encouraging efficient breaches of contracts by restricting specific performance remedies for breaches. Efficient breach stems from the idea that "if the promisor's gain from breach, after payment of expectation damages, will exceed the promisee's loss from breach," the net gain in social utility from nonperformance is greater than if the contract was performed.¹⁴ Correspondingly, it is sometimes socially desirable to encourage patent infringement, and so the government should act to encourage it in instances where the benefits of infringement outweigh the costs of enforcement. But, of course, the devil is in the details.

Scholars have discussed potential administrative reforms of the USPTO extensively, thus targeting the patenting process before a patent issues in the hope that the final granted patents are of higher quality.¹⁵ Legislators have also proposed litigation reforms and tweaks to procedural rules because they have identified vexatious litigation by patent trolls as a severe problem generating high social costs.¹⁶ These academic and legislative proposals do not, however, seek to create different classes of granted patents as I do here. Because there are many ways to vary the strength of the patent right, I do not make a specific policy proposal, which would be beyond the scope of this Comment. I instead make a normative claim that it is desirable and optimal to reform the patent system in such a manner. Embedding change as a part of the right itself, as I propose here, is neither antithetical to the concept of a right (as demonstrated by water law) nor alien to intellectual property rights (as demonstrated by the doctrine of incontestability in federal trademark law).¹⁷ And part of the appeal of this situation is that it exerts influence on all patents, not just on patent applications or litigated patents.

This Comment proceeds in four parts. Part I discusses the modern realities of the patent system. There are many extrinsic and intrinsic pressures

¹⁴ Melvin A. Eisenberg, *Actual and Virtual Specific Performance, the Theory of Efficient Breach, and the Indifference Principle in Contract Law*, 93 CALIF. L. REV. 975, 997 (2005).

¹⁵ See, e.g., Carl Shapiro, *Patent System Reform: Economic Analysis and Critique*, 19 BERKELEY TECH. L.J. 1017, 1035-39 (2004) (describing proposed reforms of the USPTO, such as increasing the amount of time spent examining patents and restructuring the patent examination process).

¹⁶ See Gugliuzza, *supra* note 2, at 281 ("At least fourteen patent reform bills were introduced in the . . . 113th Congress. Several of those bills focused specifically on patent litigation . . ." (footnote omitted)).

¹⁷ See 15 U.S.C. § 1065 (2012).

driving firms to prematurely seek patent protection, and this prematurity means that patents can be better conceptualized as prospects—i.e., opportunities to exploit or develop a technological opportunity.

In Part II, I compare and contrast the law of prior appropriation of water with patent law and establish many critically important similarities (and differences) stemming from the conception of patents as prospects for innovation. Namely, water law has a requirement of beneficial use, requiring water appropriators to be continuously and productively using the water as a prerequisite for maintaining their right to use that water. Water law is useful as a point of comparison because although a water right is a usufructuary interest, the rationales underlying the law of appropriation are akin to those considerations underpinning patent rights.

I proceed to argue in Part III that these important similarities between appropriative water law and patent law demonstrate that a strength-invariant patent right is economically inefficient for allocating scarce resources (in this case, a government-imposed scarcity). Rather, allowing for easier infringement of certain patents would allow for a more efficient allocation of inventive potential. I also defend the proposal on a philosophical basis.

Finally in Part IV, I discuss examples of observable proxies for determining whether the patent is being used in an efficient and socially beneficial manner. Since a patent-by-patent analysis by the USPTO of whether a patent owner is usefully and productively harnessing the patent monopoly is costly and administratively infeasible, finding good proxies is a critical precondition to the implementation of any policy changes. This Comment, however, does not explore the exact ways in which patent strength can be altered. There are many ways that policymakers can tinker with the strength of the right. To decrease strength, patents can be given a weaker presumption of validity at trial; equitable relief (i.e., permanent injunctions) can be foreclosed; the amount of awardable damages can be decreased; and the pleading standards for patent infringement can be lowered. There are a number of ways that the patent right can be altered, and a case-by-case discussion of how each of these methods might work to achieve the desired policy outcomes is beyond the scope of this Comment and calls for additional research.

Before I engage in further discussion, however, I want to clarify what costs this Comment seeks to address. The costs I discuss are broader than simply those inefficiencies or secondary markets that might unintentionally arise from the patenting system, such as patent trolls.¹⁸ I proceed from the

¹⁸ See, e.g., James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. 387, 423 (2014) (concluding that the costs from NPE lawsuits are “substantial, and . . . correspond to substantial social costs as well”); John F. Luman III & Christopher L. Dodson, *No Longer a Myth, the Emergence of the Patent Troll: Stifling Innovation, Increasing Litigation, and Extorting Billions*, 18

Schumpeterian premise that monopolistic conditions may be better at fostering innovation than an unrestrained free market.¹⁹ Indeed, American patent law is founded upon fostering innovation.²⁰ Thus, patents, as weak-form monopolies, generate some sort of social cost as part of the bargain with inventors to encourage the public disclosure of innovation. But the costs of a patent are not only embodied by the deadweight loss from monopoly pricing, but also in the case of the marginal follow-on inventor: someone who would have innovated had it not been for a preexisting poor-quality patent or portfolio.²¹ I will show how my proposed changes, which act by varying the strength of the patent monopoly itself, address these concerns.

I. PATENTS AS PROSPECTS

There is near-universal agreement that patents influence innovation, but how patents do so is subject to considerable debate. Traditionally, a patent's influence on innovation is rooted in the patent's ability to allow the inventor to recoup initial investments in research and development. Professor Lemley calls this the *ex ante* justification for patenting “since, under this conception, the goal of intellectual property is to influence behavior that occurs before the right comes into being.”²² At first blush, the *ex ante* justification—the “rewards” theory of patenting—appears to provide both the strongest justification for, and most accurate description of, the current American patent system: we should only reward those inventors who come up with viable ideas and bring them to fruition.

INTELL. PROP. & TECH. L.J. 12, 13 (2006) (“Patent trolls therefore exploit the inefficiencies of the USPTO to target an increasing number of potential infringers.”); Damian Myers, Note, *Reeling in the Patent Troll: Was eBay v. MercExchange Enough?*, 14 J. INTELL. PROP. L. 333, 335-37 (2007) (adopting the normative premise that it is better to stem NPE activity); Andrea Peterson, *Is 2015 the Year Congress Finally Takes on Patent Trolls?*, WASH. POST (Apr. 29, 2015), <https://www.washingtonpost.com/news/the-switch/wp/2015/04/29/is-2015-the-year-congress-finally-takes-on-patent-trolls/> [https://perma.cc/4V8J-U6CJ] (summarizing calls for patent reform to address the problem of patent trolls and considering whether congressional action is imminent).

¹⁹ This is consonant with the highly influential view of innovation developed by Joseph Schumpeter, which holds that various kinds of monopolies, such as patents, could “produce not only steadier but also greater expansion of total output than could be secured by an entirely uncontrolled onward rush that cannot fail to be studded with catastrophes.” JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 91 (George Allen & Unwin Ltd. 1994) (1943).

²⁰ See *Graham v. John Deere Co.*, 383 U.S. 1, 5-6 (1966) (“The Congress in the exercise of the patent power may not . . . enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby.”).

²¹ See *supra* text accompanying note 8. See generally Parchomovsky & Wagner, *supra* note 8 (describing the potential costs to innovation of patent portfolios).

²² Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 130 (2004).

Innovation, however, presents a classic common-pool problem because it is shared among many firms and actors. Without patents, no single firm can control innovation to any significant degree, and therefore multiple firms might expend resources to develop the same idea. This duplicative ex ante spending to develop an idea might exceed any social surplus created by the invention. In order to address this issue, Judge Posner noted that “[p]atents are granted before an invention has been carried to the point of commercial feasibility[, and this] heads off costly duplication of expensive development work.”²³ Consequently, many scholars believe that rather than offering a purely ex ante incentive, patents additionally (or instead) offer some amount of ex post incentives. Far from being simply a reward for investments in innovation that have already taken place, a patent can be viewed as a “particular opportunity to develop a known technological possibility.”²⁴

The prospect theory of patents, made famous by Edmund Kitch in an article comparing patents to mining claims,²⁵ is one such ex post justification for patenting because it is predicated on “incentives [that] the [patent] right gives its owner to manage works that have already been created.”²⁶ Though the theory has been subject to both empirical and theoretical criticism,²⁷ it has also been applauded by notable patent scholars.²⁸ It remains an influential and compelling view of patents. And despite criticisms, what is near-certain is that many patents are granted before the subject matter contained within the patent is commercialized or usable:

United States patent law, and in fact most national patent system law, has long encouraged inventors to file their patent applications shortly after the invention's conception. . . . [P]atent law removes many of the potential barriers to early filing by having no actual reduction to practice requirement, a lax utility requirement, and the ability to file a provisional

23 RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* § 3.3, at 39 (7th ed., 2003). Judge Posner also articulates a point that will be discussed later in this Comment: “if [a patent is] granted too early—before the inventor actually knows how to make the product . . . a patent may actually retard innovation . . .” *Id.*

24 Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977).

25 See generally *id.*

26 Lemley, *supra* note 22, at 130.

27 See, e.g., Donald G. McFetridge & Douglas A. Smith, *Patents, Prospects, and Economic Surplus: A Comment*, 23 J.L. & ECON. 197, 203 (1980) (“[P]rospect features fail to assist market participants in their attempt to economize on the common property resource.”); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 871 (1990) (attacking the prospect theory because it promotes the idea that coordinated exploitation of ideas is more efficient than “rivalrous uncoordinated invention”).

28 See, e.g., Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1045 (1997) (describing Kitch's article as “one of the most significant efforts to integrate intellectual property with property rights theory”).

application. . . . Patent law pushes the inventor to file early to increase the likelihood of the patent's validity.²⁹

Furthermore, there is empirical evidence that patents, even provisional patents, attract equity financing from firms, particularly in early venture capital financing rounds.³⁰ “[T]he process of patenting generates signals which help to overcome the liabilities of newness faced by new ventures.”³¹ It has become “conventional wisdom” that “the faster [the] filing [for patents] the better.”³² And nascent econometrics literature has also started to focus on the timing of the patent disclosure in the research and development process. For example, Professors Hopenhayn and Squintani have constructed a continuous-time race model that simulates the efforts of competing firms trying to patent an invention; the model seeks to better understand the impact of the timing of patent disclosures on social welfare.³³ Thus, it seems that patents have become prospects whether we like it or not.

How do we construct a fence around mere possibility—a prospect—especially when we cannot fully anticipate what the private or the public value of the patent will be, all while optimizing the chance to exploit opportunity without excessive deadweight loss? That is the question the patent system must seek to answer. The traditional notion of a static patent right, therefore, has little to no logical coherence in light of the theory of patents as prospects. Currently, patent rights are granted *ex ante* to the utilization (or lack thereof) and enforcement of the right. In patent law, these prospects are under an artificially imposed scarcity because the current conception of patent law makes it such that one particular opportunity is available to one person at a time: the patentholder. Only after expiration of the absolute patent right can others harness that opportunity.

Prior appropriation water law sheds light on this issue. Like patents, it is a system of allocating property rights for a common resource that, if left unregulated and unchecked, can result in massive allocative inefficiencies.

²⁹ Christopher A. Cotropia, *The Folly of Early Filing in Patent Law*, 61 HASTINGS L.J. 65, 72 (2009).

³⁰ See Dietmar Harhoff, *The Role of Patents and Licenses in Securing External Finance for Innovation* (explaining that patents function as an informational tool to potential financiers and that the value of this information can be greater than the actual protections afforded by the patent), in HANDBOOK OF RESEARCH ON INNOVATION AND ENTREPRENEURSHIP 55, 63 (David B. Audretsch et al. eds., 2011). It is worth noting, however, that empirical studies of the signaling quality of patents remain in their infancy. The papers cited in Professor Harhoff's article suggest a correlation between patenting behaviors and financing. But to conclude that such a relationship is causal and free of endogeneities would be premature.

³¹ *Id.* at 64.

³² Bongsun Kim et al., *The Impact of the Timing of Patents on Innovation Performance*, 45 RES. POL'Y 914, 924 (2016).

³³ Hugo A. Hopenhayn & Francesco Squintani, *Patent Rights and Innovation Disclosure*, 83 REV. ECON. STUD. 199, 204-05 (2016).

And it illuminates the normative argument of this Comment: the strength of the patent right, once granted, should not be static.

II. PRIOR APPROPRIATION WATER LAW AND PATENTS

The expansion and contraction of property rights has always been a part of the American legal tradition. We begin by looking at the flux in the strength of property rights at the nadir of American history: legalized slavery,³⁴ the consequences of which were only partly addressed through a bloody Civil War and subsequent Reconstruction Amendments.³⁵ Some of the friction over slavery was ignited by the young nation's desire to achieve its "manifest destiny" to extend its grasp westward far beyond the Ohio River Valley³⁶ while still maintaining the balance of free states and slaveholding states in the Senate.³⁷ And despite the many factors complicating westward expansion, these issues mattered little to many of the individuals sprinting west in search of riches.³⁸ As people moved west, there were additional strains on both the resources necessary to sustain the burgeoning population and the corresponding social institutions responsible for allocating resources in times of scarcity. One such resource was water.

Riparian water rights, born in English common law and adopted by the eastern states, gave only those property owners adjacent to surface water usufructuary rights in that water.³⁹ Other property owners who sought to improve the value of nonadjacent surrounding lands, such as by construction of irrigation channels, did not have any right or claim to the use of the water unless their property was directly abutting the surface water.⁴⁰ But such a

³⁴ See, e.g., *Dred Scott v. Sandford*, 60 U.S. 393, 404-06 (1856) (upholding the practice of slavery under property rights).

³⁵ See William H. Rehnquist, *The Notion of a Living Constitution*, 54 TEX. L. REV. 693, 702 (1976) (addressing the reputational harm the Supreme Court suffered as a consequence of the *Dred Scott* decision).

³⁶ See, e.g., Homestead Act of 1862, Pub. L. No. 37-64, 12 Stat. 392 (repealed 1976) (granting title to American citizens who settled and farmed western land); Act of Aug. 14, 1848, 9 Stat. 323 (1848) (establishing the Oregon territory as "west of the summit of the Rocky Mountains"); Stephen Aron, *Lessons in Conquest: Towards a Greater Western History*, 63 PAC. HIST. REV. 125, 137-38 (1994) (describing expansion into the West); see also Patrick Austin Perry, *Law West of the Pecos: The Growth of the Wise-Use Movement and the Challenge to Federal Public Land-Use Policy*, 30 LOY. L.A. L. REV. 275, 280-86 (1996) (reviewing the legal history behind western expansion).

³⁷ See ROBERT PIERCE FORBES, *THE MISSOURI COMPROMISE AND ITS AFTERMATH: SLAVERY AND THE MEANING OF AMERICA* 5, 8-9 (2007).

³⁸ See RAY ALLEN BILLINGTON & MARTIN RIDGE, *WESTWARD EXPANSION: A HISTORY OF THE AMERICAN FRONTIER* 232-34 (6th ed. 2001) (discussing the desire of many to move west despite poor conditions on the trip).

³⁹ Lucien Shaw, Chief Justice of the Supreme Court of Cal., *The Development of the Law of Waters in the West*, Address Before the American Bar Association (Aug. 9, 1922), in 10 CALIF. L. REV. 443, 447 (1922).

⁴⁰ *Id.*

system failed to effectively or efficiently allocate water in the drought-prone, arid West.⁴¹ The differences in climate between the thirteen colonies and the West meant that the English tradition was woefully inadequate in addressing the needs of the growing population and water-intensive gold mining, which required constructing works to divert rivers and streams from their natural course.⁴² If farmers irrigating crops far from the source of the water or gold miners diverting streams did not possess a right in the use of the water simply because they were not located adjacent to the water's source, then that would effectively render fallow and unproductive all land not adjacent to surface water—which is a lot of land.

In response, miners and homesteaders in the West drew upon the laws and traditions of Native Americans and previous Spanish colonizers to develop the law of appropriation,⁴³ which seventeen western states adopted.⁴⁴ Any water on public lands was subject to appropriation by someone who wanted to put the water to beneficial use.⁴⁵ Rights would vest once actual work was completed to divert the water to where it was needed.⁴⁶ Once vested, the appropriator would have the ability to perpetually use and consume the same quantity of water each year,⁴⁷ and the beneficial uses of that water form the boundaries of the claimant's usufructuary right.⁴⁸ Critically, if the appropriator stopped putting the water to that beneficial use, then the appropriation right was lost under a “use it or lose it” principle.⁴⁹

⁴¹ See Norman K. Johnson & Charles T. DuMars, *A Survey of the Evolution of Western Water Law in Response to Changing Economic and Public Interest Demands*, 29 NAT. RESOURCES J. 347, 348 (1989) (discussing the changes in water rights laws necessitated by the dry climate); see also Chennat Gopalakrishnan, *The Doctrine of Prior Appropriation and Its Impact on Water Development: A Critical Survey*, 32 AM. J. ECON. SOC. 61, 62 (1973) (“[I]f every drop of water which falls on the mountains of the West could be made available, there would not be enough to supply one-half of the land situated for irrigation.”).

⁴² See Johnson & DuMars, *supra* note 41, at 347-48 (commenting that the similar climates of England and the eastern states allowed for similar water rights laws, but that no such similarity existed in the West).

⁴³ *Id.* at 349.

⁴⁴ See Frank J. Trelease, *Preferences to the Use of Water*, 27 ROCKY MTN. L. REV. 133, 133 (1955) (“In all of the 17 western states the constitutions or statutes adopt the law of prior appropriation for the regulation of rights to the use of water.”).

⁴⁵ See Shaw, *supra* note 39, at 451 (explaining that, for example, a diverter who used the water for a beneficial use established a vested right to use the water).

⁴⁶ *Id.*

⁴⁷ See *Arizona v. California*, 283 U.S. 423, 459 (1931) (“To appropriate water means to take and divert a specified quantity thereof and put it to beneficial use in accordance with the laws of the state where such water is found, and, by so doing, to acquire under such laws, a vested right to take and divert from the same source, and to use and consume the same quantity of water annually forever, subject only to the right of prior appropriations.”).

⁴⁸ See Johnson & DuMars, *supra* note 41, at 350 (emphasizing the requirement that the use be beneficial).

⁴⁹ *Id.*

The law of water appropriation exhibits three main characteristics: priority, diversion, and beneficial use.⁵⁰ Two of these—priority and diversion—can be directly analogized to patent law. Beneficial use, however, lacks an analogue in the current patent law framework. This Comment focuses on the lack of a beneficial-use requirement in patent law as a source of vast economic inefficiency in the patent system that should be addressed by policy reforms.

A. Priority

The principle of “first in time, first in right,” otherwise known as priority, controls water appropriation.⁵¹ Those who are first to perfect a claim are senior in rights to all those who come after.⁵² Senior claimants’ uses have priority over all junior claimants’ uses; only after more senior claimants have satisfied their claim can a junior claimant then access the water.⁵³ Challenges to priority are resolved in favor of the claimant who first began work on diverting the water for beneficial use.

Analogously, patent law is also focused on priority. Before the passage of the AIA, American patent law featured a first-to-invent system whereby priority contests were resolved in favor of the inventor who first conceived of an invention and diligently reduced it to practice.⁵⁴ Now, whoever first files the patent application is awarded the patent.⁵⁵ Thus, a patent application filed later necessarily loses to an application filed earlier. Beyond a focus on priority, there are much deeper similarities between patent law and the law of water appropriation. Earlier patents affect later-filed patents or applications even if they do not contain the same invention.⁵⁶ Because of this blocking function, earlier patents can change the incentives of subsequent follow-on innovators. This blocking function compares to the law of water appropriation, where junior claimants’ rights are affected by senior claimants’ rights.⁵⁷

For example, consider a mine owner who diverts eighty percent of the water flow of a river into a mine. Months later, a farmer might want to use the remaining water for irrigation, but even though there is *some* water left in

⁵⁰ *Id.*

⁵¹ See *People v. Shirokow*, 605 P.2d 859, 864 (Cal. 1980).

⁵² See *Jennison v. Kirk*, 98 U.S. 453, 457 (1878) (“The first appropriator was everywhere held to have, within certain well-defined limits, a better right than others to the claims taken up . . .”).

⁵³ *Johnson & DuMars*, *supra* note 41, at 350.

⁵⁴ See 35 U.S.C. § 102(g) (2006) (“In determining priority of invention under this subsection, there shall be considered . . . the respective dates of conception and reduction to practice . . .”).

⁵⁵ See 35 U.S.C. § 102(a) (2012) (rejecting a patent if a previously filed patent application described the invention).

⁵⁶ See *Parchomovsky & Wagner*, *supra* note 8, at 62 (noting the burden on potential innovators to first acquire the related patents in their field).

⁵⁷ See *Johnson & DuMars*, *supra* note 41, at 350.

the river, the farmer might refrain from constructing the irrigation canals because there is not enough water left in that river to justify the cost. To directly analogize to the patent world, subsequent innovators might find that earlier patents or patent thickets crowd out any space to innovate in a given field, thus deterring innovation. That is not to say that there is no space left to innovate in the presence of a thicket. A creative inventor may find ways to patent around a patent thicket, but invention is well described as an iterative process whereby innovation builds on those that have come before it.⁵⁸

B. *Diversion*

Another element of an appropriation claim is “some physical act with respect to the water by the appropriator to manifest the possessory right.”⁵⁹ Thus, a valid claim requires an effort or input on the part of the appropriator to harness the water to some beneficial use.⁶⁰

As applied to patents, the same logic is present in the principle of actual reduction to practice, which, as previously noted, was critical in resolving pre-AIA contests between inventors.⁶¹ Actual reduction to practice of an invention reflects the inventor’s exertion of effort to transform an idea into patentable form.⁶² Post-AIA, it matters little *when* something is actually reduced to practice because of the switch to a first-to-file system. But the American System is still concerned with the inventor’s exertion of effort in developing a patentable product or process that is novel and nonobvious as demonstrated by the requirements of Sections 102 and 103.⁶³ There must be some kind of inventor input and effort because, as the Supreme Court recognized in *KSR International Co. v. Teleflex Inc.*, “[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress and may . . . deprive prior inventions of their value or utility.”⁶⁴

⁵⁸ See Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, 29-32 (1991) (discussing how technological progress is built upon earlier innovations).

⁵⁹ Fullerton v. Cal. State Water Res. Control Bd., 153 Cal. Rptr. 518, 524 (Cal. Ct. App. 1979); see also *In re Vought*, 76 P.3d 906, 912 (Colo. 2003) (requiring “physical acts or other useful acts towards effectuating an appropriation” to underlie an appropriator’s claim to water); State *ex rel.* Martinez v. McDermott, 901 P.2d 745, 748 (N.M. Ct. App. 1995) (allowing an appropriator to date back a water claim to “the beginning physical acts to take and use water”).

⁶⁰ Some states have removed this requirement statutorily by allowing *in situ* diversion of water to perfect the right, effectively eliminating the diversion requirement but keeping the beneficial-use requirement. See, e.g., State v. Morros, 766 P.2d 263, 266-67 (Nev. 1988).

⁶¹ See *supra* note 54 and accompanying text.

⁶² See *Newkirk v. Lulejian*, 825 F.2d 1581, 1582 (Fed. Cir. 1987) (“[A]ctual reduction to practice requires demonstration that the embodiment relied upon as evidence of priority actually worked for its intended purpose.” (citing *Wiesner v. Weigert*, 666 F.2d 582, 588 (C.C.P.A. 1981))).

⁶³ 35 U.S.C. §§ 102-03 (2012).

⁶⁴ 550 U.S. 398, 419 (2007).

C. Beneficial Use

Any desired diversion must put the water to a beneficial use, or else no right exists to appropriate the water.⁶⁵ What constitutes beneficial use, however, is admittedly not clearly defined.⁶⁶ But the beneficial-use requirement does important work in restricting the full scope of the prior appropriation rule. First, the requirement demands an appropriator's continuous use of the water in order to maintain enjoyment of the right.⁶⁷ Second, the use of the water must be for "productive purposes" only.⁶⁸ And third, it allows judicial intervention for excessive uses of the water.⁶⁹

Patent law does not have a comparable requirement of beneficial use. Utility patents encompass broad categories of patentable subject matter: processes, machines, manufactures, and compositions of matter.⁷⁰ But there are no requirements on what a patentee must do after her patent issues to retain full patent protection. Rather, all patents receive the full presumption of validity after they issue, regardless of whether the patentee chooses to use the patent.⁷¹

To further elucidate the importance of this distinction between patent law and prior appropriation, we return to the example of the mine owner and the farmer wherein the mine owner uses eighty percent of the water from a river. As a result of the mine owner's use of the water, the farmer chooses not to appropriate the remainder of the water because there is not enough left to cost-effectively divert for watering crops. Per the beneficial-use requirement, if the mine owner no longer utilizes the water for the mine (or uses less water), the right to divert eighty percent of the water diminishes to the degree that use is the lessened. And if the mine owner's use ceases, then all rights dissipate. The farmer could now divert the river water to crops. Now, imagine that the river water is allocated under the patent regime and there is no requirement of beneficial use. The mine owner would retain the water right even if her use stopped. The farmer would still be blocked from appropriating

⁶⁵ See Shaw, *supra* note 39, at 451 ("The waters of these streams on the public lands of the United States were all subject to appropriation at any time by any person who proposed to devote the water so taken to a beneficial use.").

⁶⁶ See Samuel C. Wiel, *What is Beneficial Use of Water?*, 3 CALIF. L. REV. 460, 461 (1915) (noting that many cases setting down the meaning of beneficial use focused on what beneficial use is *not* rather than what it is).

⁶⁷ A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 5:66 (2015).

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ 35 U.S.C. § 101 (2012).

⁷¹ *Id.* § 282(a). Nonetheless, litigants can still challenge the validity of patents in litigation or via administrative procedures before the USPTO. See *id.* § 282(b) (allowing an alleged infringer to raise invalidity of the asserted patent as a defense in litigation); *id.* § 311(a) (providing that any nonowner of a patent can file a petition for inter partes review of the patent); *id.* § 321 (providing that any nonowner of a patent can file a petition for post-grant review).

the water even though there would be enough water available to use for watering crops.

Herein lies the fundamental inefficiency of the patent system discussed in this Comment. Patents are a legal scarcity imposed on opportunities to exploit and improve on the status quo. This is comparable to granting usufructuary rights to beneficial users of water. But we grant the scarcity *ex ante*, before we know the uses of the patent. Thus, under the status quo, we allow for the possibility that the patent will remain unused and unexploited. Such a framework provides overbroad and overzealous protection of patent rights, which results in decreased incentives to develop follow-on products and inflated incentives for the patentholder.⁷²

III. THE BENEFITS OF MODULATING PATENT STRENGTH

A. *The Economic Rationale*

Patents, unlike water rights, are not perpetual because utility patent protection lasts only twenty years from the application date.⁷³ Admittedly, this blunts the impact of the ineffective use or underutilization of patents because the problem resolves itself when the patents expire. However, inefficiencies still remain and thus modulating the patent right can lead to significant increases in efficiency. Angus Chu has attempted to measure the aggregate economic effect of blocking patents—specifically those that claim subject matter that follow-on innovators need permission (by licensing or paying a royalty) to use.⁷⁴ Chu developed an econometrics model of blocking patents, drawing on macroeconomic parameter values developed previously in the empirical literature.⁷⁵ He estimates that lessening the blocking effect of patents would result in a large increase in the share of GDP that research and development occupies, potentially even doubling its share as compared to the baseline.⁷⁶

Varying patent strength would not eliminate blocking patents altogether, but understanding the economic effects of blocking patents can help explain the benefits of allowing for certain kinds of weaker patents. Let us walk through two scenarios.

⁷² See Scotchmer, *supra* note 58, at 32-34 (describing the disproportionate incentives that a system of broad patent protection creates).

⁷³ See 35 U.S.C. § 154(a)(2) (2012) (limiting utility patent protection to twenty years from the applicable date).

⁷⁴ See generally Angus C. Chu, *Effects of Blocking Patents on R&D: A Quantitative DGE Analysis*, 14 J. ECON. GROWTH 55 (2009).

⁷⁵ *Id.* at 67-71.

⁷⁶ *Id.* at 70.

- *Scenario A*: A patent lies unused and unexploited by the patent owner. Its only function is to extract payments from subsequent innovators who need to use that first-generation patent. It serves a purely blocking function. Others who seek to use the patent, the follow-on inventors, cannot use it without permission. Note that this type of patent is what the beneficial-use requirement in prior appropriation water law seeks to prevent: waste of a scarce resource when the owner of that resource does not use it in a socially beneficial manner.
- *Scenario B*: The same first-generation patent from Scenario A is used actively by the patent owner, who is approached by other innovators seeking to license the patent. The patent still serves a blocking function in the sense that others have to pay to use it.

Under the status quo, the patent owner in either scenario has discretion to decide whether to license the patent. Furthermore, courts have the discretion to grant permanent injunctions against patent infringers, effectively serving as a deterrent to those who would seek to infringe without permission.⁷⁷ Admittedly, the standard for granting the injunction changed after *eBay, Inc. v. MercExchange, LLC*.⁷⁸ Though no longer granted as a matter of due course in cases where infringement is found, permanent injunctions are still granted in the majority of cases that do not involve nonpracticing entities.⁷⁹ Thus, the threat of a permanent injunction, on top of penalties for infringement,⁸⁰ serves as a strong deterrent for those who would intentionally infringe a patent.

Nevertheless, it is better to decrease the patent owner's bargaining power in Scenario A (i.e., the unexploited blocking patent) as opposed to Scenario B. This is because, in Scenario B, the owner is utilizing the patent and accruing social benefits; *someone* is exploiting the patent prospect. But in Scenario A, the patent will not have a positive social impact unless some other party can use the patent for follow-on innovation. The patent owner certainly is not exploiting the patent prospect. By serving as purely a blocking patent, the

⁷⁷ 547 U.S. 388, 394 (2006).

⁷⁸ *See id.* (“[T]he decision whether to grant or deny injunctive relief rests within the equitable discretion of the district courts, and that such discretion must be exercised consistent with traditional principles of equity . . .”).

⁷⁹ *See* Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 IOWA L. REV. 1949, 1966 (2016) (noting that “district courts appear to have adopted a de facto rule against injunctive relief for [nonpracticing entities]” but have awarded relief to the “vast majority” of other patentees).

⁸⁰ *See* 35 U.S.C. § 284 (2012) (“Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer . . .”).

patent in Scenario A only makes it more difficult and expensive for follow-on inventors to use it.

The tables are stacked against follow-on inventors for intentional infringement of the patent because courts can grant equitable relief and damages in the event of infringement,⁸¹ and treble damages for intentional infringement.⁸² But if we were to modulate the patent right in Scenario A—by weakening the right to reduce the asymmetric bargaining power between patent owner and follow-on inventor—we could give the follow-on inventor a chance to *efficiently infringe* the patent. Moreover, there are upstream benefits—before infringement or litigation take place—to changing the relative bargaining positions of a would-be infringer and the patent owner. Considering the more limited expected returns, the patentee in Scenario A may prefer to pursue licensing negotiations with a would-be infringer rather than risk the high costs of litigation. By lowering ex ante costs for follow-on inventors to exploit the patent, social utility is increased because the follow-on inventor's exploitation of the patent creates a greater chance that inventive possibility—the artificially scarce resource captured by the patent—will inure to the public's benefit.

One important criticism that could be levied against this proposal is that there would be increased uncertainty inherent in the patent system, which in turn would increase transaction costs if the patentee negotiates with the follow-on inventor.⁸³ But this is not a situation where there is asymmetric information about the patent, since neither party can really know or test the strength of the patent right without entering into costly and time-consuming litigation. The patentee does not have more information about the private value of the patent that can be exploited in negotiations.

However, the problem of uncertainty can be remedied by setting bright-line rules instead of using sliding-scale approaches. Incontestability in trademark law is an example of a bright-line rule that changes the strength of the intellectual property right post-grant, allowing a trademark owner “to quiet title in the ownership of his mark” after five years of continuous use of the mark in commerce.⁸⁴ Incontestability has the effect of preventing anyone from challenging a registered mark as merely descriptive.⁸⁵ Though it does not have broader-ranging effects like precluding *any* validity challenge to a

⁸¹ *Id.*

⁸² *Id.*; see also *Finisar Corp. v. DirecTV Grp.*, 523 F.3d 1323, 1339 (Fed. Cir. 2008) (stating that greater damages may be awarded in cases of willful infringement when there is a showing of objective recklessness).

⁸³ See generally Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233 (1979).

⁸⁴ *Park 'N Fly, Inc. v. Dollar Park & Fly, Inc.*, 469 U.S. 189, 198 (1985); see also 15 U.S.C. § 1065 (2012) (setting forth the requirements for incontestability of a trademark owner's right to use a mark).

⁸⁵ See *Park 'N Fly*, 469 U.S. at 196 (“The language of the Lanham Act also refutes any conclusion that an incontestable mark may be challenged as merely descriptive.”).

registered mark,⁸⁶ incontestability is nonetheless a useful tool that rewards those who have continuously used the mark by foreclosing an avenue of attack, thus reducing potential litigation costs and improving the bargaining position of the mark holder.

Using sliding-scale or holistic approaches does not mean that attendant increases in transaction costs would necessarily outweigh the increased social utility of having more parties tap into the patent prospect. We have to be clear on the type of uncertainty discussed here. Uncertainty can lead to amplified misperception by the parties as to their own side's merits, and relatedly, the likelihood that any litigation will be resolved in their favor. But, as stated above, changing the strength of the patent right does not mean it will be easier or more difficult to infringe a patent. It only changes how parties choose to remedy or negotiate infringement, if at all. Therefore, neither party is any more likely to be more certain about the initial question of whether the patent was infringed. Making it easier to infringe patents by reducing punishments for infringement should actually make it *more* obvious that people have infringed or would want to infringe. Rather, uncertainty enters the equation here only as it relates to the remedies that can be awarded in a lawsuit, which informs the parties' positions in any prelitigation negotiations. Nevertheless, this kind of uncertainty is already inherent in the status quo. Damages calculations are already unpredictable because "[t]he methodology encompasses fantasy and flexibility."⁸⁷ Modulating patent strength would not so exacerbate the uncertainty already inherent in the system as to make it unworkable, but policymakers should be sensitive to anything that would render damages calculations even more opaque than they already are.

B. *The Philosophical Rationale*

Blackstone viewed property as "that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe."⁸⁸ Blackstone's ideas "helped inspire the Declaration of Independence, influenced the deliberations of the Constitutional Convention, articulated a sense of providence like the one that touched Abraham Lincoln, and instructed the children, grandchildren, great grandchildren and great-great grandchildren of his initial American

⁸⁶ See *Singh v. V. Patel & Sons, Inc.*, 851 F. Supp. 318, 320 (N.D. Ill. 1994) ("[I]ncontestability simply obviates any need for [the plaintiff] to prove the existence of secondary meaning for its mark to seek enforcement against a claimed infringer . . .").

⁸⁷ *Fromson v. W. Litho Plate & Supply Co.*, 853 F.2d 1568, 1575 (Fed. Cir. 1988), *overruled by* *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337 (Fed. Cir. 2004); see also 35 U.S.C. § 284 (2012).

⁸⁸ 2 WILLIAM BLACKSTONE, COMMENTARIES *2.

readers on the virtues of the English common law.”⁸⁹ But rooted in his notion of a property right is the idea that we seek to encourage property holding because it is the root of economic well-being; it is not the natural-rights idea that property should be respected for its own sake as an intrinsic good.⁹⁰

Blackstone writes that our ancestors, if provided merely a usufructuary right of property, would not seek to improve upon it in a way that would make life “more easy, commodious, and agreeable; as, habitations for shelter and safety, and raiment for warmth and decency.”⁹¹ But as mankind developed, the right evolved and ossified to enable the efficient distribution of land to create permanent agrarian communities and shift away from hunter-gatherer societies.⁹² Blackstone concludes that the “permanent right of property . . . was no *natural*, but merely a *civil*, right.”⁹³ Nonetheless, it seems inimical to the very core of the right to be able to adulterate it or meddle with it after its grant, even if doing so does not violate some fundamental natural order. Blackstone’s rationale for the existence of the property right rested in its constancy and predictability, which led to allocative efficiency improvements that augment overall social welfare.⁹⁴

Patents are a sort of weak-form “sole and despotic dominion”⁹⁵ over an idea for a given period of time. And patent owners have as much of a right to squander their patent prospects as farmers do to leave their farmland barren and unsown. It just so happens that farmers can freely squander their land until the metaphorical cows come home, whereas patentees are limited by the twenty-year term of the patent. Here, we purposefully tamper with constancy and predictability—part of the core of what it means to truly possess a right. So it does not feel entirely satisfactory to justify varying patent strength by pointing to the fact that patent rights are already restrained and time-limited. Such logic seems to rely on the somewhat superficial notion that tangible property is of a different ilk than intellectual property, and thus it is acceptable to subject intellectual property to different rules. The Constitution fuels this notion of the unique status of intellectual property with the Intellectual Property Clause, which grants Congress the power to “secur[e] for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries”

⁸⁹ Albert W. Alschuler, *Rediscovering Blackstone*, 145 U. PA. L. REV. 1, 15-16 (1996) (footnotes omitted).

⁹⁰ See Carol M. Rose, *The Moral Subject of Property*, 48 WM. & MARY L. REV. 1897, 1905 (2007) (examining moral justifications for property rights).

⁹¹ 2 BLACKSTONE, *supra* note 88, at *4.

⁹² See *id.* at *7 (stating that agriculture “introduced and established the idea of a more permanent property in the soil”).

⁹³ *Id.* at *11.

⁹⁴ See *id.* at *4 (“But when mankind increased in number, craft, and ambition, it became necessary to entertain conceptions of more permanent dominion . . .”).

⁹⁵ *Id.* at *2.

in order to “promote the Progress of Science and useful Arts.”⁹⁶ Nowhere else is the Constitution so explicit about the utilitarian underpinnings of property law than in the Intellectual Property Clause.

Nevertheless, while it might seem wrong or feel unfair to pull the rug out from under the patentee if the patentee squanders the patent right, doing so is not in tension with the American understanding of property or intellectual property rights as utility-maximizing regimes. Both intellectual property and tangible property rights exist for the betterment of the public good. Neither is an unqualified or unlimited right. And as illustrated by the discussion of prior appropriation water rights, the notion that the strength or scope of property rights can change without one’s consent, owing to mechanisms outside of one’s control, is not offensive to the American tradition either; appropriators must continuously use water for a beneficial purpose, or they lose it.⁹⁷

IV. PROXIES FOR THE BENEFICIAL USE OF PATENTS

In this Part, I delineate two observable indicators of whether a patent owner is exploiting the patent prospect in a beneficial manner. Since it is infeasible because of astronomical administrative costs to examine each and every patent to determine whether it is being exploited in a societally beneficial manner, we must find easily measurable alternatives to doing so. The ultimate goal is to find good proxies for whether the patent owner is putting the patent to a beneficial use.

One indicator of productive exploitation is determining if the patent owner is engaging in bona fide commercial use of the patent. This makes intuitive sense. Use in commerce is indicative of value that can be captured by consumers. The second indicator is a fee payment system where patent owners pay to keep their patents at full strength. If the fee is not paid, then the patent strength decreases. Admittedly, this indicator is not as robust as the first; the owners of patents used purely to extract royalty or licensing payments from follow-on inventors could still pay the fee and keep their patents at full strength.

A. *Bona Fide Commercial Use*

Patent law could reward patented inventions used in commerce with stronger protection than those which are not. Trademark law already has a similar requirement.⁹⁸ And such a requirement would be very similar in substance to the beneficial-use requirement in water appropriation law, which necessitates

⁹⁶ U.S. CONST. art. I, § 8, cl. 8.

⁹⁷ See *supra* Part II.

⁹⁸ See 15 U.S.C. § 1127 (2012) (requiring a trademark have some “bona fide” use in commerce).

continuous use of appropriated water in order for the appropriator to preserve his or her rights.⁹⁹ If a patent remains unused, the government should encourage the redistribution of the scarce resource—the patent prospect—to those who would actually seek to harness it.

Sometimes it is obvious that a patent is being used in commerce, as when all the steps of a method patent are performed or when a patented invention is marketed or sold to consumers. It would make sense to include within the definition of bona fide commercial use all the behaviors that give rise to patent infringement: making, using, offering to sell, or selling patented inventions in the United States or importing patented inventions into the United States.¹⁰⁰ Including these behaviors in the definition of commercial use would mean that the patentee could undertake to use the patent in all the ways that an infringer could infringe on a patent.

But what of licensed patents? Does it make sense to include a licensed patent within the definition of “used in commerce”? I believe that the answer is no; licensed uses should not count as commercial uses. Licenses vary in degree of exclusivity, and there are relatively few limitations on how to structure a patent license because they are contractual relationships governed mostly by state law.¹⁰¹ But licenses tell us very little about whether the patent is used by the patent owner in a beneficial manner. They might be indicators of whether entities other than the patent owner are exploiting the patent right. But nonetheless, the patent right still belongs to the patent owner even if the patent is licensed out, and the owner has full discretion to contractually prohibit certain ways in which the patent prospect can be exploited. For instance, field-of-use restrictions can be placed on a licensee’s use of a patent, “rigorously limiting the scope of the license in order to narrow it to only the field intended.”¹⁰² Take the example of a patented chemical compound originally used as a lubricant for agricultural or farming purposes. The patent owner might use a field-of-use restriction to bind subsequent follow-on inventors from exploring potential uses of the compound to treat baldness,¹⁰³ thus effectively precluding anyone else from exploiting the patent prospect in other productive ways. So if we count patent licenses as uses in commerce, patent owners can readily exploit this by granting extremely restrictive

⁹⁹ See *supra* Part II.

¹⁰⁰ See 35 U.S.C. § 271(a) (2012) (delineating the actions that can give rise to a claim of patent infringement).

¹⁰¹ But see *Kimble v. Marvel Entm’t, LLC*, 135 S. Ct. 2401, 2407-08 (2015) (upholding a blanket prohibition on patent licenses for payment of royalties past the expiration of the patent term).

¹⁰² 2 ROGER M. MILGRIM & ERIC E. BENSON, *MILGRIM ON LICENSING* § 15.12 (2011).

¹⁰³ This hypothetical is based on a real case. *Bag Balm*, a chemical lubricant used on cow udders, was a patented compound. *In re Cortright*, 165 F.3d 1353, 1355 (Fed. Cir. 1999). But then a follow-on inventor applied for a method patent proposing to use *Bag Balm* as a treatment for baldness. *Id.*

licenses to demonstrate commercial use. With a stronger patent right in hand, the patent owner now would have a stronger bargaining position against all other follow-on inventors. Furthermore, there are reasons to think that the number of patents licensed for royalties is not actually that large.¹⁰⁴ So the impact of excluding licensing from the definition of bona fide commercial use may not have much of an impact on the market as a whole.

Another potentially confounding consideration is that since patent rights are granted relatively early in the inventive process, before commercial exploitation might even be feasible,¹⁰⁵ patent owners may not be ready to use their patent in commerce when it is first granted. If patentees cannot immediately use the patent in commerce, they will be concerned about other parties being able to cheaply and easily obtain access to the protected subject matter of the patent. This in turn would likely shift patenting to later in the inventive process and that would likely make patents much more of a reward for prior investments than a prospect for future development. It would be a clear statement by policymakers that they prefer the reward theory to the prospect theory of patents.

If something is to be done about this concern, however, then perhaps we should account for the patentee's intent to use the patent in commerce. Although trademarks must be used in commerce in order to be valid,¹⁰⁶ federal trademark law provides that applicants can file an intent-to-use application for a trademark; a successful applicant must show actual use within six months of the trademark grant.¹⁰⁷ There could be a similar mechanism in patent law wherein an intent to use the patent in commerce, registered with the USPTO, would be sufficient to provide the patentee the protections of actual use in commerce so long as the patentee takes reasonable steps to prepare the patent prospect for commercial exploitation.

B. Annual Patent Fees

There has been some interest in the economics literature for weeding out poor-quality and low-private-value patents by instituting higher patent maintenance fees¹⁰⁸ because payment of maintenance fees can be "indicative of

¹⁰⁴ See Lemley, *supra* note 4, at 1503-06 (positing that the number of licensed patents is not large because patents are concentrated in areas in which royalty-licensing agreements are uncommon, patentees who would want to license their patents for royalties have a small portion of the patents, and many inventions are patented that will never be used or be subject to a licensing agreement).

¹⁰⁵ See *supra* text accompanying note 29.

¹⁰⁶ 15 U.S.C. § 1127 (2012).

¹⁰⁷ *Id.* §§ 1051(b)(1), (d)(1).

¹⁰⁸ See generally Francesca Cornelli & Mark Schankerman, *Patent Renewals and R&D Incentives*, 30 RAND J. ECON. 197 (1999) (describing the effect of patents on R&D efforts and demonstrating that differentiating patent lives when firms have different R&D productivities can improve social

the long term value of the patent.”¹⁰⁹ Maintenance fees must be paid at three points in time: three-and-a-half years, seven-and-a-half years, and then eleven-and-a-half years after issuance of the patent.¹¹⁰ The thinking is that patent owners who do not believe that their patents are worth much in the long run would not pay the fee because the private value of their patent is worth less than the fee itself. But to try and test whether a patent owner is engaging in beneficial uses of the patent, the government could mandate that some kind of registration fee be paid each year, on top of the maintenance fees. If the fee is not paid then the patent would not lapse, but the patent strength would decrease.

Though payment of fees might tell us something about the private value of patents, this is not a good proxy because it fails to differentiate between patent owners who are actually exploiting the prospect from those who are using the patent purely to extract money from follow-on inventors. The private value of patents can be increased by societally unproductive behaviors too. Trying to differentiate amongst productive and unproductive patent owners in this way would be relatively hopeless.

CONCLUSION

Modulating patent strength may address many of the inefficiency problems endemic in patent law. Blocking patents present a special concern since they permit a patent owner to take advantage of the patent monopoly without actually exploiting the patented invention for the betterment of society. By adjusting patent strength to weaken patents solely used by their owners to extract licensing revenues or royalties from follow-on inventors, society could tailor patent law to better fit its original Schumpeterian objectives of granting a limited monopoly to achieve greater social welfare outcomes.

A beneficial-use requirement for patents would have an impact on stemming the inefficiencies from blocking patents, though it certainly would not completely resolve the issue. As discussed above, there are viable ways to easily observe and measure whether patent owners are putting their patents

welfare); Gaétan de Rassenfosse & Bruno van Pottelsberghe de la Potterie, *The Role of Fees in Patent Systems: Theory and Evidence*, 27 J. ECON. SURVEYS 696 (2013) (discussing how patent fees could be used as a policy tool); Jean O. Lanjouw et al., *How to Count Patents and Value Intellectual Property: The Uses of Patent Renewal and Application Data*, 46 J. INDUS. ECON. 405 (1998) (discussing patent counts as measures of innovation); Suzanne Scotchmer, *On the Optimality of the Patent Renewal System*, 30 RAND J. ECON. 181 (1999) (looking particularly at the economics of patent renewal systems).

¹⁰⁹ Moore, *supra* note 6, at 1550.

¹¹⁰ 37 C.F.R. § 1.20(e)–(g) (2015). But this is not a hard-and-fast rule. If the failure to pay the fee was unintentional or unavoidable, and a petition was filed and the fee was paid within a year and a half after the deadline (including a six-month grace period for fee payment after the deadline), then the patent can be reinstated. *Id.* § 1.378.

to a beneficial use. One such proxy is a requirement of bona fide use of the patent in commerce in order for the patent to receive full legal protection. Another is requiring additional fees to keep patents at full strength.

Further study is needed to weigh the pros and cons of the various policy levers that can be pulled to maximize the benefits of “efficient” patent infringement while minimizing any destabilizing effects that weakening the patent right may have. Nonetheless, this Comment has proposed a new way of thinking about patent infringement. Infringement does not have to be cast in a purely negative light as trampling on property rights. Rather, we can harness infringement as a tool to appropriately tailor the strength of the patent right to better match the value of a patent.