

THIRD-PARTY INTERESTS AND THE PROPERTY LAW MISFIT IN PATENT LAW

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Courts and scholars have long parsed the characteristics of patent grants and likened them, alternately, to real or personal property law, monopolies, public franchises and other regulatory grants, or a hybrid of these. The characterizations matter, because they can determine how patents are treated for the purposes of administrative review, limitations, and remedies, inter alia. And these varied treatments in turn affect incentives to innovate. Patents are often likened to real property in an effort to maximize rights and allow inventors to internalize all of the benefits from their activities. And courts often turn first to real property analogies when faced with novel issues in patent law; yet they do not always end there. Sometimes, patents are public rights. Sometimes, they are protected by liability rules rather than property rules. And sometimes, a U.S. patent cannot stop the resale or importation of goods it covers. Patents are very much like real property, it seems, except for when they are not.

This Article argues that these decisions are justified by a number of misfits between patent rights and traditional property rights and identifies and explores a previously understudied misfit that results from a lack of possession on the part of the patent holder and third-party property rights on the part of potential infringers. One well-studied misfit is that patent law imposes steeper information cost on third parties than is typically thought to attend private property. There are a number of other

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misfits, however, that have been under-examined. For example, patent law presumes a robust public domain—that is, a vast swath of “unowned” ideas, whereas traditional real and personal property entitlements do not expire and render goods or land available to all. Another understudied misfit occurs because patents affect third parties’ freedom to use their own property over which they exercise dominion. Traditional forms of property, in contrast, presume some level of dominion by owners.

This Article identifies and describes the set of patent law misfits and shows how, taken together, they explain the Court’s deviations from a property law framework. More than simply explanatory or predictive, however, this insight has normative weight. The misfit is real, and in contexts where it is most relevant, a strict application of property rules will work against the values embedded in the patent system. For this reason, we need a clear account of when and why property rights may be a starting point—but ought not be an ending point—for doctrinal evolution in patent law.

TABLE OF CONTENTS

INTRODUCTION	1861
I. PATENTS AND THE PROPERTY LAW NARRATIVE	1867
A. <i>Patents’ Purposes and the Exclusive Rights Model</i>	1868
B. <i>The Grant and Scope of Patents as Property Boundaries</i>	1873
C. <i>Patents as Facilitators of Coordination and Transfer (with Limitations)</i>	1878
D. <i>Property and Liability Rules in Patent Enforcement and Remedies</i>	1882
II. REJECTIONS AND LIMITATIONS OF PROPERTY LAW FRAMING FOR PATENTS....	1882
A. <i>Remedies</i>	1883
B. <i>Patent Exhaustion as Limitation on Coordination and Transfer</i>	1890
C. <i>Post-Grant Review of Scope and Validity in Oil States</i>	1894
III. THE PATENT LAW MISFIT	1900
A. <i>Notice Failure, Boundary Ambiguity, and the Importance of the Public Domain</i>	1901
B. <i>Dominion and the Divide Between Protected Things and Infringing Things</i>	1905
IV. ANALYZING THE MISFIT.....	1911
A. <i>Courts Deviate from Property Rules When the Misfit Is Greatest</i>	1913

B. <i>The Limits of the Misfit</i>	1917
CONCLUSION.....	1918

INTRODUCTION

Courts and scholars have alternately likened patent grants to private property,¹ monopolies,² public franchises,³ water rights,⁴ and other regulatory grants.⁵ These characterizations affect the scope and

¹ See, e.g., *Consol. Fruit-Jar Co. v. Wright*, 94 U.S. 92, 96 (1876) (“A patent for an invention is as much property as a patent for land. The right rests on the same foundation, and is surrounded and protected by the same sanctions.”); Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742 (2007) (suggesting that patents are “property-like” and that a property regime is well-adapted to solve the information cost problems presented by patents); ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 33–41 (2011); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 296–330 (1988); Adam Mossoff, *Exclusion and Exclusive Use in Patent Law*, 22 HARV. J.L. & TECH. 321, 322 (2009) (“Patents are property.”); Adam Mossoff, *What Is Property? Putting the Pieces Back Together*, 45 ARIZ. L. REV. 371, 372 (2003) (arguing that an integrated theory of property best describes the evolution of some intellectual property doctrines and suggests how those doctrines ought to function); Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1539 (1993) (arguing that a Lockean and property-based theory of copyright, interpreted and applied correctly would—contrary to the arguments of many proponents of the property view of intellectual property rights—“give support to the general population and to the population of creative users who need to employ others’ work”).

² *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014) (“Congress has enacted patent laws rewarding inventors with a limited monopoly.”).

³ *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1379 (2018); see also *Seymour v. Osborne*, 78 U.S. 516, 533 (1870) (“Letters patent are not to be regarded as monopolies, created by the executive authority at the expense and to the prejudice of all the community except the persons therein named as patentees, but as public franchises granted to the inventors of new and useful improvements . . .”).

⁴ See, e.g., Eric R. Claeys, *Intellectual Usufructs: Trade Secrets, Hot News, and the Usufructuary Paradigm at Common Law*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW* (Shyam Balganesh ed., Cambridge U. Press 2013) (describing some types of intellectual property as usufructuary property rights, albeit not patents).

⁵ See, e.g., Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1073 (2005) (“Intellectual property is obviously government regulation in the classic neutral sense of that term . . .”); Mark A. Lemley, *Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1330 (2015) (“IP rights are a form of government regulation of the free market designed to serve a useful social end—encouraging innovation and creation.”); Shubha Ghosh, *Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred*, 19 BERKELEY TECH. L.J. 1315, 1322–25 (2004); Ted M. Sichelman, *Purging Patent Law of “Private Law” Remedies*, 92 TEX.

limitations of patent rights. Advocates have used a private property analogy to argue for maximal patent rights that allow inventors to internalize all of the benefits of their activities.⁶ And courts often turn first to real property analogies when faced with novel issues in patent law; yet they do not always end there. In fact, the Supreme Court has deliberately ruled against variations of the patents-as-private-property arguments in a number of recent cases. Sometimes, the Court finds, patents are public rights.⁷ Sometimes, they are protected by liability rules rather than property rules.⁸ And sometimes, a U.S. patent cannot stop the resale or importation of goods it covers.⁹ Patents are very much like real property, it seems, except for when they are not. How do we know when a property analogy is appropriate and when it is not? This Article describes an underexplored set of misfits between patents and property and shows how these misfits lead the Court to seek limiting principles for patents in certain contexts.¹⁰ In particular, this Article suggests that the divide between the inventor's ownership rights in a patented idea and third-party property interests in—and dominion over—potentially infringing goods and materials undermines patent law's private property analogy. As a result, when third-party property interests are strongest, courts are most likely to deviate from the maximalist version of a private property rights understanding of patents.

L. REV. 517 (2014) (arguing for damages that optimize innovation incentives rather than traditional compensatory damages).

⁶ See Lemley, *Property, Intellectual Property, and Free Riding*, *supra* note 5, at 1046 (“[T]he role of property theory is an important one, both because it provides intellectual heft to justify the expansion and because it offers courts an attractive label—‘free rider’—that they can use both to identify undesirable conduct and to justify its suppression.”).

⁷ *Oil States*, 138 S. Ct. at 1373.

⁸ *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006).

⁹ *Impression Prods., Inc. v. Lexmark Int’l, Inc.*, 137 S. Ct. 1523 (2017).

¹⁰ Though many property law analogies might be applicable to patent law, there is a rights-maximization strain of property law theory that is often applied in patent law arguments. I take these arguments on their own terms and show their misfit to patent law. This project explores courts' dismissals of property rights analogies *as presented* by advocates, amici, and scholars. There are numerous property law theories that might *also* be imported and provide some nuance to the contours of patent law, and when courts dismiss the private property analogy as argued, these other theories often inform their holdings. This project focuses on predicting and justifying the decision to dismiss the analogy as it is presented. See *infra* Section II.A.

The Supreme Court most recently confronted this classification question in *Oil States Energy Services v. Greene's Energy Group*, holding that for the purposes of post-grant administrative review, patent rights had the characteristics of public franchises rather than private property.¹¹ It followed that the validity of a granted patent may be determined by an administrative adjudication—not exclusively by an Article III court, as would be the case if patents were considered private property in that context. In its briefing stage, the case attracted a number of amici arguing that any resolution that failed to uphold patents as private property rights in all contexts would go against the tide of history and result in ruination of the patent system.¹² In 2013, then-Chief Judge of the United States Court of Appeals for the Federal Circuit—the court with exclusive jurisdiction over patent appeals—suggested that administrative judges reviewing and potentially invalidating granted patents were “acting as death squads, killing property rights.”¹³ The Court did not heed the warning, instead upholding post-grant administrative review as constitutional. The government granted patent rights, the Court reasoned, and so was within its right to set up a mechanism for reassessing that grant, much like is done with public franchises.¹⁴ The opinion came with quite a caveat—that in other contexts, such as takings, patents may still be regarded as private property rights.¹⁵ This leaves open the question of how to determine whether a particular context merits private property treatment or another approach.

¹¹ *Oil States*, 138 S. Ct. at 1373.

¹² See, e.g., Brief of Amicus Curiae Eagle Forum Education & Legal Defense Fund in Support of Petitioner at 13, *Oil States*, 138 S. Ct. 1365 (No. 16-712), 2017 WL 3773874, at *13 (citing Phyllis Schlafly and Ayn Rand’s support for strong, private property rights in patents and declaring that “[n]ot only has this Court never accepted the notion that patent rights are public rights, but this Court has repeatedly implied the opposite”).

¹³ In 2013, then-Chief Judge of the United States Court of Appeals for the Federal Circuit suggested that agency judges reviewing and potentially invalidating granted patents were “acting as death squads, killing property rights.” Tony Dutra, *Rader Regrets CLS Bank Impasse, Comments on Latest Patent Reform Bill*, BLOOMBERG (Oct. 29, 2013) [<https://perma.cc/MUY6-9UCR>]. An amicus brief in *Oil States* echoed this language and suggested that post-grant administrative review results in “near-total annihilation of property rights.” Brief of Amici Curiae U.S. Inventor, Inc. & 31 Other Grass Roots Inventor Orgs. in Support of Petitioner, *supra* note 12, at 3.

¹⁴ *Oil States*, 138 S. Ct. at 1373.

¹⁵ *Id.*

The *Oil States* holding was no isolated occurrence. A strain of argument casting patents as private property rights has been promoted—and lost—at the Supreme Court a number of times in recent years.¹⁶ From decisions about permanent injunctions to the first sale doctrine, the Justices, at least, seem far from convinced that a private property rights analogy is the best prism to resolve complicated cases about the scope of patent entitlements. In 2006, the Court decided *eBay Inc. v. MercExchange, LLC*¹⁷ and was exhorted to hold that patents—as exclusive property rights—could only be enforced through the issuance of permanent injunctions. It did not so hold, and the case is generally understood as encouraging district courts to deny injunctive relief more frequently. Then, in 2008 and 2017, the Court issued rulings on the doctrine of exhaustion that narrowed patent holders' abilities to craft post-sale restrictions on their goods through patent enforcement actions, whether through use restrictions or when goods are first sold abroad.¹⁸

What explains these deviations from the proffered private property law framework? The answer—as recent Supreme Court decisions indicate—is in the context of the rights assertion. This Article provides a clear account of when and why the private property rights analogy¹⁹ fails to explain court decisions on patent law. A review of patent doctrine shows that the property analogy indeed has strong explanatory power in some contexts—particularly when boundaries are clear, information costs are low, and the public interest is best served by rights-holder autonomy. Earlier scholarship has explored the ways that patents do not always fit these requirements: boundaries are not always clear,²⁰ information costs are not always low,²¹ and sometimes rights-holder autonomy leads to low levels of access without spurring great innovation.²² However, there are other, underexplored fundamental

¹⁶ See discussion *infra* Part III.

¹⁷ *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 390 (2006).

¹⁸ *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617 (2008) (applying exhaustion to nullify restrictive licenses accompanying a sale); *Impression Prods., Inc. v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523 (2017) (applying exhaustion to authorized sales abroad).

¹⁹ As used in patent law. See *supra* note 10.

²⁰ See *infra* notes 182–189 and accompanying text.

²¹ See *infra* notes 182–189 and accompanying text.

²² See, e.g., Rachel E. Sachs, *Prizing Insurance: Prescription Drug Insurance as Innovation Incentive*, 30 HARV. J.L. & TECH. 153 (2016) (discussing how distortions in the patent system lead to the underdevelopment of drugs and proposing insurance-based solutions).

misfits between patent law and a private property framework that exacerbate the boundary uncertainties and information cost problems of patents. These misfits become apparent through a closer examination of the in rem rights framework used to describe and justify exclusive rights like patents.

Rights in rem are rights “in a thing.” In the case of patents, that “thing” is information—and the patent balance depends on the inventor sharing her information with the public, even while enjoining others from making, using, or selling things that embody her invention. This means that, for patents, unlike for real or personal property, the thing in which rights are claimed is separate from the things that may ultimately infringe the patent.²³ This separation between protected and infringing thing is important because it means that an inventor will often not have possession of infringing goods. She exercises no dominion over infringing embodiments of her idea, the protection of which is entirely at the mercy of legal enforcement rather than any exercises in defense of property. Instead, a third party likely has possessory interests in the very materials used to infringe. The patent only ensures that an inventor had “possession” of the idea for the invention at the time of filing,²⁴ whereas infringing goods are made of property owned by third parties. This lack of possession partially explains the notice problems and increased information costs associated with patents as compared with other property entitlements.²⁵

This possession misfit is exacerbated by another important misfit between property rights and patent law that derives from granting in rem rights in intangible information which, once disclosed, is difficult to possess. Patent law contemplates—and through term limits, demands—

²³ See, e.g., Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 268 (1977) (“[T]he invention as claimed in the patent claims and the physical embodiment of the invention are two quite different things.”); Michael J. Madison, *Law as Design: Objects, Concepts, and Digital Things*, 56 CASE W. RES. L. REV. 381, 383 (2005) (“[T]here is the actual device that the inventor developed, and there is the legally distinct thing that the patentee owns, which the law knows as the patent claim.”).

²⁴ Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 126–27 (2006) (arguing that various patent doctrines are geared towards ensuring an inventor “possessed” the invention at the time of filing).

²⁵ Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 81 (1985) (linking the significance of possession in property law with notice and boundary clarity).

that there be a robust public domain. That is, patent law entails a vast amount of “unowned” knowledge by design. Private property law generally acts to resolve entitlement disputes among particular parties, but there is no expectation that in a large number of cases, a judge will pronounce the disputed property to be unowned by anyone and thus, available to all.²⁶ The literature discussing the public interest in access in patent law is consistent with this concern, but it fails to convey the magnitude of this difference between the frameworks. While information costs are frequently higher in patent law than in real property, the costs are even higher when taking into account that third parties must conduct costly patent searches even when the result is that the information is free for all to use, whether because it was never claimed in a patent or because the relevant patents have expired.²⁷ The central importance of unowned information and the public domain to patent law explains why courts are reticent to use property law framing to bolster patent rights in technological contexts characterized by high rates of invalidity. The notice and information costs to third parties are high enough in the patent context—when compounded with the cost of invalidating improvidently granted patents protecting information that ought not to be owned at all—that it is no wonder that courts find the property law framework does not resolve all open questions.

Understanding the specifics of these misfits helps to predict and explain when courts are more likely to move away from private property law in contextualizing patent rights. In addition to predictive power, there is normative weight to these observations as well. The misfit is real, and its effects are most pronounced when third-party interests weigh most heavily—particularly third-party property interests and third-party interests in a robust public domain. These interests are often unaccounted for in the traditional, private property framework as it has been presented in patent law. To be fair, there are many limiting principles that apply to private property rights. Sometimes, these limiting principles inform the Court’s decisions that appear to dismiss the arguments made in favor of a property rights framework. However,

²⁶ This assertion is certainly true with respect to personal property. In the case of real property, while there are many types of public lands, the likelihood that a particular parcel of land in dispute is held publicly rather than privately is not a primary factor in every trespass case; whereas for patent infringement suits, questions of scope and validity are ubiquitous and crucial.

²⁷ See, e.g., Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465 (2004).

determining how and when analogous property-law limitations should apply in patent law is not so simple. For this reason, a clear account of when and why property rights may be a starting point but ought not be an ending point for doctrinal evolution is valuable.

Part I describes patent law and the appeal of property law as an explanatory framework for the different contexts in which patents operate. Part II describes three types of cases in which courts have eschewed the strong version of property rights in resolving patent law issues. Part III explains the patent law misfit to private property law rights analogies. Part IV shows how the misfit explains the exemplary cases and responds to potential criticism.

I. PATENTS AND THE PROPERTY LAW NARRATIVE

Congress is empowered to grant patent protection to inventions in order to promote progress. Patents have been credited with bringing new methods of glassblowing to Florence, salt-making to England, and, since the founding of the United States, for encouraging the development and improvement of lightbulbs, airplanes, disposable diapers, the communications industry, and countless medicines and medical devices. But what is the nature of that right? To say that patent rights are property rights is in some sense not to say much at all.²⁸ Patents are a right to exclude, which, we are told, is the core of a property entitlement.²⁹ The more important question, then, is not what the nature of a patent right is, but whether patents—as one form of property entitlement—are defined or constrained by the characteristics of other property entitlements. However, there are many types of property rights with varied characteristics. Thus, property rights may be structured as real or personal, public or private, and tangible or intangible; these structures come with different limitations and serve different purposes in different contexts. Real property refers to rights in land, and includes many forms of ownership, entitlement, and limitation. Personal property refers to

²⁸ Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 291 (1988) (“[I]ntellectual property shares much of the origins and orientation of all forms of property.”).

²⁹ See, e.g., Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEB. L. REV. 730, 752 (1998) (“[T]he right to exclude is the sine qua non of property.”).

moveable goods which may be tangible, like cars, machinery, or clothing, or intangible, like stocks, pension funds, software, or data.³⁰ And while the Anglo-American legal tradition places great importance on these private property rights, there is also a tradition of recognizing public rights as well, often “in resources that are not easily turned into private property,” such as air and water.³¹

While property rights can take many forms, the private property rights-view of patents³² is increasingly used in scholarship and advocacy³³ to argue in favor of expansive patent rights and against limitations—even when there are corresponding limitations in private property law.³⁴ The first Section of this Part begins by exploring the appeal of a property rights model to achieve patent law purposes. In short, the exclusive, in rem nature of patent rights serves many of the same goals as private property rights, such as encouraging innovation through careful boundary-setting, providing for transfer, and ensuring certain forms of remedial relief upon a finding of infringement. The subsequent Sections describe how private property analogies have been applied to frame issues of patent grant and scope, coordination and transfer of goods, and remedies for infringement.

A. *Patents’ Purposes and the Exclusive Rights Model*

Property is an expansive term, and because this Article does not argue that property law is irrelevant to describing the role, value, and

³⁰ See, e.g., BRUCE A. ACKERMAN, *PRIVATE PROPERTY AND THE CONSTITUTION* 166–67 (1977) (discussing “legal property” such as intangible property and suggesting that the question when dealing with legal property “is not whether a ‘thing’ has been taken, but whether those who lose as a result of the redistribution of property bundles ought to be compensated by those who gain”).

³¹ Carol M. Rose, *A Dozen Propositions on Private Property, Public Rights, and the New Takings Legislation*, 53 WASH. & LEE L. REV. 265, 267 (1996) (critiquing the property rights movement’s expansive position on takings law).

³² The private property rights view of patents is part of the general proptertization of intellectual property, which includes the use of the term “intellectual property” to refer to patents, copyright, trademark, and trade secret law. See, e.g., Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L.J. 1, 8 n.8 (2004).

³³ See *supra* notes 12–13.

³⁴ See, e.g., Carrier, *supra* note 32, at 10 n.13 (2004) (discussing the “absolute rights” view of property that is at odds with the reality of property law enforcement).

limitations of patent rights, it makes sense to take a moment and explain the particular view of patents as private property that this Article challenges, even though the scope of this Article is a larger reassessment of when courts are likely to look beyond property analogies to resolve conflicts—and even if courts often ultimately settle on property-like limitations as that resolution. Arguments that patents are like private property generally center on real property analogies, although many reference the 1952 Patent Act’s declaration that “patents shall have the attributes of personal property,”³⁵ as well. Although the scope and limitations of real and personal property often differ, both are invoked in arguments that argue for stronger patent rights.³⁶ Thus, for example, Adam Mossoff argues for a property rights view of patents by noting that the statute provides patents with the characteristics of personal property before asserting that “it is beyond doubt that patents are property rights,”³⁷ and then arguing for a view of patents that is primarily expressed in real property analogy and rhetoric.³⁸ Simone Rose argues that patents are property, positing that “ownership of patents is no different than the ownership of any other property right,” but critiquing the statute for being amenable to other interpretations, as well.³⁹ In a 1990 essay, Judge Frank Easterbrook hails the Court’s turn away from referring to patents as monopolies and uses a real property comparison to explain that

³⁵ Patent Act of 1952, Pub. L. No. 82-593, 66 Stat. 792, 810 (codified as amended at 35 U.S.C. § 261 (2018)).

³⁶ Greg Reilly, *Congress’s Power to Define Patent Rights* 11 (May 6, 2019) (unpublished manuscript) (draft on file with author) (“[M]any seem to characterize patent rights as ‘property’ less to invoke a theoretical concept of property rights and more as shorthand for a collection of long-standing historical characteristics of patent rights that may have analogs in the traditional law of real property and are generally favorable to patent owners . . .”).

³⁷ Mossoff, *Exclusion and Exclusive Use in Patent Law*, *supra* note 1, at 326.

³⁸ Adam Mossoff, *The Trespass Fallacy in Patent Law*, 65 FLA. L. REV. 1687, 1692 (2013) (“Early American courts conceptualized patents in the same terms as common law property rights, and thus they relied on and employed concepts, doctrines, and rhetoric from real property in crafting the doctrines that now comprise the American patent system.”). Mossoff notes that the passage of the act was accompanied by some concern about the implications of determining that patents are personal property, rather than stating that patents have attributes of both personal and real property. Mossoff, *Exclusion and Exclusive Use in Patent Law*, *supra* note 1, at 343.

³⁹ Simone A. Rose, *Patent “Monopolyphobia”: A Means of Extinguishing the Fountainhead?*, 49 CASE W. RES. L. REV. 509, 515 (1999) (quoting Edmund W. Kitch, *Patents: Monopolies or Property Rights?*, 8 RES. L. & ECON. 31, 33 (1986)).

[p]atents give a right to exclude, just as the law of trespass does with real property. Intellectual property is intangible, but the right to exclude is no different in principle from General Motors' right to exclude Ford from using its assembly line, or an apple grower's right to its own crop.⁴⁰

Greg Dolin and Irina Manta argue that courts do consider patents to be property for takings purposes, and suggest that therefore, the legislative changes that strengthened post-issuance review of patents constitute a legislative taking; a recent case holding otherwise is now under appeal at the Court of Appeals for the Federal Circuit.⁴¹ For its part, the appellate court has found that infringement by the government is not a taking, though its language is consistent with a view of patents as property, writ large.⁴² This line of reasoning is amenable to rulings that patent laws are limited—whether those limitations require analogs in other areas of property law or not—but recent years have seen it as a way of recasting patents as constitutionally unlimited.⁴³

In the United States, patents are seen as drivers of innovation.⁴⁴ Patents serve this purpose by granting term-limited exclusive rights to

⁴⁰ Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108, 109 (1990).

⁴¹ Gregory Dolin & Irina D. Manta, *Taking Patents*, 73 WASH. & LEE L. REV. 719 (2016); *Christy, Inc. v. United States*, 141 Fed. Cl. 641, 649 (2019).

⁴² *Zoltek Corp. v. United States*, 442 F.3d 1345, 1351–53 (Fed. Cir. 2006), *vacated on other grounds*, 672 F.3d 1309, 1317–22 (Fed. Cir. 2012) (en banc portion), *relying on* *Schillinger v. United States*, 155 U.S. 163 (1894). The court explains that “[a]s the Supreme Court has clearly recognized when considering Fifth Amendment taking allegations, ‘property interests . . . are not created by the Constitution. Rather, they are created and their dimensions are defined by existing rules or understandings that stem from an independent source such as state law. . . . Here, the patent rights are a creature of federal law.’” *Zoltek*, 442 F.3d at 1352 (alteration in original) (internal citations omitted).

⁴³ *See supra* note 36.

⁴⁴ For example, the terms “patents” and “innovation” featured prominently in numerous State of the Union addresses over the past decade—although the word “patent” did not feature in either of President Trump’s addresses to date, the word “innovate” was mentioned in the 2019 State of the Union address in the context of defense. *See, e.g.*, Brian Fung, *Every Time Obama Has Said ‘Innovation’ in His State of the Union Speeches*, WASH. POST (Jan. 20, 2015, 9:45 AM), https://www.washingtonpost.com/news/the-switch/wp/2015/01/20/every-time-obama-has-said-innovation-in-his-state-of-the-union-speeches/?utm_term=.4519b214d195 [https://perma.cc/Q3ZJ-3D58]; Donald Trump, President of the United States, Remarks by President Trump in State of the Union Address (Feb. 5, 2019), <https://www.whitehouse.gov/briefings-statements/remarks->

make, use, sell, and import inventions. The information and invention at the heart of a patent is fundamentally nonrival and nonexcludable, presenting the potential for underproduction absent government intervention. Patent rights are one such intervention; they create exclusivity in knowledge, allowing rights holders to charge a premium price to recoup research and development costs and potentially much more.⁴⁵ Inventors and their sponsors are more likely to invest in developing promising technology when they will be able to rely on exclusive rights to prospective profits.⁴⁶

The general statement that patents are property derives from their nature as exclusive rights. It also has intuitive appeal for describing what and why patents are granted. According to the analogy, patents allow an inventor to “possess” a certain intellectual space, invest in it and reap awards commensurate to its value, while granting notice and disclosure to others through the signposts of claim language. Patent rights are unlike other “bundles” of property rights in that they consist solely of rights to exclude—and even that right is time-limited. The exclusive nature of patents, then, seemingly makes them perfect examples of property rights—rights held in rem.⁴⁷

Rights in rem are held by one entity and good against the world.⁴⁸ Literally rights in a thing, they do not focus on specific duties between

president-trump-state-union-address-2 [https://perma.cc/24PW-5AAQ]; see also Sapna Kumar, *Innovation Nationalism*, 51 CONN. L. REV. 205, 225–29 (2019) (showing that technological innovation has become a part of U.S. identity and arguing that the innovation incentive of patent law has only become a focal point of policy in the past fifty years or so). The empirical question of whether patents drive innovation—or whether they are the best means of driving innovation—remains unanswered. See, e.g., Lisa Larrimore Ouellette, *Patent Experimentalism*, 101 VA. L. REV. 65, 66, 75 (2015) (“[W]e lack answers to fundamental empirical questions in patent law[]” such as whether patents “provide a net innovation incentive.”).

⁴⁵ As Abraham Lincoln more eloquently put it, patents “add[] the fuel of *interest* to the *fire* of genius.” Abraham Lincoln, *Second Lecture on Discoveries and Inventions*, in 3 THE COLLECTED WORKS OF ABRAHAM LINCOLN 363 (Roy P. Basler ed., Rutgers Univ. Press 1953).

⁴⁶ Kitch, *supra* note 23, at 265–68.

⁴⁷ *Kaiser Aetna v. United States*, 444 U.S. 164, 179–80 (1979) (recognizing that “the ‘right to exclude’” is “universally held to be a fundamental element of the property right” (internal citations omitted)); *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1011 (1984) (“The right to exclude others is generally ‘one of the most essential sticks in the bundle of rights that are commonly characterized as property.’” (internal citations omitted)).

⁴⁸ Merrill, *supra* note 29, at 741–52 (arguing that the right to exclude is the most important of those bundled into property); DOUGLAS LAYCOCK, MODERN AMERICAN REMEDIES: CASES AND

named people, like in personam rights, but rather the relationship of the whole world of non-owners to the thing which is the subject of the entitlement.⁴⁹ Real property provides examples of the characteristics and advantages of exclusive rights. The framework of exclusive rights finds justification, *inter alia*, in utilitarian theory that allowing an owner to exclude others and reap the benefits of ownership will encourage her to invest in ways that will put land and goods to productive uses.⁵⁰ My right in a plot of land includes the ability to exclude all others from that land.⁵¹ Thus, for example, if I know I will be able to harvest its sweet fruit, I will undertake planting and caring for a plum tree on my property. In contrast, if I am not able to exclude others from my property, I have less incentive to invest, knowing that the fruits of my labor may be appropriated by anyone who chooses to harvest the plums.⁵² Conversely, exclusive rights require an owner to internalize the costs of exploitation of her property, so that land, for example, will not be used for wasteful purposes or over-used.⁵³ In patent law, as in real property, the

MATERIALS 843–44 (3d ed. Aspen Law & Bus. 2002) (explaining that rights in rem are literally rights in a thing, and contrast with in personam rights, which are rights held against a specific person or people).

⁴⁹ In Justinian's Institutes, personal and real actions are distinguished as disputes between people for specific duties owed and disputes that center on things. JUSTINIAN'S INSTITUTES § 4.4.6, at 127 (Peter Birks & Grant McLeod trans., 1987) (“[E]very action which takes an issue between parties to a trial before a judge or arbiter is either real or personal. A plaintiff may sue a defendant who is under an obligation to him, from contract or from wrongdoing. The personal actions lie for these claims. . . . Or else he may sue a defendant who is not under any kind of obligation to him but is someone with whom he is in dispute about a thing. Here the real actions lie.”).

⁵⁰ Carol M. Rose, *Canons of Property Talk, or, Blackstone's Anxiety*, 108 YALE L.J. 601, 606–07 (1998) (discussing Blackstone: “That, of course, is the great utilitarian claim for the exclusive character of property: Exclusive dominion is useful because it reduces conflicts and induces productive incentives.”).

⁵¹ See, e.g., 2 WILLIAM BLACKSTONE, COMMENTARIES *2 (describing property rights as rights a man exercises “in total exclusion of the right of any other individual”). This absolute statement has given way to more nuanced views—and was itself followed by elaboration and contextualization. See, e.g., Rose, *supra* note 50, at 606 (suggesting that Blackstone's view was itself more nuanced than it is often given credit for and then discussing utilitarian justifications for exclusionary rights).

⁵² See Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 355–58 (1967).

⁵³ See *id.* at 356 (“[The] concentration of benefits and costs on owners creates incentives to utilize resources more efficiently.”).

exclusionary right is seen as a way of encouraging efficient investments and reaping the information cost savings of bright line property rules.⁵⁴

Exclusion is the hallmark of property rights, and particularly real and personal property law, governing rights in land and other “things.” The metaphor of property is also appealing to those who find purchase in the labor theory of intellectual property. And, in contrast to other types of public rights, patents cover something that would not have existed but for the work of the inventor.⁵⁵ “The world,” in turn, benefits from the disclosure of new information that eventually joins the public domain of unowned ideas, free to all. In the interim, patent disclosures serve as notice to the public and other innovators of that which they are prohibited from doing, absent authorization.⁵⁶

B. *The Grant and Scope of Patents as Property Boundaries*

For patents, real property analogies are at their most intuitive when describing the process of granting patents and determining the appropriate scope of the right. The real property incentives to invest, discussed above in the example of plums, applies to investment in innovation as well. These investment incentives are evident in general utilitarian accounts of patent rights as well as the prospect theory of patents, introduced by Edmund Kitch, which suggests that patent grants, like the grant of mineral claims, allow an inventor to sketch the boundaries of her invention and manage subsequent investment, use, and research within those bounds.⁵⁷ The theory spells out how patents do not simply reward inventions that have already occurred at the time of their grant, but allow the inventor to reap rewards from post-invention

⁵⁴ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730–31 (2002).

⁵⁵ *See, e.g., United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 186 (1933) (“Thus a monopoly takes something from the people. An inventor deprives the public of nothing which it enjoyed before his discovery, but gives something of value to the community by adding to the sum of human knowledge.”).

⁵⁶ Thomas W. Merrill & Henry E. Smith, *What Happened to Property in Law and Economics?*, 111 *YALE L.J.* 357, 359, 385–88 (2001) (explaining that the in rem nature of property serves to put others on notice of the negative duties that go along with the property).

⁵⁷ Edmund Kitch presented a theory of patent law that suggests patents are prospect rights, like mineral claims, so that an inventor sketches out the boundaries of her claims and manages the subsequent investments, use, and research within those bounds. Kitch, *supra* note 23, at 275–76.

investment that fall within the patented claims.⁵⁸ Mark Lemley has suggested that prospect theory is “one of the most significant efforts to integrate intellectual property with property rights theory,”⁵⁹ while John Duffy has shown that, because patents are limited in duration, the race to patent envisioned by prospect theory also hastens the entry of patented ideas into the public domain, thus serving the public interest in access to information.⁶⁰

Boundaries are central to the goal of scaling patent rights to inventive contribution through the use of property-type rules of exclusion. By granting exclusive rights—rather than prizes or grants, for example—patents are intended to allow inventors to appropriate returns commensurate with the value of their inventions, thereby encouraging efficient levels of investment. Patent seekers publicly claim, then develop and sell their inventions—or license their rights to others who will—in order to profit. And potential profits are dependent on market demand and available substitutes rather than *ex ante* government valuation.⁶¹ Rather than a government entity determining the worth of different innovations, once a patent application has been examined and met the requirements of novelty, non-obviousness, and utility, the applicant is entitled to a grant.⁶² A “bad” invention (whether it has no appeal to consumers or must compete with superior products) will likely fail to attract investment or, even if it does, fail on the market; a “good” invention may stand to bring its inventor and any investors large profits throughout the patent term.⁶³

In order to ensure that rewards are properly calibrated to the worth of an invention, the scope of protection of patents is limited.

⁵⁸ *Id.*

⁵⁹ Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1045–46 (1997).

⁶⁰ John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 443–44 (2004).

⁶¹ Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1, 11–14 (1969).

⁶² See 35 U.S.C. § 101 (2018) (“Whoever 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.”).

⁶³ While this description is likely broadly correct, there are certainly other factors besides the quality of the inventive idea that greatly affect the success or failure of products on the market, such as financing, quality of the embodiment of the idea, marketing, and network effects, *inter alia*.

Theoretically, this limitation is keyed to what the applicant has actually invented—which is itself defined in reference to what was known in the art at the time the application was filed. The statute constrains patent scope by allowing grant only for applicants who demonstrate that their claimed invention is new, useful, and non-obvious when compared to the prior art.⁶⁴ These requirements can be explained by reference to the goals of the patent system. Allowing someone to patent something that was already known—or, in patent parlance, is not novel—would either create competing rights with another patent-holder who had previously been granted purportedly-exclusive rights or it would take knowledge out of the public domain. Granting a second, identical patent would replicate the nonrivalry problem that patent law attempts to solve. Allowing a patent to cover already-known-but-unpatented material would grant a right where it was unnecessary to achieve innovation and unnecessarily ties up knowledge that ought to be in the public domain.⁶⁵ The same logic applies to the requirement that an invention be non-obvious.⁶⁶ The Supreme Court has explained that “[b]oth the novelty and the nonobviousness requirements of federal patent law are grounded in the notion that concepts within the public grasp, or those so obvious that they readily could be, are the tools of creation available to all.”⁶⁷ The boundaries of patents are thus as important for what they leave out as for what they enclose.

Property boundaries do not only serve the interests of the right holder. The duties that come with in rem rights in real and personal property are accompanied by relatively low information costs for others who come into contact with the land or goods so held.⁶⁸ For example, I do not need to know who owns a parcel of land or in what form⁶⁹ in order

⁶⁴ See 35 U.S.C. §§ 101–103.

⁶⁵ Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1594 (2011).

⁶⁶ *Id.*

⁶⁷ *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 156 (1989).

⁶⁸ For example, Penner explains that third parties do not need to have a personal relationship with a property owner to know that their duty is not to trespass. This is “a simple, single duty, and very easy to comply with,” he argues, because third parties need only know that there is an owner, without needing to learn details or identity, shared, ownership, or succession. JAMES E. PENNER, *THE IDEA OF PROPERTY IN LAW* 27 (Clarendon Press Oxford 1997).

⁶⁹ For example: Is it a tenancy in common? Are there liens?

to avoid trespassing—I simply need to recognize that the land is governed by property rules and that absent consent or some relevant limiting principle, I may not enter.⁷⁰ Similarly, no member of the public needs to know precisely who owns a car that is parked by the road to know that she is not entitled to open the door and drive it away absent finding and obtaining consent from the owner.⁷¹ If the notice benefits to exclusionary rules appear obvious, that is the point. The existence of the car, together with the common knowledge that cars are a type of thing that is owned, tells passersby all they need to know about their own rights (and duties) respecting the car.⁷² This “common knowledge” that provides notice and allows people not to infringe on the exclusive rights of others is dependent on social understanding that the thing in question is likely to be subject to such rights as well as where the borders of the protected good or land lies. Much of this knowledge is intuitive and drawn from social context and the tangible nature of property.

Patent boundaries are as important to third party interests as for proper calibration of incentives to inventors. Consistent with other forms of property, patents and their boundaries serve a notice-giving function. They are publicly available and searchable with claims and disclosure that explain and delineate the scope of protection.⁷³ The disclosure adds to the store of public knowledge and allows others to build on what the inventor has discovered.⁷⁴ In addition, it gives notice to other innovators what is off limits. The various disclosure requirements in patent law seek to limit the scope of a patent to that which the patent enables others to make, but are also important because all that is not claimed is meant to be free for others to use. The Court acknowledged the importance of boundaries in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, explaining that the monopoly rights in a patent are “property right[s]; and like any property right, its boundaries should be clear. This clarity is essential to promote

⁷⁰ Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 660 (1998) (discussing intuitive understanding of property rights).

⁷¹ PENNER, *supra* note 68, at 25–28.

⁷² *Id.* at 84.

⁷³ ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 14 (5th ed. 2010).

⁷⁴ Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 541 (2009); *see also* Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621 (2010).

progress, because it enables efficient investment in innovation.”⁷⁵ This importance is to both the inventor and third parties, the Court clarifies: “[a] patent holder should know what he owns, and the public should know what he does not.”⁷⁶ Disclosure requirements for patent holders serve to reduce information costs to third parties, serving this notice function.⁷⁷

The U.S. Patent and Trademark Office (PTO) does make errors in deciding whether to grant patents and what scope they should have. This reflects time constraints, the difficulty of defining rights *ex ante* over information that is by definition new, and the *ex parte* nature of patent application. In new fields of technology, it can be very difficult to properly define and explain the scope of protection granted. The language used to describe the scope of an invention may not yet have agreed-upon meaning, and the person with the greatest understanding of the technology—the inventor—also has every incentive to get the broadest scope of protection possible. In addition, many—and likely most—patents issued are never the subject of licensing or litigation, which means that spending inordinate amounts of time trying to define the scope of an invention *ex ante* is inefficient.⁷⁸ Currently, for example, patent examiners spend an average of nineteen hours on each patent application from the time of filing until a final decision on patentability is made.⁷⁹ Moreover, there are institutional incentives for patent examiners to “skew[]” decisions towards granting patents.⁸⁰ As a result, though the

⁷⁵ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730–31 (2002).

⁷⁶ *Id.* at 731.

⁷⁷ Long, *supra* note 27, at 469 (“[P]atent applicants [must] exhaustively describe the attributes of their inventions in order to receive protection” in order to “lower information costs for observers who want to avoid infringing the patentee’s rights.”).

⁷⁸ Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1497 (2001) (arguing that “[b]ecause so few patents are ever asserted against a competitor, it is much cheaper for society to make detailed validity determinations in those few cases than to invest additional resources examining patents that will never be heard from again”). *But see* Michael D. Frakes & Melissa F. Wasserman, *Irrational Ignorance at the Patent Office*, 72 VAND. L. REV. 975 (2019) (arguing that further investment in patent examination would be worthwhile).

⁷⁹ Michael D. Frakes & Melissa F. Wasserman, *The Failed Promise of User Fees: Empirical Evidence from the U.S. Patent and Trademark Office*, 11 J. EMPIRICAL LEGAL STUD. 602 (2014).

⁸⁰ Greg Reilly, *Decoupling Patent Law*, 97 B.U. L. REV. 551, 560 (2017); *see also* Melissa F. Wasserman, *The Changing Guard of Patent Law: Chevron Deference for the PTO*, 54 WM. & MARY

patent examination process is by no means cursory, and issued patents are given a presumption of validity,⁸¹ it is also the case that patent infringement trials frequently include disputes over the scope of the patent claims and defenses asserting invalidity of asserted patents and claims.⁸² In 1981, Congress included provisions for post-grant challenges to patents on the basis of novelty and non-obviousness to be heard at the PTO.⁸³ More recently, these provisions were expanded in the America Invents Act of 2011.⁸⁴

C. *Patents as Facilitators of Coordination and Transfer (with Limitations)*

As described above, exclusive rights in patentable ideas can encourage investment, although there are concomitant interests in limiting the scope of a patent to what the inventor actually possessed and reducing notice costs to third parties. One way that inventors can reap the rewards from patenting is through sale or licensing of their protected ideas. Patents may also facilitate coordination that bridges the gap from invention to the market and allows market participants to coordinate with each other.⁸⁵ Just as the owner of real property may rent it to tenants or sell the property, or the owner of a car might lease or sell the vehicle, a

L. REV. 1959, 2014 (2013) (because the Patent and Trademark Office's role is to grant patents, there are "constant one-way demands to issue patents").

⁸¹ 35 U.S.C. § 282 (2018) ("A patent shall be presumed valid.").

⁸² Jean O. Lanjouw & Mark Schankerman, *Characteristics of Patent Litigation: A Window on Competition*, 32 RAND J. ECON. 129 (2001) (approximately one percent of issued patents are challenged as invalid in courts); John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998) (approximately half of all challenged patents are invalidated).

⁸³ Act of December 12, 1980 (Bayh-Dole Act), Pub. L. No. 96-517, § 302, 94 Stat. 3015, 3015 (codified as amended at 35 U.S.C. § 302 (2018)).

⁸⁴ Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified as amended at 35 U.S.C. §§ 311–329 (2018)). The America Invents Act includes processes for post-grant review of patents in the nine months following grant, for any reason, 35 U.S.C. § 324, along with an expanded inter partes review process any time after grant, for novelty and nonobviousness, *id.* § 311.

⁸⁵ Stephen Yelderman, *Coordination-Focused Patent Policy*, 96 B.U. L. REV. 1565, 1567 (2016) (explaining that more recent views of patent purposes include their ability to facilitate coordination among different entities).

patent holder may choose to license or sell her entitlement. Another manner of monetizing the entitlement is by selling goods embodying the invention—whether this means patented widgets or widgets made through a patented process, or by a patented machine. This would be analogous to selling fruit from an orchard or using one’s vehicle for a ride service. The first instances involve sales or leasing of the owned assets, whereas the second set involve sales of goods produced through use of the asset.

Because patented inventions need not—and cannot—be kept as trade secrets, inventors can approach investors or other entities to enter licensing deals knowing that disclosure won’t compromise their rights. This coordination value of patents was part of the argument for the inclusion of intellectual property rights in the WTO Agreement.⁸⁶ Developed countries argued that when companies were confident their technology would be protected in a developing country, they were more likely to manufacture high-tech goods in those countries and more likely to engage in technology transfer.⁸⁷ Thus, in small scale collaboration and through larger-scale legislative and treaty-based actions, patents have been used to increase and disseminate knowledge and encourage collaboration.

The potential for efficient transfer of property leads to another justification for exclusionary rules: lowered information costs for third parties who interact with the property or are in a relevant market.⁸⁸ A right in rem corresponds with duties for all others not to intermeddle with the property absent authorization.⁸⁹ These duties, because they are general and attach to the thing itself do not require any personal

⁸⁶ Peter Lee, *Transcending the Tacit Dimension: Patents, Relationships, and Organizational Integration in Technology Transfer*, 100 CALIF. L. REV. 1503 (2012).

⁸⁷ See, e.g., *id.*

⁸⁸ Smith, *supra* note 1, at 1746–47 (“Property rests on a foundation of simple rules like trespass that tell duty-holders to keep off. No direct reference need be made to information about either the duty-holder or the owner: if I am walking through a parking lot, I know not to drive off with others’ cars, and I do not need to know who the owners are, how virtuous (or not) they are, or whether they are actual people or corporations.”).

⁸⁹ RICHARD A. EPSTEIN, *BARGAINING WITH THE STATE* 14–15 (1993) (citing Wesley N. Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16 (1913), for the proposition that “the creation and recognition of a right or privilege in one person will impose correlative obligations on others”).

interaction with a right holder or even knowing who holds the right. This coordination is possible because of the protection patents allow for disclosed information, but also because patent rights may be licensed or sold. Under American law, patents are alienable; in particular, the law states that “patents shall have the attributes of personal property.”⁹⁰ This means that an inventor can license or sell her patent to those who may put it to a better use. The transfer may be recorded with the PTO.⁹¹

A utilitarian view suggests that clear entitlement rules allow those with the best information about the value of rights to negotiate for their use or avoid infringement.⁹² However, many go further and suggest that broad exclusionary rules also aid with alienation of property and resale markets. In rem rights and other property formalities can facilitate efficient exchanges by allowing market participants to contract for rights with an understanding of what they will receive and some certainty about its form and scope.⁹³ Because rights are held generally and against a large class of people, the transfer of title can transfer the right as to all the duty-holders at once. Thus, not only are the exclusive rights associated with property regimes helpful to observers who wish to avoid infringement of rights, they also reduce transaction costs for those who seek “to enter into negotiations with the property owner over it, and to build on it.”⁹⁴

One limitation on structuring the transfer of patent rights is the first sale doctrine, also known as patent exhaustion. The underlying premise

⁹⁰ 35 U.S.C. § 261 (2018).

⁹¹ *Id.*

⁹² Smith, *supra* note 1, at 1747–48 (“[I]f we are worried about creators, inventors, commercializers, and others not being able to appropriate the returns from their activities, we might respond to these positive externalities with subsidies or rights to those inputs. But although these more direct solutions are obviously superior on the benefit side—and they have certainly for this reason garnered a lot of support in the form of proposals for rewards and compulsory licensing—they also by their very directness are more costly than exclusive rights. The alternative to these tailored solutions is to devise rights that rely on simple on/off signals and that will allow rights-holders to reap the returns from their inputs without officials’ needing to value the uses to which the inputs are put—or even to know what those uses are.”).

⁹³ Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 *YALE L.J.* 1 (2000).

⁹⁴ Long, *supra* note 27, at 476. Long goes on to explain that there are also information costs associated with learning about the contours and substance of the right and a second order cost in deciding how much to invest in learning about the right before making a decision on how to proceed—costs that may be particularly high in the intellectual property context. *Id.* at 476–77.

is fairly simple—that once a particular, patented thing is the subject of an authorized sale, the patent holder’s rights are exhausted, and any future use or sale of that particular thing cannot be infringing.⁹⁵ This limitation applies to the second type of rights exploitation described above—namely, sales of goods that embody a patented idea. The exhaustion doctrine is a limitation on the rights granted by a U.S. patent, balancing patent holders’ contractual freedom to construct licenses with downstream users’ interests in their lawfully obtained property.⁹⁶ The expansion of patent exhaustion to foreign sales, discussed below, comes at the expense of U.S. patent holders who prefer the ability to control the first sale of patented goods within the United States. Those who have argued against exhaustion—whether in the domestic or international context—have often appealed to the patent holder’s freedom to structure contracts and licenses as she wishes, suggesting that this freedom will result in more price discrimination, allowing patent holders to reap a higher reward while also making goods available to more consumers.⁹⁷ This freedom is an extension of the dominion a patent holder should hold over that which she has created and staked out, according to this view. Furthermore, allowing such freedom may result in the most efficient allocation of the rights associated with the patent.

⁹⁵ John Duffy and Richard Hynes argue that the sale takes a patented good out of patent law’s domain, and that the doctrine of exhaustion merely recognizes this delineation of the domain in which patents operate as compared to that in which contract or property law do. John F. Duffy & Richard Hynes, *Statutory Domain and the Commercial Law of Intellectual Property*, 102 VA. L. REV. 1 (2016).

⁹⁶ Sarah R. Wasserman Rajec, *Free Trade in Patented Goods: International Exhaustion for Patents*, 29 BERKELEY TECH. L.J. 317 (2014).

⁹⁷ See Vincent Chiappetta, *Patent Exhaustion: What’s It Good For?*, 51 SANTA CLARA L. REV. 1087, 1118–22 (2011). In the international context, see, e.g., David A. Malueg & Marius Schwartz, *Parallel Imports, Demand Dispersion, and International Price Discrimination*, 37 J. INT’L ECON. 167, 171 (1994) (suggesting that an international exhaustion rule in patent law would cause patent holders either to raise prices abroad or to decline to sell in low-income markets). See also Pinelopi Koujianou Goldberg, *Intellectual Property Rights Protection in Developing Countries: The Case of Pharmaceuticals*, 8 J. EUR. ECON. ASS’N 326, 329–30 (2010) (arguing that pharmaceutical companies might not serve low-income countries or may raise prices there if there is parallel importing).

D. *Property and Liability Rules in Patent Enforcement and Remedies*

Remedies for patent infringement include compensatory damages for past infringement and injunctions against future infringement.⁹⁸ Because the core of the patent right is exclusion, injunctive relief is often also seen as a core means of remedying infringement—thereby vindicating a patent holder’s decision not to authorize an accused infringer’s behavior. However, like with other exclusive rights, courts may deny injunctions—and following the 2006 decision in *eBay*, denials have become more frequent. The reasoning and theoretical impact of remedial doctrines is discussed further, below. In this Section describing the contours of patent grants, remedies, and limitations, it is simply worth noting that injunctions are generally seen as a stronger remedy than money damages, providing rights protection through a property rule rather than a liability rule.⁹⁹

II. REJECTIONS AND LIMITATIONS OF PROPERTY LAW FRAMING FOR PATENTS

Property law analogies explain many decisions about patent grants, rules about the transfer of goods, and remedial rules. However, in a number of recent cases, the Supreme Court has rejected strict, real property-based solutions to patent disputes. In chronological order, recent examples are the Court’s rulings on the availability of permanent injunctions as remedies, its willingness to expand the exhaustion doctrine, and the affirmance of post-grant administrative review as constitutional. In each case, advocates for a rule driven by a strong property rights vision of patent rights argued that a deviation would have disastrous results for patent law. And in each case the Court ruled against the property rights view of patent law—at least in its strong form. These rulings are not entirely inconsistent with property rules—and to some extent can be explained by its internal exceptions and limitations. In

⁹⁸ There is no provision in the statute for restitutionary damages. For one suggestion of the desirability of unjust enrichment damages, see John M. Golden & Karen E. Sandrik, *A Restitution Perspective on Reasonable Royalties*, 36 REV. LITIG. 335 (2017).

⁹⁹ Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).

ruling against the property rights view, the Court consistently emphasized third party interests. This Part describes the contexts in which these cases were decided and shows how, in each, the Court found that the property rights version of patent law interpretation—as presented—was inadequate in accounting for third party interests.

A. Remedies

The property rights view of patents took its first major hit in the area of patent infringement remedies. In 2006, the Supreme Court issued its decision in *eBay*,¹⁰⁰ a case bringing the property rules versus liability rules debate to patent law.¹⁰¹ Property rights advocates¹⁰² as well as bio and pharmaceutical industry representatives¹⁰³ argued that infringement of the right to exclude granted by a patent can only be remedied through the grant of a permanent injunction.¹⁰⁴ This argument was based on a reading of a real property precedents, where denial of injunctive relief is rare,¹⁰⁵ and the suggestion that because the right to exclude is the only right

¹⁰⁰ *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006).

¹⁰¹ Calabresi & Melamed, *supra* note 99.

¹⁰² Peter S. Menell, *The Property Rights Movement's Embrace of Intellectual Property: True Love or Doomed Relationship?*, 34 *ECOLOGY L.Q.* 713, 716 (2007) (describing and critiquing the movement of property rights advocates into patent law, explaining that “[t]he *eBay* case and the property rights rhetoric surrounding it marked an important new front in the campaign to establish a strict and broad interpretation of property rights and their enforcement”).

¹⁰³ The industries arguing in favor of injunctive relief included the biopharmaceutical industry, some traditional industries, and non-practicing entities. Brief of Biotechnology Indus. Org. as Amici Curiae in Support of Respondent, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 639162; Brief of Amicus Curiae Pharm. Research & Mfg. of America in Support of Respondent, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 622122; Brief for Gen. Elec. Co., 3M Co., Procter & Gamble Co., E.I. Du Pont De Nemours & Co., & Johnson & Johnson as Amici Curiae Suggesting Affirmance, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 615158; Brief Amici Curiae of Martin Cooper, Raymond Damadian, Leroy Hood, Nathan Myhrvold, Robert Rines, Burt Rutan, James West, Fourteen Other Inv'rs, & Intellectual Ventures in Support of Respondent, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 639161.

¹⁰⁴ See, e.g., Brief of Various Law & Econ. Professors as Amici Curiae in Support of Respondent, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 639164.

¹⁰⁵ Menell, *supra* note 102, at 716; Henry E. Smith, *Property as the Law of Things*, 125 *HARV. L. REV.* 1691, 1713–15 (2012) (discussing how injunctions for continuing trespasses are presumed in property law, while noting that unclean hands or willfulness may yet negate a plaintiff's claim for injunction).

granted by a patent, enforcement of that exclusion through injunctive relief is even more important than in the case of property rights in land and the multiple rights included in that grant.¹⁰⁶ On the other side, representatives of the software and high tech industries,¹⁰⁷ scholars,¹⁰⁸ and public interest organizations¹⁰⁹ argued for an increased role for liability rules—leading to money damages rather than injunctions—in situations likely to otherwise result in holdup.¹¹⁰ The Court issued a unanimous opinion professing merely to reaffirm that patent law is bound by the same, traditional rules of equity as are other areas of law.¹¹¹ In reality, the two concurrences laid out different visions of when and whether a permanent injunction is an appropriate remedy for patent infringement, with the Kennedy concurrence drawing a map courts have used to deny permanent injunctions in favor of liability rules in some circumstances.¹¹² Since the Court issued its *eBay* opinion, courts are

¹⁰⁶ Smith, *supra* note 105.

¹⁰⁷ See, e.g., Brief of Am. Innovators' All. as Amicus Curiae in Support of Petitioners at 25–30, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 218967, at *25–30; Brief of Amicus Curiae Yahoo! Inc. in Support of Petitioner at 5–14, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 218988, at *5–14; Brief of Int'l Bus. Mach. Corp. as Amici Curiae in Support of Neither Party at 16–18, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 235006, at *16–18.

¹⁰⁸ See, e.g., Brief Amici Curiae of Fifty-two Intellectual Prop. Professors in Support of Petitioners at 7, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 1785363, at *7.

¹⁰⁹ See, e.g., Brief of Elec. Frontier Found., Pub. Patent Found., Am. Ass'n of Law Libraries, Am. Library Ass'n & Special Libraries Ass'n as Amici Curiae in Support of Petitioners, *eBay Inc.*, 547 U.S. 388 (No. 05-130), 2006 WL 235008.

¹¹⁰ See, e.g., Brief Amici Curiae of Fifty-two Intellectual Prop. Professors in Support of Petitioners, *supra* note 108, at 7; Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2015 (2007) (arguing that there is a high risk for complex inventions and that non-practicing entities bring a significant portion of infringement suits in industries with complex goods often covered by multiple patents).

¹¹¹ The opinion references the “traditional” nature of the four-factor test for equitable relief in nearly every paragraph of the five-page opinion and it figures in each of the concurrences twice. *eBay Inc.*, 547 U.S. 388. For a critique of the Court's claim that its opinion merely “upheld traditional principles” and an explanation of the case's impact in other areas of law, see Mark P. Gergen et al., *The Supreme Court's Accidental Revolution? The Test for Permanent Injunctions*, 112 COLUM. L. REV. 203 (2012).

¹¹² *eBay Inc.*, 547 U.S. at 394–95 (Roberts, C.J., concurring); *id.* at 395–97 (Kennedy, J., concurring); see FED. TRADE COMM'N, *THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION* 217 (2011) (showing that post-*eBay* “district courts have granted approximately 72%–77% of permanent injunction requests”); Christopher B. Seaman, *Ongoing Royalties in Patent Cases After eBay: An Empirical Assessment and Proposed Framework*, 23 TEX. INTELL. PROP. L.J. 203, 204 (2015) (“[A] substantial number of prevailing patentees have

likelier to deny permanent injunctions in specific contexts.¹¹³ These contexts, taken en masse, occur when the misfit between patent law and property rights is greatest. That is, the separation between the information protected by the patent and the infringing things that embody that information involve property-type interests of both the patent holder and third-party innovators. In the injunction context, the misfit is further exacerbated by the public interest in access to innovation that is an integral part of the patent balance.¹¹⁴

The Court's decision in *eBay* reflects years of increasing concern about two emerging problems—"suspect patents and suspect entities"¹¹⁵—that hindered innovation by third parties when coupled with the widespread availability of permanent injunctions as a remedy for infringement. Improvidently granted and overbroad patents can lead to potential holdup problems, particularly in the information technology and software fields,¹¹⁶ as can patents for small components of complex,

been denied the ability to exclude future acts of infringement through the court's contempt power for the first time."). *But see* Ryan T. Holte & Christopher B. Seaman, *Patent Injunctions on Appeal: An Empirical Study of the Federal Circuit's Application of eBay*, 92 WASH. L. REV. 145 (2017) (noting that the Federal Circuit is more likely to reverse a district court's decision to deny an injunction than a decision to enter an injunction, providing some limitation on the effects of *eBay* on injunction denial).

¹¹³ See Holte & Seaman, *supra* note 112.

¹¹⁴ Sarah R. Wasserman Rajec, *Tailoring Remedies to Spur Innovation*, 61 AM. U. L. REV. 733, 750–51 (2012) (arguing that the public interest prong of the four-factor test for injunctions best captures the public interest concerns in access that are evident in the Justice Kennedy's *eBay* concurrence).

¹¹⁵ *Id.* at 743.

¹¹⁶ See, e.g., Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 EMORY L.J. 1025, 1028–30 (1990) (debating the desirability of allowing patents for computer programs and algorithms). Patents on methods of doing business—particularly those that took known methods and claimed rights over performing those methods on computers—comprised one type of "suspect patent" with the potential to chill competitors from performing acts that were fairly obvious adoptions of new technology to perform old processes. For discussions of business method patents, see, e.g., FED. TRADE COMM'N, *TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY* 1–55 (2003); Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263 (2000); Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL'Y 309, 334–36 (2002) (arguing that the Supreme Court should reverse *State Street Bank* and revive the exemption on the patentability of business methods).

multipart technologies such as semiconductor chips.¹¹⁷ This is because a failure to license even one component could result in a permanent injunction against the sale of an entire product. The threat of an injunction in such cases functions as a holdup, allowing a patent holder to extract a much higher royalty than the relative value of their contribution. At the same time, suspect entities alternately called trolls,¹¹⁸ non-practicing entities,¹¹⁹ and patent-assertion entities¹²⁰ emerged to leverage suspect patents for litigation value and to leverage component patents for higher returns than their contributions merited. The business model of these companies, still relatively new at the turn of the century, is generally to amass-but-not-practice a portfolio of patents. The sole purpose of this portfolio is licensing to practicing entities, using the threat of a permanent injunction to extract fees tied to the value of the entire product—or to the cost of defensive litigation—rather than the value of the patented invention itself. The opposition to routine grants of injunctions was thus driven by concerns about innovation—and particularly innovation by third parties. The high risk of infringement and the potential for artificially high licensing costs raise the cost of innovation, which are passed on to consumers.¹²¹ In this context, industries, academics, and the government noted the potential ill effects

¹¹⁷ Wasserman Rajec, *supra* note 114, at 743–45; *see also* Carrier, *supra* note 32, at 17 (further noting that products with many and overlapping patents may result in longer effective patent terms).

¹¹⁸ The term “patent troll” was coined by then-Assistant General Counsel for Intel, Peter Detkin, in 1999. *See, e.g.*, Edward Wyatt, *Inventive, at Least in Court*, N.Y. TIMES (July 16, 2013), <https://www.nytimes.com/2013/07/17/business/ftc-turns-a-lens-on-abusers-of-the-patent-system.html> [<https://perma.cc/ACY6-F5B9>]; *In re Packard*, 751 F.3d 1307, 1325 (Fed. Cir. 2014) (Plager, J., concurring) (per curiam) (detailing the various names by which “patent trolls” are known); *see also* John M. Golden, “Patent Trolls” and Patent Remedies, 85 TEX. L. REV. 2111, 2112–14, 2112 n.7 (2007) (noting that the definition of “patent troll” often shifts, depending on a speaker’s rhetorical purposes).

¹¹⁹ *See* Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 326–28 (2010) (explaining that while descriptive, the term “non-practicing entities” may be over-inclusive, capturing actors like universities and research and development groups that do not engage in troll-like behavior).

¹²⁰ *Id.* at 328 (“Patent-assertion entities are focused on the enforcement, rather than the active development or commercialization of their patents.”).

¹²¹ TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, *supra* note 116, at 38–41 (explaining that higher royalties paid means higher prices for consumers, which results in low product use and deadweight on the market).

of suspect patents and suspect entities on innovation and looked to courts to curb these forces.

Before *eBay*, courts routinely issued permanent injunctions following a finding of patent infringement.¹²² The issuance of a permanent injunction is consistent with the patent's core right of exclusion—it is a court order validating the patent holder's interest in controlling who is authorized to make, use, sell, offer for sale, or import a patented invention. Under a real property remedy framework, patent infringement looks a lot like trespass. The trespass analogy became particularly relevant to the discussion about remedies for patent infringement, and the availability of injunctions in particular.¹²³ From a real property perspective, an injunction might be an order forbidding a trespasser from future trespass; or, for private property, ordering the return of a possession from its taker. And proponents of strong property rights in patents argued that the rarity of denying injunctions for trespass against real property ought to be recreated in patent law. From this view, injunctions make particular sense in patent law because of the difficulty in prospectively valuing information that previously didn't exist. As a result, patent holders may be the best arbiters of their inventions' worth. As with other areas of law, this informational asymmetry means that injunctions will often result in patents being put to their best use.¹²⁴

The rarity of injunctions under property rules is contested by others who argue that the limitations on injunctions in property law are more robust than the property rights proponents suggest, and therefore might provide sufficient channels to address the inefficiencies injunctions can cause in patent law.¹²⁵ In this vein, Michael Carrier discusses multiple

¹²² Wasserman Rajec, *supra* note 114, at 741 (“Before the Supreme Court decided *eBay*, permanent injunctions were routinely granted following a finding of infringement.”).

¹²³ Menell, *supra* note 102, at 716 (discussing the property rights movement's views on injunctive relief in patent law through the filing of an amicus brief: “By analogizing patent protection to trespass law, the brief argued that injunctive relief should be presumed in cases of patent infringement. It pushed the boundaries of patent law advocacy by citing land encroachment precedent”).

¹²⁴ Calabresi & Melamed, *supra* note 99, at 1106–10; see ROGER D. BLAIR & THOMAS F. COTTER, INTELLECTUAL PROPERTY: ECONOMIC AND LEGAL DIMENSIONS OF RIGHTS AND REMEDIES 38–42 (2005) (arguing that injunctive relief should be the general default remedy for patent infringement for the traditional reasons property rules are seen to trump liability rules).

¹²⁵ See generally Carrier, *supra* note 32, at 83 (arguing that limits are a crucial part of property rights and showing how those limits can apply to the increasingly propertized fields of intellectual

limitations on the right to exclude in real property, including equitable limitations for minimal encroachments, good faith improvements, boundary line disputes, and public accommodations, *inter alia*, suggesting that patent law might similarly introduce limitations on injunction grants consistent with property rules.¹²⁶ Similarly, John Golden suggests that a presumption of an injunction need not preclude occasional denials.¹²⁷ Many of those arguing against routine grants of injunctions suggest that injunctions are nevertheless very often the appropriate remedy for a finding of patent infringement.¹²⁸

Given how battle lines were drawn, the outcome could be characterized as a victory of liability rules over property rules. The Supreme Court was unanimous in its reversal of the Federal Circuit in *eBay*, explaining that there should be no “automatic” grant of injunctions; instead, courts must engage in a four-factor balancing test for every case. But despite the unanimity of the main opinion, it was the context-specific, utilitarian view of patents that won out over the strong property rights view in *eBay*. The two concurrences presented separate views, with Chief Justice Roberts, joined by Justices Scalia and Ginsburg, suggesting that history and precedence should result in frequent grant of injunctions.¹²⁹ In contrast, Justice Kennedy, joined by Justices Stevens, Souter, and Breyer, penned a concurrence recognizing the new contexts in which patent holders were bringing suits and requesting injunctions.¹³⁰ In particular, the concurrence noted the harm that permanent injunctions could cause when coupled with the types of suspect patents or entities discussed above.¹³¹ Justice Kennedy thus suggested that courts should

property law and concluding that “[i]f property, which effectively serves more goals than IP, can offer meaningful limits, then so can IP”).

¹²⁶ *Id.* at 73–75.

¹²⁷ Golden, *supra* note 118, at 2148–49 (suggesting that “[c]ourts could apply a rebuttable presumption of injunctive relief” while retaining an ability to stay or to deny injunctions to avoid “undue hardship”).

¹²⁸ Wasserman Rajec, *supra* note 114, at 782 (arguing that taking access interests into account to deny injunctions “would not lead to wholesale denial of injunctions”).

¹²⁹ *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 395 (2006) (Roberts, C.J., concurring).

¹³⁰ *Id.* at 396 (Kennedy, J., concurring).

¹³¹ *Id.*

consider “the nature of the patent being enforced and the economic function of the patent holder.”¹³²

Since the Court issued its *eBay* opinion, courts still issue injunctions to competitors,¹³³ but have denied injunctions to non-practicing entities more frequently.¹³⁴ Moreover, denials of injunctions are most likely when the types of concerns detailed in the Kennedy concurrence exist. Thus, when the patent holder is a patent assertion entity and the injunction threatens the ability of a practicing entity to participate in the market, an injunction is less likely to issue. It is possible to read *eBay* as consistent with a private property law view of patents, particularly as the unanimous opinion insisted it was affirming that the longstanding equitable test for injunctions applied to patents, as to other areas of law.¹³⁵ The Court reinvigorated the rubric for deciding on remedies in any given case, and many patent infringement claims result in the grant of permanent injunctions. However, it is hard not to see the outcome as the first blow in a series of setbacks to those who argue that a private property rights view must bring with it the strong version of those property rights. There is no presumption of entitlement to an injunction, and parties must prove more than simply the fact of a patent and its infringement in order to receive one.

As discussed in Parts III and IV below, courts’ willingness to look for answers beyond the strong version of a private property rights

¹³² *Id.*

¹³³ See, e.g., *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 717 F.3d 1336, 1344 (Fed. Cir. 2013) (reversing district court’s denial of an injunction to a competitor in the market, even when there was no loss of market share); *Robert Bosch LLC v. Pylon Mfg. Corp.*, 659 F.3d 1142, 1151 (Fed. Cir. 2011) (reversing district court’s denial of injunction and holding that irreparable injury may be found even when there are multiple infringers in market); *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 449 F. App’x 923, 932 (Fed. Cir. 2011) (affirming grant of injunction to direct competitor that suffered loss of market share); *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 861 (Fed. Cir. 2010), *aff’d*, 564 U.S. 91 (2011) (affirming grant of injunction when Microsoft’s infringement rendered i4i’s product obsolete, thereby resulting in a loss of market share).

¹³⁴ See *supra* note 112. In addition, courts and the legislature have taken aim at “suspect” patents in a number of ways. The Supreme Court’s renewed attention to patentable subject matter has raised the standard for patentability of algorithm-based inventions or other inventions directed towards abstract ideas. The legislature’s passage of the America Invents Act and the expansion of post-grant review discussed in Section IV.A also demonstrate a concern that invalid patents should be easier and cheaper to challenge. See discussion *infra* Section IV.A.

¹³⁵ See *eBay Inc.*, 547 U.S. at 391 (“These familiar principles apply with equal force to disputes arising under the Patent Act.”).

framework can be explained by the greater misfit in the contexts specifically mentioned in the Kennedy concurrence. Where this search ends, and whether it fits into the framework of limitations that apply to private property is a different question. The nature of the limitation may find its roots in property theory,¹³⁶ or it may derive from a more regulatory and utilitarian analysis of a patent's costs and benefits to society and third-party inventors¹³⁷—but it is clear that the Court will not take the private property rights story as the beginning and end of the inquiry.

B. *Patent Exhaustion as Limitation on Coordination and Transfer*

Another area in which private property law interpretations of patent law have been challenged relates to limitations on patent holder control over resale markets. The exhaustion doctrine—or the doctrine of first sale—provides that the first authorized sale of a patented good exhausts the patent holder's rights with respect to that good.¹³⁸ In recent cases, the Court has limited patent holders' control over downstream sales and expanded exhaustion to extraterritorial sales.¹³⁹ The relatively expansive interpretation of exhaustion has been tempered, however, by allowing for greater control through licensing for goods that are easily and perfectly replicable.¹⁴⁰

In 2008, the Court decided *Quanta Computer Inc. v. LG Electronics, Inc.*, holding that patent exhaustion applied to patented methods practiced in chipsets that were the subject of authorized sales by Intel to Quanta.¹⁴¹ In that case, LG Electronics granted Intel a license to method

¹³⁶ See *supra* notes 126–127.

¹³⁷ See *supra* note 132 and accompanying discussion.

¹³⁸ Wasserman Rajec, *supra* note 96, at 320.

¹³⁹ See *Impression Prods., Inc. v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523 (2017) (applying exhaustion to authorized sales abroad); *Quanta Comput., Inc. v. LG Elecs.*, 553 U.S. 617 (2008) (applying exhaustion to nullify restrictive licenses accompanying a sale).

¹⁴⁰ See *Bowman v. Monsanto Co.*, 569 U.S. 278 (2013) (upholding Monsanto's restrictive licensing agreement that accompanied the sale of seeds). In the copyright context, the Second Circuit recently held there was infringement when a digital platform allowed “resale” of “used” digital music files because the technological means of completing the sale involved making new, unauthorized copies. *Capitol Records, LLC v. ReDigi Inc.*, 910 F.3d 649, 655–56 (2d Cir. 2018).

¹⁴¹ *Quanta*, 553 U.S. at 621, 624.

patents that would be practiced in chipsets Intel designed.¹⁴² The license permitted Intel to manufacture, use, sell, and import products that practiced the patent. In a separate agreement, Intel agreed to notify its customers that its license did not allow for combining Intel products with non-Intel products. Quanta purchased chipsets from Intel and combined them with other products in a computer. The Court held that Intel's authorized sales to Quanta exhausted the patent holder's rights, refusing LG's attempts to enforce the license on downstream purchasers. The *Quanta* Court showed concern that allowing use restrictions to accompany method patents would allow for "an end-run around exhaustion" and "violate the longstanding principle that, when a patented item is 'once lawfully made and sold, there is no restriction on its use to be implied for the benefit of the patentee.'"¹⁴³

Then, in 2013, the Court addressed self-replicating technology in *Bowman v. Monsanto Co.*¹⁴⁴ The Court held that exhaustion allowed the purchaser of patented seeds to use—i.e., plant—them, but did not allow those seeds to be used to make "new copies of the patented invention" by growing a first generation of soy, harvesting the beans, and planting those in order to grow a second generation.¹⁴⁵ In its holding, the Court distinguished between a patent holder's right in a "particular" article that was sold and the patent holder's right to exclude others from "making" new articles that embody the patent.¹⁴⁶ Conversely, from the purchaser's perspective, the Court affirmed its line of cases holding there is a right to use or sell a particular article that was purchased, but did not extend this right to allow the production of more patented articles.¹⁴⁷

¹⁴² *Id.* at 623. The case also made clear that sales of goods that embody a method patent result in exhaustion, just as sales of goods that embody a product patent do. *Id.* at 628.

¹⁴³ *Id.* at 629–30 (alteration and emphasis omitted) (quoting *Adams v. Burke*, 84 U.S. 453, 457 (1873)).

¹⁴⁴ *Bowman*, 569 U.S. 278. Seeds are, by nature, self-replicating. Monsanto protects its patented seeds through a licensing agreement that allows growers to plant the seeds, but forbids saving subsequently harvested soybeans to replant or resell for planting.

¹⁴⁵ *Id.* at 280.

¹⁴⁶ *Id.* at 284 (quoting *United States v. Univis Lens Co.*, 316 U.S. 241, 251 (1942)).

¹⁴⁷ *Id.* ("[T]he purchaser of the [patented] machine . . . does not acquire any right to construct another machine either for his own use or to be vended to another." (quoting *Mitchell v. Hawley*, 83 U.S. 544, 548 (1873))).

In 2017, the Supreme Court extended exhaustion to foreign sales of patented goods in *Impression Products Inc. v. Lexmark International, Inc.*¹⁴⁸ As a result, a U.S. patent holder's rights in her patent are exhausted by an authorized foreign sale of goods, and the importation of those goods does not constitute infringement.¹⁴⁹ Prior to *Lexmark*, exhaustion applied to domestic, but not international, sales.¹⁵⁰ This means that prior to *Lexmark*, consumers buying indistinguishable, used goods in the United States might infringe patents, depending on whether those goods were first sold abroad or domestically. The general debates over patent exhaustion within the United States were echoed during the lead up to the *Lexmark* opinion, with the addition of considerations that were unique to international trade law.¹⁵¹ Some were particularly concerned that eliminating the possibility for price discrimination would result in higher prices and lower access abroad.¹⁵² In holding that there is

¹⁴⁸ *Impression Prods., Inc. v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523 (2017).

¹⁴⁹ *Id.* at 1535.

¹⁵⁰ *Boesch v. Graff*, 133 U.S. 697, 703 (1890) (finding no exhaustion of U.S. patent rights as a result of a German sale that was not authorized by the patent holder, although it was lawful in Germany at the time due to prior user rights in that country); *Fuji Photo Film Co. v. Jazz Photo Corp.*, 394 F.3d 1368, 1376 (Fed. Cir. 2005); *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1105 (Fed. Cir. 2001) ("United States patent rights are not exhausted by products of foreign provenance. To invoke the protection of the first sale doctrine, the authorized first sale must have occurred under the United States patent." (citing *Boesch*, 133 U.S. at 701-03)). Software is another field that is easily replicated and in which licenses often replace sales because they allow rights holders greater control over further copying and distribution. For a discussion of these factors, see Wasserman Rajec, *supra* note 96, at 345-48 ("[T]hese factors result in greater interest in licensing for easily replicable and self-replicating technologies.").

¹⁵¹ See, e.g., Jeffery Atik & Hans Henrik Lidgard, *Embracing Price Discrimination: TRIPS and the Suppression of Parallel Trade in Pharmaceuticals*, 27 U. PA. J. INT'L ECON. L. 1043, 1045-46 (2006) (arguing that price discrimination is important in getting pharmaceutical products to the least developed countries); Daniel J. Hemel & Lisa Larrimore Ouellette, *Trade and Tradeoffs: The Case of International Patent Exhaustion*, 116 COLUM. L. REV. SIDEBAR 17, 18 (2016) (suggesting that costs and benefits of an international exhaustion rule would fall disparately on different groups, and that "the adoption of a rule of international patent exhaustion would likely lower prices of patented goods in the United States and raise prices abroad").

¹⁵² Hemel & Ouellette, *supra* note 151, at 22-27. In contrast, I argued that firms were likely to implement other forms of price discrimination, and that a proper analysis of the effects of international patent exhaustion would compare the effects of geographic price discrimination to those of alternative forms of price discrimination, rather than no price discrimination. Wasserman Rajec, *supra* note 96, at 366-67. In addition, I suggested that other, administrative controls on the importation of medicine would limit the effects of an international patent exhaustion ruling on access to medicines. *Id.* at 371-74.

international exhaustion for patents in *Lexmark*, the Court showed concern for consumers, who would be unable to tell the difference between imported goods subject to restraints by IP rights-holders and domestic goods in resale markets that were unconstrained.

From a property rights view, the gradual expansion of the doctrine of exhaustion demonstrates a weakening of patent rights. The exhaustion doctrine is a limitation on a patent owner's right to exclude,¹⁵³ although it is consistent with property law's antipathy toward restrictive servitudes and restraints on alienation.¹⁵⁴ In that sense, the doctrine is very much a property law doctrine—it is simply one of many limiting doctrines. By disallowing the use of patent rights to enforce licensing provisions that run with goods, exhaustion limits patent holders' ability to craft sales and licenses.¹⁵⁵ For example, a patent holder may have to compete for sales with used versions of her own product, thus limiting her ability to charge a premium price. Exhaustion also limits a patent holder's ability to exercise price discrimination through field of use, geographic, or other restrictions. In short, while a patent grants a right to exclude, and patent holders can choose how and when to authorize others to make, use, sell, offer for sale, or import things that embody a patent, the decision to sell a particular thing removes that thing from her authority. The contrary rule—one that allowed patent holders to attach conditions to post-sale use that were applicable to downstream purchasers—would require a more robust, less limited theory of property rights in patents.¹⁵⁶

¹⁵³ See Amelia Smith Rinehart, *Contracting Patents: A Modern Patent Exhaustion Doctrine*, 23 HARV. J.L. & TECH. 483, 484 (2010) (“The right of a purchaser to control the downstream sale and use of patented goods without obtaining consent from the patent owner conflicts with the right of a patent owner to exclude others from practicing his invention when selling or using those goods.”).

¹⁵⁴ See Madison, *supra* note 23, at 430–34.

¹⁵⁵ See Chiappetta, *supra* note 97 (arguing that exhaustion should only serve as a default rule and that patent holders should be able to contract around it).

¹⁵⁶ Duffy & Hynes, *supra* note 95, at 5–6 (explaining that in an early copyright exhaustion case, a property rights theory would have been necessary to enforce post-sale restrictions; thus, the argument made in a case arguing against exhaustion was that by granting rights holders the exclusive right to sell their work, the statute was granting exclusive rights for each and every downstream sale. The argument lost).

Molly Van Houweling and other scholars suggest that exhaustion is an example of property law's aversion to restraints on alienation.¹⁵⁷ This view posits that property law itself contains the limitations that lead to the doctrine of exhaustion. In contrast, John Duffy and Richard Hynes argue that exhaustion is a doctrine that determines the domain of intellectual property law—that is, after an authorized sale, patent law simply does not apply and the parties must look to resolve their dispute through “whatever other sources of law might be applicable.”¹⁵⁸ Both views recognize the limits of a patent to control the behavior of third parties who have no contractual relationship with a patent holder. Moreover, both views recognize the importance of third-party property rights in their lawfully purchased goods, whether or not those goods were at some point covered by an intellectual property right. For the purposes of this Article, the salient point here is that the unlimited property rights version of patent rights has consistently been struck down when it runs up against strong third-party property interests.¹⁵⁹

C. *Post-Grant Review of Scope and Validity in Oil States*

The most recent instance in which the Court eschewed real and private property law analogies related to post-grant determinations of patent scope and validity. The patent application process, from inchoate interest to issued patent rights, has been a flash point for arguments about whether patent rights are better seen as administrative grants—subject to administrative review and revocation—or property entitlements that can only be adjudicated in Article III courts. In real property language, however, a patent application is a form of staking claim to property, and a robust defense of that property (the patent, once issued) is what encourages investment. However, the calibration of patent scope and validity, performed by the patent office during patent examination, balances a number of interests and the threshold question of whether the

¹⁵⁷ Aaron Perzanowski & Jason Schultz, *Digital Exhaustion*, 58 UCLA L. REV. 889, 912 (2011); Glen O. Robinson, *Personal Property Servitudes*, 71 U. CHI. L. REV. 1449 (2004); Molly Shaffer Van Houweling, *The New Servitudes*, 96 GEO. L.J. 885, 911–12 (2008).

¹⁵⁸ Duffy & Hynes, *supra* note 95, at 11 (quoting Frank H. Easterbrook, *Statutes' Domains*, 50 U. CHI. L. REV. 533, 544 (1983)).

¹⁵⁹ See discussion *infra* Part IV.

described invention merits protection at all.¹⁶⁰ In this way, its nature is regulatory rather than real property-like. The Court recently addressed these two views of issued patents and held that even after issuance, the scope and validity of a patent may be adjudged through administrative processes.¹⁶¹ However, the *Oil States* opinion carefully constrained the scope of its ruling, leaving room for stronger real property-like rules in other circumstances.

The process of determining whether a patent application ought to be granted involves much the same standards of patentability as the later determination of whether a patent is invalid;¹⁶² however, in *Oil States*, the Court examined whether the nature of the right is different post-issuance.¹⁶³ The case demonstrates patent law's mix of public rights and real property-type rights, by involving the government's administrative issuance of a right that is, post-issuance, meant to give incentives like a real property right.¹⁶⁴ While property law-like metaphors of the chase,

¹⁶⁰ *United States ex rel. Bernardin v. Duell*, 172 U.S. 576, 586 (1899) (“[I]n every grant of the limited monopoly two interests are involved, that of the public, who are the grantors, and that of the patentee.”).

¹⁶¹ *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365 (2018).

¹⁶² *See* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144 (2016); *see also* Jacob S. Sherkow, *Administrating Patent Litigation*, 90 WASH. L. REV. 205, 232 (2015) (discussing how post-issuance proceedings at the PTO are trial-like and serve as alternatives to district court litigation). Note that administrative determinations of invalidity post-issuance use a “preponderance of the evidence” standard in contrast to district court proceedings that use a “clear and convincing” standard to invalidate an issued patent. In addition, the PTO uses a “broadest reasonable interpretation” standard in determining the scope of patent claims for post-issuance review, whereas district courts do not. But the PTO recently announced it would change its practice to align its determinations with those of the district courts.

¹⁶³ *Oil States*, 138 S. Ct. at 1373 (“This Court has recognized, and the parties do not dispute, that the decision to *grant* a patent is a matter involving public rights—specifically, the grant of a public franchise. *Inter partes* review is simply a reconsideration of that grant, and Congress has permissibly reserved the PTO’s authority to conduct that reconsideration.”).

¹⁶⁴ *See* discussion *supra* Section I.B.

cultivation,¹⁶⁵ and capture¹⁶⁶ of ideas reflect a romantic notion of a solitary, genius inventor who toils away until enlightenment strikes, the non-rival nature of information means that state intervention is the means by which inventors are able to realize extra profits from their ideas.¹⁶⁷ There is no common law of patents and no natural law that logically leads to a twenty-year term of protection.¹⁶⁸ At the same time, unlike land, water, or personal property, inventions would not exist but for the work of inventors. In this sense, the creation of this right depends on both the creation of the inventor and the acknowledgment of that creation by the state.

The state—through the patent office—and the inventor, are the two necessary parties to the creation of patent rights; however, the patent office also represents the public's interest in maintaining a robust public domain.¹⁶⁹ The inventor will bring what she considers to be her invention to the patent office through her application, and by submitting materials on the state of the art prior to her invention and her unique contribution, along with distinct claims about the scope of her exclusive rights. Then begins a process in which the examiner assigned to the application will perform her own search, review materials, and require the applicant to clarify or constrain her claims. The goal, as discussed above, is to allow an inventor exclusive rights in her invention, but not in anything previously known, nor in things she has not discovered but that might fall

¹⁶⁵ JOHN LOCKE, TWO TREATISES OF GOVERNMENT AND A LETTER CONCERNING TOLERATION 111–12 (Ian Shapiro ed., Yale U. Press 2003) (1690) (“Whatsoever [a man] removes out of the state that nature hath provided, and left it in, he hath mixed his labour with, and joined to it something that is his own, and thereby makes it his property. It being by him removed from the common state nature hath placed it in, it hath by this labour something annexed to it that excludes the common right of other men.”).

¹⁶⁶ Timothy R. Holbrook, *Patent Anticipation and Obviousness as Possession*, 65 EMORY L.J. 987, 989 (2016) (“At the most basic, intuitive level, inventors feel passionately about their creations, viewing them as the fruit of considerable labor. Innovators can have an intuitive sense of ownership—that they are entitled to rights with respect to their invention because they created it.”). For the centrality of capture and possession in property law, see, e.g., Richard A. Epstein, *Possession as the Root of Title*, 13 GA. L. REV. 1221, 1221 (1979), and Rose, *supra* note 25, at 75 (explaining that “first possession is the root of title”).

¹⁶⁷ See *supra* Section II.A.

¹⁶⁸ See, e.g., *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 525–26 (1972).

¹⁶⁹ See, e.g., Gordon, *supra* note 1, at 1559 (casting the public right to use what is common or in the public domain as “a species of property in even a stronger sense, for as a ‘liberty right’ it is a stable and guaranteed entitlement”).

within the scope of broad claim language. In this way, the U.S. patent system seeks to carefully calibrate the scope of a patent to protect access to technology already in the public domain (or disclosed by others) and to avoid preemption of future innovation.

Issued patents can be invalidated or narrowed in later proceedings. In fact, because patent examination is an *ex parte* process, often conducted before competition in a market has crystalized, patent examiners—and even patent applicants—may lack some of the context needed to identify important limiting claim language to meaningfully describe and constrain an invention.¹⁷⁰ Thus, claim construction, a process by which the court rules on the meaning of various claim terms and thus the scope of the patent, is a routine part of any patent litigation. In addition, many patent infringement claims are met with defenses claiming invalidity of the issued patent. This can also be explained by the *ex parte* nature of patent examination. Competitors who are most likely to have information on why a claimed invention is not new or non-obvious are not part of the initial proceedings. Moreover, the threat of litigation is motivation for patent infringement defendants to search for invalidating prior art that examiners might have missed.

The nature of patent rights was determinative in *Oil States*, decided by the Supreme Court in 2018.¹⁷¹ In that case, Oil States Energy Services had a patent on technology involved in hydraulic fracturing (also known as “fracking”). When it sued a competitor for infringement, the competitor challenged the validity of the patent in an administrative process called *inter partes* review.¹⁷² Two things about the case are interesting for the purposes of examining property law analogy in this case. The first is about the purposes of *inter partes* review and the statute that increased agency review of issued patents. The second is about the centrality of the public versus private rights debate that ultimately resolved the constitutional question central to the case and determined that patents are public franchises for purposes of post-grant review of

¹⁷⁰ See, e.g., Sarah R. Wasserman Rajec, *Patents Absent Adversaries*, 81 BROOK. L. REV. 1073 (2016).

¹⁷¹ *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365 (2018).

¹⁷² *Greene’s Energy* also argued invalidity as a defense to patent infringement in district court. However, that proceeding was stayed during the pendency of the administrative review of the patent. *Id.* at 1370–72.

validity, and that it was therefore constitutional for an agency to make the determination of validity.

While administrative reviews of issued patents existed prior to the America Invents Act, that legislation was intended to increase such challenges. This was a response to the increase of patent suits brought as nuisance suits and often brought with “weak” patents.¹⁷³ Here, “weak” is a shorthand to say that the patents are unlikely to withstand a validity challenge. The proliferation of such weak patents may have been a result of the standards applied by the PTO to newly arising technologies, such as software, that resulted in very broad claims. At the same time as there was a proliferation of broad and vague patents issued in software and related fields, a business structure arose to take advantage of the relative availability of such patents and the high cost of defending against patent infringement claims in federal court. “Patent assertion entities”¹⁷⁴ acquired patents and asserted them against business owners, knowing that business owners would rather settle the suit and license the patents than engage in an expensive battle to invalidate the patent. The rise of these patent assertion entities spurred a number of reforms that sought to address the inefficiencies they introduced into the marketplace.¹⁷⁵ One such proposal was the potential for administrative review as a means of addressing the excess of weak patents and providing a cheap forum for

¹⁷³ See, e.g., Ronen Avraham & John M. Golden, “From PI to IP”: *Litigation Response to Tort Reform*, 20 AM. L. & ECON. REV. 168 (2018). Prior to passage of the America Invents Act, practitioners and scholars demonstrated concern over the potential for strategic litigation to extract settlements and suggested that increased administrative review could solve such problems by lowering the costs of invalidating weak or overbroad patents. See e.g., Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won’t Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 943, 965 (2004); Stuart J.H. Graham & Dietmar Harhoff, *Separating Patent Wheat from Chaff: Would the U.S. Benefit from Adopting Patent Post-Grant Review?*, 43 RES. POL’Y 1649 (2014).

¹⁷⁴ A “patent-assertion entity,” a term coined by Colleen Chien, is defined as an “entit[y] that use[s] patents primarily to get licensing fees rather than to support the development or transfer of technology.” Chien, *supra* note 119, at 300.

¹⁷⁵ See, e.g., *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring) (noting new business models that use the threat of an injunction to obtain larger licenses than warranted, particularly for inventions that are small components of larger goods and for patents in certain areas that are unduly broad and may have been improvidently granted). *But see* Christopher A. Cotropia et al., *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649 (2014) (analyzing litigation from 2010 to 2012 and finding that the percentage of lawsuits brought by PAEs did not grow significantly).

accused infringers to challenge the validity of a patent before engaging in the costly litigation of an infringement trial.¹⁷⁶

While the purpose of post-issuance review may seem clear, it conflicts with a notion of patents as private property, where certainty about ownership allows for fruitful investment and the potential for revocation by the state might lead to underinvestment. Numerous amicus briefs were filed in *Oil States* espousing the private property view of patents and suggesting that as private property rights, patents can only be revoked through proceedings in an Article III court.¹⁷⁷ Academics on the other side of the issue framed inter partes review of issued patents as error correction, allowed by language in the statute that defines patent rights as being “[s]ubject to the provisions of this title,” which includes provisions for administrative review of decisions to grant patents.¹⁷⁸

The Court held that “the decision to *grant* a patent is a matter involving public rights.” Because inter partes review “is simply a reconsideration of that grant,” congressional grant of that authority to the PTO is permissible.¹⁷⁹ In holding patents to be public rights, the court explicitly noted public interest in the grant of patents. Interestingly, the Court warned that the case “should not be misconstrued as suggesting that patents are not property for purposes of the Due Process Clause or the Takings Clause.”¹⁸⁰ In other words, the Court is contemplating that patent rights may take on the contours of different types of property in different contexts. In the context of potentially wrongly granted rights, the salient characteristic of patents is that they are taken out of the public domain by an administrative agency—if that was a mistake, the administrative agency is entitled to fix the mistake, as here. In contrast, the Court suggests that a properly granted patent that is later appropriated by the government likely must be treated as private property and adjudicated as such. The idea that patents can take on different property characteristics in different contexts is inconsistent with the stronger, private property view of patents. However, as discussed above,

¹⁷⁶ See *supra* note 173.

¹⁷⁷ *Oil States*, 138 S. Ct. at 1372–73 (explaining that Congress cannot delegate powers that are vested in the judiciary to other entities).

¹⁷⁸ Brief for 72 Professors of Intellectual Property Law as Amici Curiae in Support of Respondents at 5, *Oil States*, 138 S. Ct. 1365 (No. 16-712), 2017 WL 5171470, at *5.

¹⁷⁹ *Oil States*, 138 S. Ct. at 1373.

¹⁸⁰ *Id.* at 1379.

the *Oil States* Court engaged the same third-party property interests that held sway in *eBay* and *Lexmark*, albeit in a different context. The Court's opinion in *Oil States* is arguably the largest deviation from a property rights framework for patent rights, because, in departing from the vision championed by the property rights advocates, the Court looked beyond limiting principles already present in private property doctrine and instead looked to another area of property law, altogether—namely, public property. The next Part expands on the property law misfit and how it explains the Court's dissatisfaction with the private property law framing when that misfit is most salient.

III. THE PATENT LAW MISFIT

The set of property rights analogies used with patents are helpful for conceptualizing what patents are meant to do and why their structure may help accomplish those goals. However, as discussed in the previous Section, the Court sometimes limits patent holder rights in ways that are seemingly at odds with a private property law framework. This is because while there is much descriptively useful about these various private property law analogies, there are serious differences from patent law, too. These differences center on the role and interests of third parties—and the public generally—in patent law as contrasted with other forms of private property. Scholars have explored ways that a property regime does not fit patent law purposes.¹⁸¹ One of the most discussed ways that patents differ from other sorts of property is the impossibility of defining their contours in a stable and self-contained manner. Unclear boundaries increase uncertainty for rights holders and raise information costs for third parties, making a real property rights framework a worse fit.¹⁸²

¹⁸¹ See, e.g., JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 29–34 (2008) (discussing ways in which patents differ from traditional notions of property); Lemley, *supra* note 5, at 1036–37 (listing problems created by treating and thinking about patents in the same manner as traditional property).

¹⁸² See, e.g., BESSEN & MEURER, *supra* note 181, at 46 (chapter three explains that “[a] successful property system establishes clear, easily determined rights. Clarity promotes efficiency because ‘strangers’ to a property can avoid trespass and other violations of property rights, and, when desirable, negotiate permission to use the property”).

Moreover, these uncertain boundaries affect infringement determinations in addition to grant and scope determinations in important ways.¹⁸³

In addition to this, however, are two other related problems. First, patent law comes with a strong public interest in a robust public domain—that is, in a large set of things, unowned.¹⁸⁴ And second, there is a difference between the object protected by patent rights and the objects of infringement claims. This is important because alleged infringers often use their own property—replete with their own property interests—to make products that are infringing. The following Sections describe these misfits. This Part begins by explaining the notice and information cost problems with a private property framework for patents before showing how these other misfits identified in this Article exacerbate those problems and add the third-party property interest problem.

A. *Notice Failure, Boundary Ambiguity, and the Importance of the Public Domain*

Patents have high notice costs that are compounded by their ambiguous boundaries. These characteristics raise the costs of using a property system by raising costs of determining what patent rights apply to things.¹⁸⁵ Moreover, it raises the costs of determining that no patent rights apply to a thing.¹⁸⁶ Notice costs for patents are higher than they are for real property due to the difficulty in determining rights boundaries.¹⁸⁷

¹⁸³ See, e.g., Sarah R. Wasserman Rajec, *Infringement, Unbound*, 32 HARV. J.L. & TECH. 117 (2018).

¹⁸⁴ See, e.g., *Consol. Fruit-Jar Co. v. Wright*, 94 U.S. 92, 96 (1876) (after explaining that patent rights are property and inventors are a meritorious class deserving of its rights, the opinion continues: “[t]here is a like larger domain held in ownership by the public. Neither an individual nor the public can trench upon or appropriate what belongs to the other”).

¹⁸⁵ See, e.g., BJ Ard, *More Property Rules than Property? The Right to Exclude in Patent and Copyright*, 68 EMORY L.J. 685, 720 (2019) (noting the notice failures endemic to patent law and suggesting that in contrast, “[r]eal property presents relatively few notice problems”).

¹⁸⁶ See, e.g., *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996); Long, *supra* note 27 (on information costs to third parties even in the case of noninfringement).

¹⁸⁷ See, e.g., Long, *supra* note 27; James Y. Stern, *The Essential Structure of Property Law*, 115 MICH. L. REV. 1167 (2017) (on costs of determining ownership); Maureen E. Brady, *The Forgotten*

Of course, real property boundaries can be delimited in various ways and there can be uncertainty about what those boundaries are.¹⁸⁸ In addition, uncertainty as to ownership, recordation, title, and encumbrances are all familiar problems in property law. However, that uncertainty pales in comparison with the uncertainty inherent in patent rights.¹⁸⁹ This is because boundary problems and information costs are a factor for anyone operating in a field covered by patents, and there are considerable costs to third parties, even when they are only determining that no patent prohibits a contemplated act.¹⁹⁰ While patents are subject to all the same problems of other types of property, such as disputes over ownership, title, etc., it is disputes over their proper scope that dominate patent litigation¹⁹¹—and, as a result, dominate actors’ decisions about how to avoid litigation.

The patent statute requires applicants to describe their invention, explain how to make and use it, and conclude by “distinctly claiming the subject matter which the inventor . . . regards as the invention.”¹⁹² Patent claims denote the scope of the exclusive right of a patent—and because they are widely available to the public, third parties theoretically have notice of what is protected.¹⁹³ Determining the scope of the claims is central to a patent infringement lawsuit.¹⁹⁴ The meaning of claim terms is dependent on judicial rulings that are hard to predict and changing.¹⁹⁵

History of Metes and Bounds, 128 YALE L.J. 872 (2019) (on history of boundary-determination for real property in early America).

¹⁸⁸ See Brady, *supra* note 187, for historical examples of property delineation. Brady points out that boundaries were not always entirely clear—and that this method worked particularly well for those within a community, rather than for communicating to the world at large about boundaries.

¹⁸⁹ See Greg Reilly, *Completing the Picture of Uncertain Patent Scope*, 91 WASH. U. L. REV. 1353, 1353 (2014).

¹⁹⁰ See Long, *supra* note 27, at 483 (“Information costs are more significant in intellectual property than in real property and personal property law.”).

¹⁹¹ See Reilly, *supra* note 189, at 1353 (“Uncertain patent scope is perhaps the most significant problem facing the patent system.”).

¹⁹² 35 U.S.C. § 112 (2018).

¹⁹³ The PTO website and Google patents are easy tools for anyone to search now. See discussion *supra* Section I.B.

¹⁹⁴ See Greg Reilly, *Judicial Capacities and Patent Claim Construction: An Ordinary Reader Standard*, 20 MICH. TELECOMM. & TECH. L. REV. 243 (2014).

¹⁹⁵ See Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101 (2005); Jason Rantanen, *The Malleability of Patent Rights*, 2015 MICH. ST. L. REV. 895 (2016).

This may be due to policy differences among judges about the appropriate method of interpreting claims.¹⁹⁶ It may also be due to different approaches among judges about what claim scope is meant to denote: a patent-holder's invention or a patent-holder's description of the exclusion to which she is entitled.¹⁹⁷ It may result from ambiguity introduced by a patent applicant, either unintentionally, or with the intent to cover future and unpredictable variations on her invention.¹⁹⁸

Regardless of the reason for this uncertainty, it distinguishes patents from real and personal property in an important way. Thomas Merrill and Henry Smith have suggested that the benefits of standardized forms of property derive from lowered measurement costs to third parties.¹⁹⁹ The same measurement externalities apply with respect to unclear boundaries of rights. Certainty about boundaries would allow third parties to avoid infringement, while uncertain boundaries result in some undesirable chilling of activity by third parties, whether it is because they incorrectly analyze the claims of a patent too expansively or because the measurement costs of determining those boundaries—up to and including litigation—are too high relative to the value of the activity.

And patents do have higher information costs than other forms of property.²⁰⁰ The boundaries of a patent are less certain than the boundaries of other things governed by in rem rights.²⁰¹ As Clarisa Long explains, because intellectual property rights are intangible, “determining and measuring the boundaries of intellectual goods are more difficult than determining and measuring the boundaries of real property,” thus

¹⁹⁶ See Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 YALE L.J. 530 (2013).

¹⁹⁷ See Oskar Liivak, *The Unresolved Interpretive Ambiguity of Patent Claims*, 49 U.C. DAVIS L. REV. 1851, 1854 (2016) (“[D]iffering case outcomes can be explained as an unstated disagreement about the fundamental meaning of patent claims and not necessarily the result of policy differences.”).

¹⁹⁸ See Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 759 (2009).

¹⁹⁹ Merrill & Smith, *supra* note 93, at 26 (“Whether the objective is to avoid liability or to acquire rights, an individual will measure the property rights until the marginal costs of additional measurement equal the marginal benefits. When seeking to avoid liability, the actor will seek to minimize the sum of the costs of liability for violations of rights and the costs of avoiding those violations through measurement.”).

²⁰⁰ See Long, *supra* note 27, at 483.

²⁰¹ See, e.g., Richard A. Epstein, *Property Rights in cDNA Sequences: A New Resident for the Public Domain*, 3 U. CHI. L. SCH. ROUNDTABLE 575, 576 (1996).

increasing the cost of avoiding infringement.²⁰² In patent law, the meaning of claim terms is determined by a standard of what a reasonable person would understand the terms to mean at the time of invention, a theoretically objective standard that is only made certain once a court has ruled on what that meaning is.²⁰³ A determination of the ownership of intellectual property is less problematic than determinations of whether there is a right and what its boundaries are, but it can still prove costly.²⁰⁴

The chilling effects of high measurement costs are particularly problematic in patent law, where it is socially desirable to have third parties engaging in any activity that is not excluded and where there is a social interest in a robust public domain. In property disputes, often a question of boundary will be limited to the two parties with ownership interests in the property—whether the dispute is over real property and the boundary between two plots of land or private property and the ownership of a particular thing. Patent law, in contrast, provides answers only to the question of whether an idea is inside the rights holder’s claims or outside. If inside, the owner is entitled to exclusive rights for all the reasons listed above. If outside, however, the information may well be free for anyone to use.²⁰⁵ As a result, patent litigation affects parties not before the court, and alleged infringers act as stand-ins for a public that has an interest in knowing the scope and validity of patent claims.²⁰⁶ And unlike residential land or cars parked on a street, the patent system contemplates and welcomes the possibility of unowned and unprotected ideas, as evidenced by the patentability standards and term limits of patent rights. There is no equivalent in private property where, for example, someone on a street might look at a car and wonder whether this is one of those

²⁰² Long, *supra* note 27, at 483.

²⁰³ See Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 77 (2005).

²⁰⁴ *But see* Stern, *supra* note 187, at 1167 (arguing that determining ownership is costly).

²⁰⁵ This example excludes the possibility of overlapping interests or coverage by a second patent for simplicity’s sake.

²⁰⁶ See Michael J. Burstein, *Rethinking Standing in Patent Challenges*, 83 GEO. WASH. L. REV. 498, 503 (2015) (arguing for increased standing for parties seeking to “quiet title” to patents because “[w]hen patents are of uncertain validity or scope, their mere presence creates risk and uncertainty that deters productive investments”); Wasserman Rajec, *supra* note 170, at 1074 (“[T]he outcome of patent litigation affects not only the parties to the suit, but also the interests of other potential innovators and the public.”).

cars that someone owns or whether it is free to take.²⁰⁷ In patent law, however, that perspective is welcomed—and the high costs of making the determination distinguish patents from other types of property that are more apparently privately owned.

B. *Dominion and the Divide Between Protected Things and Infringing Things*

There is another misfit that has been less explored. This centers not merely on notice to third parties, but on the separate property interests third parties have in their own goods. One of the biggest misfits between patents and an in rem rights framework is that the “thing” protected is different from the “thing” that is most relevant to a lawsuit—the device accused of infringing the patent.²⁰⁸ This is because the things protected by intellectual property rights are different from most subjects of property rights.²⁰⁹ The ideas covered by patents are intangible, nonrival, and—importantly—outside the control of their possessors. A patent holder may manufacture and distribute goods that embody her patented invention, but it is the information that is protected by the right. Because the patent embodies intangible information, the language of “things” and rights in rem are an uneasy fit.²¹⁰ This is true even though the exclusive, in rem nature of the rights is central to our understanding of patents.²¹¹ What the patent protects is intangible information that others are

²⁰⁷ See *supra* note 71 and accompanying discussion. There are now companies that offer rentals of cars, bikes, and scooters throughout various cities, of course, but even these are clearly owned by the company.

²⁰⁸ See Smith, *supra* note 1, at 1795 (explaining that the “things” that are the objects of property rights are constructed).

²⁰⁹ Justice Oliver Wendell Holmes opined on the difference between intellectual property and traditional notions of property in the copyright context:

The notion of property starts, I suppose, from confirmed possession of a tangible object and consists in the right to exclude others from interference with the more or less free doing with it as one wills. But in copyright property has reached a more abstract expression. The right to exclude is not directed to an object in possession or owned, but is *in vacuo*, so to speak.

White-Smith Music Pub. Co. v. Apollo Co., 209 U.S. 1, 19 (1908) (Holmes, J., concurring).

²¹⁰ See, e.g., Madison, *supra* note 23, at 383.

²¹¹ See discussion *supra* Part I.

excluded from embodying.²¹² In this sense, patents differ from real or personal property entitlements,²¹³ because a patent need not settle entitlements to something that currently exists or with respect to a particular thing at all. Rather, it allows its holder to stop others from making (using, selling, etc.) anything that falls within the boundaries set forth in the patent claims.²¹⁴ This prohibition restricts a potential infringer from building things with her own property, over which she exercises dominion.²¹⁵ And, importantly, it restricts the use of property over which a patent holder likely exercises no dominion.

To return again to the car analogy, a property entitlement allows me to exclude you and others from intermeddling with my particular car. If you choose to procure or make a car that is identical to mine in every way, I have no legal recourse to stop you. In contrast, if I have a patent drawn to an automobile, I can stop you from making a car as claimed in my patent, even if you own all of the materials, and even if you have independently invented a car identical to mine.²¹⁶ Similarly, the title to my car specifies the precise car in which I have rights, whereas the grant of a patent is a right to stop the manufacture, use, and sale of all cars that fit the claims of my patent, regardless of ownership of the physical

²¹² See 35 U.S.C. § 271 (2018) (stating that a patent right allows its holder to exclude others from making, using, offering for sale, selling, or importing the claimed invention in the United States).

²¹³ It is true that there can be private property rights in intangible goods. And, patents may cover intangible goods or processes. Here, I am discussing the disconnect between the intangible ideas covered by patents and their embodiments, whether tangible or not.

²¹⁴ See, e.g., Madison, *supra* note 23, at 383 (2005) (“In patent law, for example, there is the actual device that the inventor developed, and there is the legally distinct thing that the patentee owns, which the law knows as the patent claim.”). However, there need be no “actual device that the inventor developed,” as an inventor need not have actually built a physical device in order to receive a patent; rather, she need only sufficiently describe it so that one skilled in the art can build it without undue experimentation. *Id.*

²¹⁵ It is true that most private property rights are not unlimited—for example, I may not use my car to trespass on your property; and those who own weapons may be subject to intentional tort claims if used against another person. Like the existence of private property rights over the types of things that are owned, however, limitations and restrictions often track societal intuition about how property ought to be owned, and these limitations, unlike patent rights, are not constantly changing and requiring constant search.

²¹⁶ Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475 (2006).

components from which they are to be built.²¹⁷ This is a restatement of the fundamental difference between rights in property and the intangible rights that patents grant. And yet this difference has a number of consequences. Because information is nonrival—that is, one person’s use of it does not diminish its availability for another—the grant of exclusive rights to information comes with deadweight loss.²¹⁸ This trade-off of current deadweight loss for future innovation (and the eventual entry into the public domain of patented inventions) is the bargain at the heart of the patent system. Unlike traditional property rights, however, the exclusive grant of a patent is broader and affects third party uses of their own property.

The justification based on benefits to right holders appears to apply similarly at first blush: exclusive rights allow inventors to reap rewards for successful inventions, encourage investment, and allow for transfers to others who value the right more.²¹⁹ However, if right holders are unable to detect infringement or enforce rights in efficient ways,²²⁰ the investment incentives are lowered. Difficulty in detection of infringement and enforcement of patents flows directly from the lack of possession and control a patent owner has over allegedly infringing “things” to which her right pertains. At the same time, the cost story to third parties is also more complicated than for real or personal property. Because patents cover intangible ideas, there is no signal to third parties, such as other inventors, that they are creating something protected.²²¹ Even if a patent holder is selling embodiments of the patent, notice is more complicated than it is

²¹⁷ The two-step process of a patent infringement determination is (1) determining the scope of the claims and (2) comparing the construed claims to the infringing device. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 374 (1996) (“Victory in an infringement suit requires a finding that the patent claim ‘covers the alleged infringer’s product or process,’ which in turn necessitates a determination of ‘what the words in the claim mean.’” (internal citations omitted)); see also 1 JANICE M. MUELLER, MUELLER ON PATENT LAW: PATENTABILITY AND VALIDITY § 16.01 (2012).

²¹⁸ See e.g., Steven Shavell & Tanguy Van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J.L. & ECON. 525, 529 (2001); Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 974 (2012).

²¹⁹ See discussion *supra* Part I.

²²⁰ Efficient enforcement is generally enforcement against manufacturers or distributors as opposed to consumers and end users.

²²¹ Shyamkrishna Balganesh, *The Pragmatic Incrementalism of Common Law Intellectual Property*, 63 VAND. L. REV. 1543, 1549 (2010) (noting “the intertemporal problems inherent in granting plaintiffs open-ended, property-like exclusionary control over an intangible”).

for tangible, rivalrous property because third parties can infringe through acts using goods entirely within their own dominion.

The existence of an innovative “thing” also does not telegraph the likelihood that it is subject to patent rights in the same way that the existence of personal property tends to signal its “owned” nature to observers. This is because of the robust public domain that is a central purpose and benefit of the patent system.²²² By design, the public domain consists of knowledge and ideas that are unpatented—whether those ideas were unpatentable to begin with, no patent was ever sought, or they were disclosed in a patent now expired. This vast domain of unowned ideas is a feature of the patent system, not a bug.²²³ However, the result is that patent rights come with much higher notice costs than other property entitlements—and these search costs apply whether or not ideas are in fact covered by patent rights, because absent a patent search, a thing that infringes on a valid patent is likely to look very much like a thing that is in the public domain and freely available to be copied.

Unfortunately, there are costs to determining that something is part of the public domain.²²⁴ If an observer wishes to undertake an action while avoiding infringement, she must learn whether the information is protected by any form of intellectual property law; if so, what the scope (and validity) of that right are and what actions will result in liability; and, if she intends to proceed and wishes to contract around the right, she must then discover who is the owner of the right.²²⁵ The relative difficulty of answering these questions for information protected by patents as opposed to other forms of property demonstrates that the traditional concept of in rem rights is already stretched when applied to intellectual

²²² This may be because of failure to meet the requirements of patentability, decisions not to seek patent protection, or the conclusion of a patent term and expiration of rights, *inter alia*.

²²³ See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 64 (1998) (describing the “reluctance to allow an inventor to remove existing knowledge from public use” that bars patents for inventions already on sale); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 156 (1989) (“[T]he efficient operation of the federal patent system depends upon substantially free trade in publicly known, unpatented design and utilitarian conceptions.”).

²²⁴ Long, *supra* note 27, at 476.

²²⁵ See discussion *supra* Section II.A. For a discussion of the cost of determining ownership and its role in the structure of property law, see Stern, *supra* note 187, at 1210–11 (“[I]t is mutual exclusivity and the problem of titling that accounts for much of the high information costs that property law confronts.”).

property law. The information cost justification for exclusive rights becomes less compelling when rights boundaries are uncertain or not intuitive. Information costs to third parties also present problems for the in rem justifications for patent rights. As discussed above, title to personal property is to a particular “thing,” whereas a patent grants the right to stop others from making, using, and selling things of their own.²²⁶ As a result, the existence of a tangible good serves to give its own notice—that is, someone who sees a car knows whether and what rights attach to it insofar as they affect the observer’s duties. So while there may be a lien on the car or it may be leased rather than owned, the observer has notice that she may not interfere with it. If the observer would like to contract with the owner, she may face the difficulty of locating the titleholder. But once located, she knows that there are a limited number of forms that property ownership can take and her interest in buying the car (or leasing it) should be relatively simple to contract for.²²⁷ The story with patented goods is different for observers, as well, both because of the high information costs associated with search and the attendant uncertainties about validity and scope and because of the fundamental purpose of enhancing the public domain through the grant of private rights. Patent law differs from real and personal property law because of the value that the public domain plays. There are many knowledge goods in the marketplace to which no intellectual property rights attach, and identification of such goods as unencumbered is an added operating cost.²²⁸ Unfortunately, someone who plans to build a new gadget does not know, instinctively, whether that plan embodies a currently patent-protected idea until she engages in a search at the PTO.²²⁹ This search must include an analysis of term, scope, and validity of any relevant patent that is uncovered. And if a license is sought, current ownership of

²²⁶ See discussion *supra* Part I.

²²⁷ Merrill & Smith, *supra* note 93.

²²⁸ In the car analogy, the public domain would be a pool of unowned cars, available to anyone to make use of as she saw fit.

²²⁹ Long, *supra* note 27, at 476 (“Observers will need to learn about the attributes of an intellectual good to avoid infringing it, to determine whether they want to enter into negotiations with the property owner over it, and to build on it. Observers must also make second-order decisions regarding how much information to collect before making decisions regarding the good.”). Even after discovering a relevant patent, an interested potential user will likely not be certain of the scope or validity of any patent she comes across.

the patent must also be ascertained.²³⁰ Goods that embody information protected by patents are not easily distinguishable from goods that do not. This means that determining whether information or an idea is already protected by a patent is costly, even when there is no protection. Inventors who run patent searches to determine their freedom to proceed with a new plan spend money and time to find out that there are no relevant rights to block them.²³¹

The information and notice costs of patents as compared to other forms of property also fall on patent owners in the form of detection and enforcement costs. The value of an exclusive right to its holder lies in the ability to enforce it.²³² The gap between the protected information and the “things” that potentially infringe make this a more difficult endeavor than for more traditional forms of property. The law often takes account of differing abilities to detect property rights violations. For example, the different liability standards for trespass to land and trespass to chattels in American tort law derives from the greater dominion a property holder has over personal property.²³³ Suits for conversion or trespass to chattels—that is, intermeddling with private property—require a showing of damages, whereas trespass to land is a strict liability tort, requiring no damages to find liability.²³⁴ Shyamkrishna Balganesh explains that this is because “movables, unlike immovables, are capable of being subjected to actual physical control by those who possess them,” and suggests that a possessor ought to use “self-help” to protect the chattel against interference (which may include protective measures, rather than

²³⁰ Stern, *supra* note 187, at 1210–11.

²³¹ And even so, the search may not turn up everything; there is a second order decision about how much to spend on such searches as well. See Long, *supra* note 27, at 476.

²³² A full discussion of the damages associated with patent infringement are beyond the scope of this Article. However, for a discussion of the connection between rights and remedies, see Hanoch Dagan, *Remedies, Rights, and Properties*, 4 J. TORT L. 1, 3 (2011), and PENNER, *supra* note 68, at 131 (“There is a clear sense in which it is right to say that where there is a right there is a remedy, a statement often rendered in the latin *ubi ius ibi remedium*, which is this: if an individual has no remedial rights in a legal system through which he can vindicate a right that he supposedly has, that right is not recognized by the system.”). For a patent-specific discussion of injunctions versus damages as remedies for patent infringement, see, e.g., Wasserman Rajec, *supra* note 114, at 742–48.

²³³ Shyamkrishna Balganesh, *Property Along the Tort Spectrum: Trespass to Chattels and the Anglo-American Doctrinal Divergence*, 35 COMMON L. WORLD REV. 135, 142–44 (2006).

²³⁴ William L. Prosser, *Nature of Conversion*, 42 CORNELL L. REV. 168, 172–73 (1957).

simply force).²³⁵ In this sense, however, patent rights entail less possession and dominion than tangible personal property or even real property. Because the patent holder has disseminated her ideas to the public (albeit protected by her patent), she has no sense of who may have adopted and implemented them. In addition, she likely has no possessory interest in the resources used to build infringing goods. As a result, a patent holder may have no reasonable way of knowing that infringement is taking place or discovering by whom. While property law may also encounter difficulties of identifying thieves and recovering stolen property, the owners generally have notice that a theft has taken place, and because physical goods must exist somewhere, will have an idea of where to start looking. However, patent law has maintained the fiction that the rights it grants are in rem, while protecting an intangible idea from infringement by an inchoate embodiment of that idea. This gap between the thing protected and the thing a patent holder must identify in order to prove a claim of infringement may seem relatively unimportant for more traditional, tangible patented goods sold through traditional, centralized manufacturing channels. That is, the holder of a patent on a large machine may well keep an eye on other such machines on the market and, if she identifies one that appears to infringe, may quickly identify its manufacturer and bring suit. However, for some types of inventions the fit is worse than for others. Thus, when infringement is likely to involve multiple separate manufacturers or components, the goods are intangible, and there is direct distribution to end users, it may be more difficult for a patent holder to identify acts of infringement.²³⁶

IV. ANALYZING THE MISFIT

The previous Sections argued that private property rights, with their emphasis on protecting rights holders' autonomy within the boundaries of the right, are not a perfect fit for patents and showed how, in a number of recent cases, the Court has declined to apply the strong view of property rights in patent cases. What do *eBay*, the exhaustion cases, and *Oil States* have in common? All demonstrate misfits with property law due to third party interests. Moreover, in each strain of cases, the patent

²³⁵ Balganes, *supra* note 233, at 143.

²³⁶ Wasserman Rajec, *supra* note 183.

holder's lack of possession couples with third party interests in their property. Justice Kennedy's *eBay* concurrence specifically identified situations in which injunctions might not be appropriate remedies. The contexts the opinion identifies are all instances of high notice costs and the potential of privatizing information that ought to be un-owned and available to third parties for use. Similarly, the exhaustion cases demonstrate how courts prioritize third party property ownership over intangible rights that would otherwise encumber goods while giving no notice of their existence. Last, the Court's declaration that patents are public franchises for the purposes of post-grant review (but not other purposes) demonstrates an attempt to fix the problems of unclear rights and boundaries before they can do harm to the public domain.

A number of potential critiques of this analysis can be made. For example, third party-concerns exist in traditional forms of property law and form the basis for a number of limiting doctrines. These doctrines can similarly perform a limiting role for patent rights—and in the case of exhaustion, third party interests are often considered to form the basis for the limitation. While limiting doctrines may play a role in mitigating concerns about third party interests and notice, however, the circumstances in which courts are likely to turn away from a property law framework often occur when these limiting doctrines cannot sufficiently capture third party interests that are different in kind from those presented in property law. The misfit is not that there are third party interests at all, but that they are property interests in their own right and their importance is enhanced by a conception of public domain that simply does not exist in traditional private property law. Another potential critique is that third party interests permeate all of patent law. One might wonder, then, if third party property interests require deviations from a property law framework in some contexts, why not in all? In other words, is there any place for a property law framework in patent law at all? For the most part, however, using patents to give notice to third parties and using the exclusive rights framework to resolve disputes among knowledgeable innovators within a field works fairly. The misfit should primarily alarm us when rights boundaries are least clear, the public domain is at risk, and when the property rights of unwitting third parties are at issue.

A. *Courts Deviate from Property Rules When the Misfit Is Greatest*

The Court's shift in *eBay* on the availability of injunctions is one example of the Court dismissing the arguments of property rights proponents. Injunctions have become less readily available because of the importance of interests other than those of patent holders when it comes to patent remedies.²³⁷ The particular circumstances contemplated in Justice Kennedy's concurrence for denying injunctions directly demonstrate the various misfits discussed above. Recall that the concurrence discussed overbroad patents of dubious validity and the potential chill on third party innovation when patents are used to hold up other activities.²³⁸ Of course, this is in part because the unclear boundaries of certain types of patents result in higher notice costs to third parties—a misfit already identified in the literature.²³⁹ But, more than that, overbroad and potentially invalid patents take things from the public domain, through chilling effects on third parties and the costs of identifying, analyzing, and invalidating the patents. These costs are borne by the third parties most interested in using the information protected by an invalid patent, but also by those who benefit from their productive actions. The potential for improvidently granted patents to do harm is greater in patent law than in real property—assigning an estate to the wrong heir harms the particular people involved, but ultimately, the estate is owned by someone. The public's interest in its efficient use doesn't relate to whether it is owned or not, but only that title is clear and its owner can use it. In patent law, in contrast, taking something that ought not be owned and assigning it to a private owner does harm to the world. So while rights in rem may be rights against the world like real property—in patent law, determining the proper scope of that right affects the world more generally. In this way, *eBay's* change to the standard for injunctions may have been driven in part by the importance of the public domain and the importance of having unowned property.

The case exemplifies another misfit: the separation of dominion over the right and the infringing goods. Patent injunctions require infringers to stop acts they have engaged in with their own property. To be sure, it

²³⁷ Wasserman Rajec, *supra* note 114.

²³⁸ *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 396–97 (Kennedy, J., concurring).

²³⁹ *See supra* Section III.A.

is property that embodies the patent holder's right, so this possibility is clearly contemplated by the law. In a sense, then, it is not remarkable. However, it demonstrates how patent law sets itself above property interests in some contexts. Moreover, in the context of complex inventions covered by multiple patents, it becomes an even greater burden on those third parties and a greater drag on innovative activities. This is not to say that injunctions are never warranted—nor is that the law—but merely to point out the higher cost, and the fact that it comes at the expense of the property interests of third parties. Nor are the property interests of third parties the only part of this misfit. Because a patent holder has no dominion over her ideas, there is no inherent notice to a potential infringer that an idea is patented. This is again true for all patents, and part of the reason for the high notice costs, but it is particularly high, again, in the case of complex inventions subject to multiple patents.

The costs to third parties from this separation between thing protected and thing that infringes is clearer in the contexts of patent assertion entities and complex inventions, both mentioned for their potential to cause holdup in *eBay*. The threat of infringing patents might stop other innovators from taking full advantage of information rightly in the public domain. If numerous patents cover a product, avoidance costs grow. Similarly, while market participants may stay abreast of each other's activities and engage in cross-licensing, patent assertion entities are less likely to offer any such negotiations. The potential for hold up can therefore deter innovation. A noninfringer's valid inventive activity should be encouraged, not dampened. Removing the threat of injunction when a patent holder is not a market participant—and therefore not developing or investing in her rights—serves innovation more.

Exhaustion may offer the strongest example of looking to third-party property interests to limit the extent of intellectual property rights. The information that is at the heart of a protected patent and the goods over which third parties exercise dominion are completely separate from each other. Allowing patent owners to apply post-sale use limitations to their goods would stop purchasers from exercising autonomy over their own goods. In contrast to remedies, where an infringer is using their own property to infringe, in the case of exhaustion, the potential infringer is using property that they purchased from the patent holder or her licensees. In other words, having sold or licensed the sale of goods, the

patent owner is now trying to dictate the manner of use to downstream purchasers. In addition to interfering with downstream purchaser's property interests, this poses its own notice problems. A number of exhaustion cases have involved notices attached to goods that purport to limit their use,²⁴⁰ however, the notice problem remains. The Court noted in *Kirtsaeng v. John Wiley & Sons, Inc.*,²⁴¹ the case extending exhaustion to foreign first sales in the copyright context that preceded *Lexmark*, that a contrary rule would result in indistinguishable goods in the United States with differing levels of restrictions. That is, imported goods with use or other restrictions would look exactly the same to consumers as goods first sold in the United States that were unencumbered by any restrictions by virtue of the first sale doctrine.²⁴² If private property is supposed to give notice of property rights through its very existence, and patents already fail in this regard,²⁴³ exhaustion saves it from being an even bigger failure, in which authorized sales don't even protect downstream purchasers from infringement. The expansion of exhaustion, then, can be seen as directly involved with the purpose of granting property owners autonomy over their possessions and avoiding the notice problems that would go along with providing patent owners greater autonomy over embodiments of their ideas.

The Court's language in *Oil States* most clearly eschews a real or private property framework. At the same time, proponents of that framework may have been the most extreme in their rhetoric opposing the outcome, by, for example, claiming that agency review constitutes a "death squad" for "property rights." The importance of efficient post grant review, however, includes fewer of the misfit categories than the examples discussed above, because it involves only the state and the patent holder, and not third-party potential infringers. The Court stated that in the context of a patent grant and review of scope and validity, the patent right was most like a public franchise. However, by taking care to state that the characterization did not apply to other contexts, the Court was highlighting that private property rights are applicable only as

²⁴⁰ See, e.g., *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339, 341–43 (1908) (discussing copyright context); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 518 (1917); *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 709 (Fed. Cir. 1992).

²⁴¹ *Kirtsaeng v. John Wiley & Sons, Inc.*, 568 U.S. 519 (2013).

²⁴² *Id.* at 543–45.

²⁴³ See *supra* Part IV.

required by the context. The Court was therefore both clear that patent rights are not always private property rights and ambiguous in giving no strict guidelines for when patent rights ought not be characterized as property rights.

The misfit analysis offers some explanation for why the Court may have decided as it did. The America Invents Act that authorized broader post-grant review of patents was targeted at some of the same concerns that motivated the Court's opinion in *eBay*. In particular, allowing for less costly administrative review of patents—as opposed to the expensive process of invalidating a patent in a federal court proceeding—decreased costs on third parties of obtaining certainty about the scope and validity of issued patents. Similarly, post-grant review lessened the potential for hold up through overbroad or improvidently granted patents by making it easier to invalidate such patents. While these outcomes don't eliminate the high notice costs to third parties that accompany the patent system, they lessen the cost, and can be expected to concomitantly increase innovation as a result.²⁴⁴ Moreover, as discussed in the context of injunctions, above, third party interests are not merely about who owns entitlements, but also determine what entitlements ought not be owned at all. The potential to invalidate patents that never ought to have been granted allows for that property to be returned to the public domain.

The Court brushed over why and how patents can be a public right in the context of post-grant administrative review but remain a property interest for purposes of takings. However, in the context of takings, the public interest is represented by the government that determines whether a taking is justified. Instead of involving information costs to third parties or other third-party interests, a takings case is primarily one between the government and the holder of a valid property right. For that reason, there is no reason to avoid the private property rights framework. Post-grant review, however, is an attempt to solve the problem of unclear claiming and mistaken granting by determining scope and validity later in time and with the potential involvement of an adversary.

²⁴⁴ While the measures may limit rewards for some patent holders, those same patent holders will benefit from the increased certainty and decreased hold up possibilities of a system that allows for less costly assessment of validity.

B. *The Limits of the Misfit*

One critique of this view of patent rights is that the fact of limitations does not itself distinguish patent law from property law. Property rights are not absolute. It could be that some of the voices encouraging a property rights vision of patents are putting forth a “strong” version of property rights that is inconsistent with the limitations inherent in real property. Certainly, some who favor a property rights framework for patent law do so in order to suggest systematic limits to the rights.²⁴⁵ The Court’s suggestion that injunctions might issue less frequently does not necessarily mean the Court abandoned a property rights framework, entirely. And, the fact that patent rights are exclusive may mean more about the nature of the right than a description of the appropriate remedy.²⁴⁶ In addition, property law itself allows for the denial of injunctions.²⁴⁷

It is true that property law contains numerous limiting principles—and that those principles can be used to mitigate information costs and notice problems to third parties. However, the misfits identified in this Article are of a different scope—in the case of information costs—and different kind—in the case of possession problems—than those addressed by property’s limiting principles. As a result, while they may help point out some of the contexts in which limitations are appropriate, they don’t always capture the full extent of the problem. The weight of the public interest in a strong public domain is much greater than in the context of property, which doesn’t contemplate goods and lands falling out of ownership entirely.

Another critique of the misfit analysis is that it appears to only justify changes that weaken the rights of patent holders. In the examples

²⁴⁵ See, e.g., Carrier, *supra* note 32; Christina Mulligan, *A Numerus Clausus Principle for Intellectual Property*, 80 TENN. L. REV. 235 (2013) (arguing that a numerus clausus limitation on property ought to apply in intellectual property).

²⁴⁶ See Shyamkrishna Balganes, *Demystifying the Right to Exclude: Of Property, Inviolability, and Automatic Injunctions*, 31 HARV. J.L. & PUB. POL’Y 593 (2008) (arguing that the exclusionary function of a patent is to exclude impose a duty on the world rather than to impose the particular remedy of an injunction).

²⁴⁷ Carrier, *supra* note 32, at 73 (“The right to exclude is limited by the laws on encroachments, good faith improvers, boundary line disputes, bona fide purchasers, and public accommodations. . . . [M]odern courts will not enjoin encroachments that are minimal, that would be costly to remove, and that result from innocent mistakes.”).

discussed above, the Court ruled against patent holders or weakened their claims. However, the misfit itself can disadvantage rights holders in ways that suggest a less property-like application of patent law to their benefit, as well. For example, a patent holder's lack of dominion over her ideas—and the third party's corresponding dominion over the property used to infringe—mean that detection costs for a rights holder can be much greater than for an owner of person or real property. The owner of land may detect trespassers in various ways; a vehicle owner will surely become aware when her car has been appropriated by someone without authorization; a patent owner, however, has no immediate warning when someone else is appropriating her idea while using their own property. In previous work, I have suggested that doctrines that allow for indirect infringement and for infringement liability for cross-border acts allow courts to address the difficulty patent holders can have enforcing their rights.²⁴⁸ The view in that article is that doctrines that allow for infringement, unbound—or infringement when fewer than all claim elements are met by one entity or in one jurisdiction—are upholding the innovation-encouraging aspects of patent law, particularly when applied in ways that take account of third-party notice costs, too.²⁴⁹

CONCLUSION

While patent rights are often explained with reference to real property, a number of recent cases have demonstrated that the Supreme Court is open to other analogies and interests. These deviations from a property framework make sense because of the misfit between patent rights and a property rights framework. In particular, courts are less likely to use real property-like notions of trespass when third parties are likely to bear high information costs—even to determine that there is no relevant patent constraining their action—or when third parties have a strong interest in exercising dominion over their own property that is in conflict with patent rights. These outcomes are directly traceable to a particular type of misfit between patent rights and their *in rem* conception. This observation does not merely have predictive value. It grants a normative basis for when patent law ought to move away from

²⁴⁸ Wasserman Rajec, *supra* note 183.

²⁴⁹ *Id.*

property law as the beginning and end of analysis. Because of the misfit between property law's dominion-based rules and patent law's broad reach, curtailing patent law's rights of exclusion make sense in some contexts. This Article lays out a framework of what those contexts might be, and how valuing property rights may occasionally mean valuing the rights of third parties in their property over the interests of patent holders.