
State Patents as a Solution to Underinvestment in Innovation

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I. INTRODUCTION

U.S. states have little money to spare on risky innovations in emerging fields such as alternative energy production and water reclamation.¹ Yet, each year states offer up billions of dollars in financial incentives such as research and development (R&D) tax credits in order to encourage businesses to locate and invest in their jurisdictions.² In granting such incentives, states hope to imitate the success of “innovation clusters” like Silicon Valley.³ However, some

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1. For recent figures on state finances, see AUDREY WALL, *THE BOOK OF THE STATES* ch. 7 (2010), available at <http://knowledgecenter.csg.org/drupal/content/state-budgets-2009-and-2010> (providing figures on State revenues and economic projections).

2. See Louise Story, *The Empty Promise of Tax Incentives: Governments Give Up \$80 Billion a Year, but Jobs Can Still Vanish*, N.Y. TIMES, Dec. 2, 2012, at A1, A32–A33 (collecting new data set and reporting that in 2012 state and local governments gave up \$80 billion in business incentives).

3. “Innovation clusters” are generally defined as regional concentrations of large and small companies that develop creative products and services, along with related firms, suppliers and institutions. Mark Muro & Bruce Katz, *The New ‘Cluster Moment’: How Regional Innovation Clusters Can Foster the Next Economy*, BROOKINGS, Sept. 2010, at 10, available at <http://www.wedc.wa.gov/Download%20files/2010.09-ClusterMoment-Brookings.pdf>. On current state and national policies for growing innovation clusters, see GROWING INNOVATION CLUSTERS FOR AMERICAN PROSPERITY: SUMMARY OF NATIONAL ACADEMY OF SCIENCES SYMPOSIUM ON INNOVATION CLUSTERS AND BEST PRACTICE IN STATE AND REGIONAL INNOVATION INITIATIVES 3–6 [hereinafter “NAS SYMPOSIUM”]. See also ANALEE SAXENIAN, *REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128*, 30–37 (2d ed. 2006) (examining the mobility of executives in a technology cluster); SUZANNE BERGER & THE MIT INDUSTRIAL PERFORMANCE CENTER, *HOW WE COMPETE* 216–22 (2006) (discussing economic effect of globalization on technological innovation); EDWARD GLAESER, *TRIUMPH OF THE CITY* 29–34 (2011) (tracing the creation of Silicon Valley); BRUCE KATZ & JENNIFER BRADLEY, *THE METROPOLITAN REVOLUTION: HOW CITIES AND METROS ARE FIXING OUR BROKEN POLITICS AND FRAGILE ECONOMY* 22, 114–15, n.1 (2013) (discussing cities’ efforts to grow innovation clusters and

argue state R&D tax credits, which are generally based on minimal qualifying criteria and given without strings attached,⁴ are costly for local taxpayers and do not reliably lead to increased investment in new research, let alone true “innovation”⁵ within the state.⁶ Moreover, according to some legal scholars and economists, R&D tax credits have little effect on national levels of research spending; they may simply shift investment from one state to another, producing a zero sum competition for the same business activity.⁷

This Article proposes that state patents, a sui generis innovation incentive with longstanding precedent in history, could provide an effective supplement to U.S. patents and non-patent incentives such as tax credits and research grants for encouraging firms and individuals to invest in developing and commercializing new technologies. Patents could provide states with a new tool for growing regional clusters of

districts).

4. Most states use the same criteria as the federal R&D tax credit, though many states require the research to be performed in the state. See MICHAEL D. RASHKIN, PRACTICAL GUIDE TO RESEARCH AND DEVELOPMENT TAX INCENTIVES: FEDERAL, STATE, AND FOREIGN 275–532 (2007) (providing a comprehensive survey of state R&D tax credits).

5. In this Article I loosely rely on the basic Schumpeterian definition of “innovation” as a temporal process in which inventions (patentable as well as unpatentable) are developed and transformed into useful technologies, products and services with commercial value. See F.M. SCHERER, INNOVATION AND GROWTH: SCHUMPETERIAN PERSPECTIVES 1–31 (1984) (explaining the concept of Schumpeterian innovation); see also Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 CAL. L. REV. 803, 807 (1988) (discussing distinctions between invention and innovation).

6. For example, California’s Legislative Analyst’s Office (LAO) concluded in 2003 that the state should abolish its R&D tax credit. See Legislative Analyst’s Office, *An Overview of California’s Research & Development Tax Credit* (Nov. 2003), http://www.lao.ca.gov/2003/randd_credit/113003_research_development.html. The LAO noted that state-level subsidization of R&D activities is difficult to justify, both because of the difficulty of determining the appropriate level for the credit and because benefits, such as knowledge spillovers, cannot be confined to the state. *Id.* See also Steven Singer, *State Officials Study Abolishing Several Tax Credits*, THE HOUR (Jan. 4, 2011, 12:00 AM), http://www.thehour.com/news/norwalk/state-officials-study-abolishing-several-tax-credits/article_67121baf-2728-57b5-b228-2dc5c0296fec.html (discussing a report by Department of Economic and Community Development casting doubt on efficacy of Connecticut R&D tax credit).

7. Peter D. Enrich, *Saving the States from Themselves: Commerce Clause Restraints on State Tax Incentives for Business*, 110 HARV. L. REV. 377, 396–99 (1996); Walter Hellerstein & Daniel T. Coenen, *Commerce Clause Restraints on State Business Development Incentives*, 81 CORNELL L. REV. 789, 790–93 (1996) (discussing state economic incentives in relation to economic development). See also Daniel J. Wilson, *Beggar Thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits*, 91 REV. ECON. & STAT. 431, 433 fig. 1 (2009) (finding evidence of increased in-state investment but that the net effect on R&D spending as a result of state R&D tax credits is close to zero). *But see* Clayton P. Gillette, *Business Incentives, Interstate Competition, and the Commerce Clause*, 82 MINN. L. REV. 447 (1997) (arguing locational incentives can produce agglomeration advantages at more socially optimal levels than would otherwise occur).

innovators in certain sectors, such as agricultural technology in California or orthopedic devices in Indiana,⁸ and for promoting investment in provisioning of local public goods.⁹ State patents could also provide a variety of other federalism-related benefits, including increased individual choice and a new avenue for patent law reform.¹⁰ Especially given the continued move towards global uniformity, patent law could benefit from the policy experiments that divergent state patent regimes would produce, turning the states into decentralized “laboratories”¹¹ for improving the functioning of patent law.¹²

In making these arguments, this Article proceeds as follows. Part II discusses the key difference between U.S. patents and historic state and colonial patents. Part III explains that, despite the availability of U.S. patents, concurrent state patents can still play a crucial role in promoting

8. Michael E. Porter, *Clusters and the New Economics of Competition*, HARV. BUS. REV., Nov. 1998, at 82.

9. See DENNIS MUELLER, *CONSTITUTIONAL DEMOCRACY* 77–83 (1996) (discussing federalism and its effect on local governments and economies); John C. Yoo, *The Judicial Safeguards of Federalism*, 70 S. CAL. L. REV. 1311, 1402–03 (1997) (arguing state government policies may create “overall efficiency for the entire system in the long run”); ROBERT COOTER, *THE STRATEGIC CONSTITUTION* 105–06, 129–30 (2000) (citing Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956) (discussing local public goods)).

10. See Camilla A. Hrdy, *Dissenting State Patent Regimes*, 3 IP THEORY 78 (2013), available at <http://www.repository.law.indiana.edu/ipt/vol3/iss2/2> (discussing the benefits of state experimentation in granting patents); *infra* Part V.C.

11. See *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) (“It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel, social, and economic experiments without risk to the rest of the country.”).

12. See Lisa Larrimore Ouellette, *Patent Experimentalism*, 1–3, 13–20 (Sept. 15, 2013) (draft) (Yale Law School Information Society Project), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2294774 (presenting a new “experimentalist” approach to global patent laws and a summary of scholarship on the states as “natural experiments” for testing innovation policies). See also John Duffy, *Harmony and Diversity in Global Patent Law*, 17 BERKELEY TECH. L.J. 685, 693–700 (2002) (presenting a variety of arguments in favor of more diverse national patent laws and a detailed discussion of the potential for nations to serve as “laboratories” of policy experimentation); Craig Nard & John Duffy, *Rethinking Patent Law’s Uniformity Principle*, 101 NW. U.L. REV. 1619, 1620–23 (2007) (suggesting that many of the U.S. patent system’s flaws can be linked to over-centralization, and proposing multiple patent appellate courts as a potential solution); Xuan-Thao Nguyen, *Dynamic Federalism and Patent Law Reform*, 85 IND. L.J. 449, 451 (2010) (arguing that a “local patent-reform process” involving participation from federal district court judges and local bar associations has improved the procedures for litigating patents and reduced the costs of patent litigation); Jeanne C. Fromer, *District Courts as Patent Laboratories*, 1 U.C. IRVINE L. REV. 307, 307–22 (2011) (arguing that district courts play an important role in tailoring patent laws to specific industries and technologies); Jeanne C. Fromer, *Patentography*, 85 N.Y.U. L. REV. 1444, 1447–48 (2010) [hereinafter Fromer, *Patentography*] (arguing that, by restricting venue in patent cases to defendants’ principal place of business, district courts can act as “patent laboratories” for the federal circuit, becoming more skilled at adjudicating patent cases in particular technologies or industries).

innovation due to the localized nature of innovations and the communities that produce them;¹³ the fact that some innovation does not require, and may not benefit from, full internalization of the benefits of the innovation;¹⁴ and the continuing problem of underinvestment in certain types of innovations, including but not limited to unpatentable inventions.¹⁵ Part IV discusses one potential version of a state patent system, loosely based on the four distinguishing features of historic state and colonial patents: local utility requirements, flexible standards of novelty, local working requirements, and tailored scopes and term lengths.

Part V discusses current legal limits on state patents, including TRIPS, antitrust law, and, most significantly, the IP Clause and the U.S. Patent Act. The Supreme Court has held that states cannot grant “patent-like” rights against the world that would potentially compete with U.S. patents as incentives to invest in a particular endeavor or a particular type of endeavor.¹⁶ As explained in Part V.C., this rule should be overruled or significantly limited in its scope.¹⁷ Instead, this Article proposes a new approach to preemption of state patents that asks whether a state patent directly conflicts with an existing U.S. patent or violates the dormant Commerce Clause.¹⁸ As explained in Part V.D., the dormant Commerce Clause’s more deferential, political process-based approach to judicial review, which focuses mainly on protecting out-of-state businesses and consumers from negative externalities produced by state laws, more

13. See, e.g., BERGER, *supra* note 3, at 216 (discussing reasons for outsourcing and why certain production jobs remain in the U.S.).

14. Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 281 (2007).

15. See Douglas G. Lichtman, *The Economics of Innovation: Protecting Unpatentable Goods*, 81 MINN. L. REV. 693, 693 (1997) (proposing allowing state anti-copying laws to promote investment in unpatentable goods); Arthur Miller, *Common Law Protection for Products of the Mind: An Idea Whose Time Has Come*, 119 HARV. L. REV. 703, 703 (2006) (proposing stronger state laws for prohibiting copying of undeveloped ideas); Ben Roin, *Unpatentable Drugs and the Standards of Patentability*, 87 TEX. L. REV. 503, 504 (2009) (proposing FDA-administered periods of exclusivity for unpatentable drugs); Ted Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 341 (2010) [hereinafter Sichelman, *Commercializing Patents*] (proposing a new system of commercializing patents to facilitate commercialization of unworked U.S. patents).

16. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151, 160–61, 165 (1989) (discussing dangers of state-created “patent-like” rights). For a discussion of the Court’s restrictive stance in *Bonito*, see Lichtman, *supra* note 15, at 697–700, 714–15 (arguing that *Bonito* was wrongly decided, and that states should be able to prevent at least some forms of copying of unpatentable innovations in particularly vulnerable markets).

17. See Lichtman, *supra* note 15, at 714 (discussing the dangers of a strict approach to preemption).

18. An additional limit, discussed in Part V.D.1, *infra*, is that an inventor cannot rely on a state patent and a federal patent at the same time for the same invention.

precisely addresses the risks of state patents than the patent preemption doctrine.¹⁹ The Article then provides a simple, three-part framework for individualized judicial review of state patents under the dormant Commerce Clause. In sum, this new approach would help courts weed out overly burdensome patents, while still allowing states to exercise significant autonomy in granting patents and deriving efficient policies for promoting local innovation.

II. AMERICA'S DUAL PATENT REGIMES

State patents are similar to U.S. patents in that they entail the right to exclude others from using a patentable or unpatentable innovation within the jurisdiction, with the general purpose of rewarding and incenting generation and development of innovations.²⁰ However, unlike U.S. patents, state patents can be granted for innovations that do not meet federal criteria of patentability and they may have a variety of features—such as local working clauses and tailored term lengths—that distinguish them from their federal counterparts. This part explains the key differences between modern U.S. patents and historic state and colonial patents, why the Framers chose to transition to a national patent system in 1788, and finally why states largely stopped granting patents once federal patents became available.

A. *U.S. Patents*

The IP Clause gives Congress power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”²¹ The Patent Act, first passed in 1790, gives inventors the opportunity to obtain exclusive rights to make, use, and sell inventions meeting the Patent Act’s criteria of patentability.²² Today, the main

19. See, e.g., Gillette, *supra* note 7, at 450 (explaining that the dormant Commerce Clause is concerned mainly with the negative effects that state business incentives can produce for out-of-staters, who are unprotected by the political process in the state that granted the incentive).

20. See *Bonito Boats, Inc.*, 489 U.S. at 158 (distinguishing state “patent-like” rights such as Florida’s anti-molding statute from state unfair competition laws based on the reasoning that, “[i]n contrast to the operation of unfair competition law, the Florida statute is aimed directly at preventing the exploitation of the design and utilitarian conceptions embodied in the product itself” in order “to create an inducement for the improvement of boat hull designs”).

21. U.S. CONST. art. I, § 8, cl. 8.

22. See Patent Act of Apr. 10, 1790, ch. 7, 1 Stat. 109 (granting various rights to inventors); Patent Act of Feb. 21, 1793, ch. 11, 1 Stat. 318 (clarifying patent rights and the method to resolve

patentability criteria are novelty, nonobviousness, and utility.²³ Inventors also must disclose their inventions in sufficient detail for “one of ordinary skill in the art” to replicate and practice it.²⁴

According to modern patent theory, patents promote innovation by providing an incentive to invent, an incentive to commercialize, and an incentive to disclose technical information to the public.²⁵ But U.S. patents represent a uniquely hands-off form of innovation incentive.²⁶ U.S. patents are standardized, one-size-fits-all rights granted based on neutral criteria like novelty and nonobviousness.²⁷ An applicant cannot obtain a patent for inventions that do not meet these criteria, regardless of the invention’s potential value to society.²⁸ Moreover, U.S. patent holders have no affirmative duty to practice the invention anywhere, let alone within a particular geographical area.²⁹ In fact—due to global harmonization of patent laws that make it easier for patent holders to extend exclusive rights into foreign jurisdictions—inventors are just as likely to market their inventions in other nations as in the United States.³⁰

For these reasons, although U.S. patents create incentives to develop innovations that can be protected and monetized in as many markets as

patent disputes).

23. See 35 U.S.C. §§ 101–103 (2006) (outlining patent criteria).

24. See *id.* § 112 (requiring inventors to provide adequate details of product for replication).

25. S. SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF S. COMM. ON THE JUDICIARY, 85TH CONG., 20–21 (Comm. Print 1958) (written by Fritz Machlup) (summarizing economic justifications for patents).

26. See ROBERT P. MERGES & JOHN F. DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 6–7 & n.16 (4th ed. 2007) (explaining that, from the start, U.S. patent law was based on a “minimalist” view of government involvement in the economy and only “indirectly” rewarded innovation); Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247, 248–49 (1994) (explaining that patent law operates according to legal doctrine and not through typical administrative means).

27. 35 U.S.C. §§ 102–103; see also Michael W. Carroll, *One for All: The Problem of Uniformity Cost in Intellectual Property Law*, 55 AM. U. L. REV. 845, 861–78 (2006) (laying out the problem of “uniformity cost” in IP and discussing its contours in detail for each of the IP regimes, including patent law).

28. See Oren Bracha, *The Commodification of Patents 1600–1836: How Patents Became Rights and Why We Should Care*, 38 LOY. L.A. L. REV. 177, 243 (2004) [hereinafter *Commodification of Patents*] (observing that, unlike modern U.S. patents, early patent privileges were focused on the “public good” and “not limited to a narrow conception of economic or technological innovation”).

29. The Patent Act requires, at most, only a “constructive reduction” in the application, which means disclosure of the technology that would allow one of ordinary skill in the art to reduce the invention to practice. Jeanne C. Fromer, *The Layers of Obviousness in Patent Law*, 22 HARV. J.L. & TECH. 75, 89–90 (2008).

30. For a discussion of the Paris Convention Treaty and the Patent Cooperation Treaty (PCT), see Dongwook Chun, *Patent Law Harmonization in the Age of Globalization: The Necessity and Strategy for a Pragmatic Outcome*, 93 J. PAT. & TRADEMARK OFF. SOC’Y 127, 138–44 (2011).

possible, they do not create any particular incentive to invest in innovations of importance to certain communities; nor do they create obligations for patentees to practice their inventions in a particular locality.

B. *State and Colonial Patents*

The patents granted by the states and American colonies prior to the Constitution provided similar economic incentives to modern U.S. patents but with significant differences.³¹ State patents conferred the exclusive right (or privilege) to use an invention or innovation in the state.³² The main purpose was to encourage local use of technology that would likely benefit the local community.³³ Four essential features differentiated state patents from U.S. patents.

First, state patents had a local utility requirement, which indicated the state believed the invention would add value to the community and improve standards of living.³⁴ For example, in 1787, Pennsylvania granted a twenty-one year patent for an angle-measuring device that the inventor attested would supply an “instrumental solution of all cases of trigonometry” that might arise in surveying land in the state.³⁵

Second, due to flexible standards of patentability, states had

31. On state and colonial patents in early America, see BRUCE BUGBEE, *GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW* 57–103 (1967); Edward C. Walterscheid, *The Early Evolution of the United States Patent Law: Antecedents* (5 Part I), 78 J. PAT. & TRADEMARK OFF. SOC'Y 615, 616 n.4 (1996) (noting that early state and colonial grants of limited monopoly rights were not patents for “inventions” in the modern sense).

32. Camilla A. Hrdy, *State Patent Laws in the Age of Laissez Faire*, 28 BERKELEY TECH. L.J. 45, 58–59 (2013) [hereinafter Hrdy, *State Patent Laws in the Age of Laissez Faire*].

33. Oren Bracha, *Owning Ideas: A History of Anglo-American Intellectual Property* 97–103 (June 2005) (unpublished Ph.D. dissertation, Harvard Law School) [hereinafter *Owning Ideas*], available at www.utexas.edu/law/faculty/obracha/dissertation. On privileges and privilege-granting regimes, see Mario Biagioli, *Patent Republic: Representing Inventions, Constructing Rights and Authors*, 73 SOC. RES. 1129, 1138 (2006) (arguing that early privileges emphasized local utility rather than disclosure of new information); Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, 92 CORNELL L. REV. 953, 968 (2007) (describing the continued use of the term “privilege” despite the change in the nature of patents). See also Sean O'Connor & Ted Sichelman, *Patents as Promoters of Competition: The Guild Origins of Patent Law in the Venetian Republic*, 49 SAN DIEGO L. REV. 1267, 1268–69 (2012) (noting that, “[u]nlike today’s patent systems—which solely encompass negative rights to exclude against the backdrop of a generally free market,” Venetian patents provided a positive right “which allowed the patent holder to compete in an otherwise regulated system dominated by the guilds”).

34. See *Owning Ideas*, supra note 33, at 100.

35. See BUGBEE, supra note 31, at 91 (describing George Wall, Jr.’s 1787 Pennsylvania patent).

discretion to grant patents for inventions that were already being used in foreign jurisdictions so long as the invention was new to the colony and a patent might give someone an incentive to develop it and make it locally available.³⁶ If there was a standard of patentability, the important question was not whether an invention was new, let alone “nonobvious.” Instead, it was whether a patent was necessary for inducing the use of the invention in the jurisdiction.³⁷

Third, as part of their focus on local development, state patents imposed various local working requirements that obligated patentees to successfully develop and practice their technology in the granting state, or at least to allow others to do so for a reasonable price.³⁸ Nearly all colonial patents, and many state patents, contained explicit local working clauses that required perfection of an invention within a certain timeframe.³⁹ Some state patents even required that patentees teach their art to local workers.⁴⁰ And nearly all came with fixed maximum penalties for infringement, which meant that others knew how much it would cost to infringe the patent and would not necessarily have to forego their own infringing operations in the state as a result of a patentee’s refusal to license his invention on reasonable terms.⁴¹

The final feature distinguishing state patents from U.S. patents was that their terms and scopes were not standardized. Rather, they were specifically tailored to meet the needs of the patentee and the particular technology at issue, with patent terms oscillating between seven and twenty years.⁴² In short, as Oren Bracha wrote, early patent-granting

36. See *Owning Ideas*, *supra* note 33, at 99 (explaining the concept of “invention” employed in colonies signaled the introduction of a new trade or industry). For a general discussion of “patents of importation,” see Edward C. Walterscheid, *Patents and Manufacturing in the Early Republic*, 80 J. PAT. & TRADEMARK OFF. SOC’Y 855, 860–78 (1998).

37. See Biagioli, *supra* note 33, at 1142–444 (explaining that under a privilege system, the focus was “novelty relative to a place”); MERGES & DUFFY, *supra* note 26, at 6 (“Under the original patent systems, the society’s benefit was the introduction of a new art or technology into the country.”).

38. BUGBEE, *supra* note 31, at 57–103. See also *Owning Ideas*, *supra* note 33, at 103 (discussing colonial working clauses and apprentice clauses).

39. For example, Henry Guest’s five-year New Jersey patent on a method of making whale oil granted in 1780 required him to construct his plant for making the oil within the state and commence operations within eight months. BUGBEE, *supra* note 31, at 86.

40. See, e.g., *id.* at 100 (describing Oliver Evans’ 1789 New Hampshire patent, which required Evans to arrange for a trained maker of the invention to reside within the state until the seven-year term expired).

41. *Id.* at 84–103 (cataloguing predetermined infringement penalties for state patents).

42. *Owning Ideas*, *supra* note 33, at 100–01. Notably, state patents in the 1780s, presumably following the British practice, began to settle on fourteen-year periods. BUGBEE, *supra* note 31, at 93–94.

authorities were “in charge of a specific calculus of the public good in each case, considering whether a patent was justified and what its specific terms should be.”⁴³

C. *State Patents Following Ratification of the Constitution*

If states already granted their own patents, why did the Framers decide to give the new national government the specific power to grant its own patents in the Constitution?⁴⁴ The main reason, according to historians of U.S. patent law, is that state patents did not span a broad enough jurisdiction to effectively protect inventors from copying once the states began trading more actively with one another toward the end of the 18th century.⁴⁵ This situation prompted American inventors to lobby for national protection.⁴⁶ At least some of the Framers agreed, as evidenced by James Madison’s famous comment in the Federalist No. 43, that, due to their limited jurisdiction, “[t]he States cannot separately make effectual provision for either of the cases [patent or copyright].”⁴⁷ No one objected when the IP Clause gave the national government the power to grant patents.

Nonetheless, when drafting the IP Clause, the Framers deliberately left states independent authority to grant patents.⁴⁸ The extent to which states could exercise this authority without conflicting with federal patent law remained a contentious issue. Several states continued to grant patents even after Congress passed the Patent Act in 1790;⁴⁹ and the

43. *Owning Ideas*, *supra* note 33, at 101.

44. U.S. CONST. art. I, § 8, cl. 8.

45. See EDWARD C. WALTERSCHEID, NATURE OF THE INTELLECTUAL PROPERTY CLAUSE 76–77 (2002) [hereinafter NATURE OF THE IP CLAUSE] (summing up the defects of a state run patent system); BUGBEE, *supra* note 31, at 90 (noting the limits of state patents and inventors’ attempts to buy up patents from multiple states).

46. See Michael F. Martin, *The End of the First-to-Invent Rule: A Concise History of Its Origin*, 49 IDEA 435, 461–66 (2009) (describing the influence of inventors like John Fitch who advocated for federal patents to protect their rights in their inventions).

47. THE FEDERALIST NO. 43 (James Madison), available at <http://www.constitution.org/fed/federa43.htm>.

48. *Goldstein v. California*, 412 U.S. 546, 560 (1973). See U.S. CONST. art. I, § 8, cl. 8 (failing to mention state authority to grant patents); Hrды, *State Patent Laws in the Age of Laissez Faire*, *supra* note 32, at 71–75 (explaining that the IP Clause did not grant an exclusive power to the federal government); Maya Pollack, *Unconstitutional Incontestability? The Intersection of the Intellectual Property and Commerce Clauses of the Constitution: Beyond A Critique of Shakespeare Co. v. Silstar Corp.*, 18 SEATTLE U. L. REV. 259, 301 (1995) (noting decision to leave states with concurrent power to grant IP rights).

49. P. J. Federico, *State Patents*, 13 J. PAT. & TRADEMARK OFF. SOC’Y 166, 167–69 (1931); BUGBEE, *supra* note 31, at 102.

second Congress did not preempt states from doing so in the second Patent Act of 1793.⁵⁰ Instead, Congress clarified that inventors seeking U.S. patents had to relinquish any state patents they already possessed for the same invention.⁵¹ In 1812, the New York Supreme Court, led by Chief Justice James Kent, unanimously upheld Robert Livingston and Robert Fulton's New York patent on the steamboat.⁵² According to Kent's oft-cited opinion in *Livingston v. Van Ingen*, depriving states of autonomy to grant patents "would [leave] the states in a condition of singular and contemptible imbecility."⁵³

In *Gibbons v. Ogden*, Thomas Gibbons challenged the steamboat patent in federal court.⁵⁴ In his oral argument, the Attorney General of the United States William Wirt argued that, based on Congress's powers under the IP Clause and the Patent Act, states' powers to grant patents were fully preempted.⁵⁵ But Chief Justice John Marshall ignored the Attorney General's arguments and declined to overrule or even address Justice Kent's strongly worded support for concurrent state patent powers.⁵⁶ Nearly ten years later, future Supreme Court Justice Joseph Story explicitly endorsed Kent's view of concurrent power in his 1833 *Commentaries on the United States Constitution*.⁵⁷ The Supreme Court cited to Kent's opinion as late as 1878.⁵⁸ *Livingston's* holding that states have concurrent constitutional authority to grant patents has never been expressly overruled.⁵⁹

III. THE NEED FOR STATE PATENTS TODAY

This Article does not dispute the necessity of a broad and uniform

50. Patent Act of Feb. 21, 1793 § 7, ch. 11, 1 Stat. 318-323.

51. NATURE OF THE IP CLAUSE, *supra* note 45, at 437 & n.8 (describing the 1793 Act's voidance clause).

52. *Livingston v. Van Ingen*, 9 Johns. 507, 581-85 (N.Y. 1812) (James Kent, C.J.).

53. *Id.* at 584.

54. *Gibbons v. Ogden*, 22 U.S. 1 (1824) (Marshall, C.J.).

55. *Id.*

56. *Id.* at 221.

57. See JOSEPH STORY, COMMENTARIES ON THE CONSTITUTION OF THE UNITED STATES, Book III, Ch. XIX, at 79 (Boston, 4th ed. 1873) (agreeing with Kent that states can concurrently grant patents to introducers and "possessors" of technology).

58. See *Patterson v. Kentucky*, 97 U.S. 501, 508-09 (1878) (citing *Livingston v. Van Ingen* 9 Johns. 507 (N.Y. 1812)) (explaining that the holding of *Livingston* is entitled to "great weight").

59. See *Bonito Boats Inc. v. Thunder Craft Boats Inc.*, 489 U.S. 141, 154, 165 (1989) (noting the IP Clause does not deprive states of the power to use IP laws to promote intellectual creation in their own territories).

national patent system. Given the externalities associated with the creation of new inventions and the difficulty of protecting them in an interstate market—along with the heavy administrative cost of multiple state patent offices—it would be expensive, inconvenient, and socially wasteful if inventors had to rely *solely* on a patchwork of state rights.⁶⁰ Given that the U.S. government now grants patents of national jurisdiction, and U.S. states have not concurrently granted patents since the early 19th century, it might be assumed that concurrent state patent regimes are unnecessary and obsolete. Since most inventions can potentially be marketed in interstate commerce, why would any inventor seek only state-level exclusivity? Since states cannot internalize all the benefits of the research and information produced by state patents, why would any state agree to grant such a right? Finally, if states did start granting patents, why should federal courts permit such laws to survive preemption under the Patent Act and the dormant Commerce Clause?

The Supreme Court indirectly addressed these questions in 1973 in *Goldstein v. California*, where the Court had to decide whether a California law could prohibit unauthorized copying of sound recordings, even though the Copyright Act was silent on this issue.⁶¹ Upholding the California law, the Court explained that states possess concurrent authority to grant intellectual property (IP) rights in their own jurisdictions.⁶² Although the Court distinguished prior case law respecting states' concurrent authority in patent law,⁶³ in reaching its

60. NATURE OF THE IP CLAUSE, *supra* note 45, at 76–77. See also Duffy, *supra* note 12, at 693–703 (listing the three major justifications for global harmonization of patent law as the inability of localized patent systems to protect technical information in global markets, the inefficiencies associated with multiple patent offices reviewing and granting patents, and the risk of destructive protectionism); Chun, *supra* note 30, at 130–37 (asserting that the major benefits of patent law harmonization are to ensure patent protection in foreign markets and to reduce the costs of patenting and doing business).

61. 412 U.S. 546, 551–52 (1973).

62. *Id.* at 571 (holding that California exercised a power “retained under the Constitution”). See Arthur Miller, *Common Law Protection for Products of the Mind: An Idea Whose Time Has Come*, 119 HARV. L. REV. 705, 748–49 (2006) (discussing *Goldstein*'s implications for preemption of state laws prohibiting copying of undeveloped ideas).

63. Distinguishing its prior decisions in *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225 (1964), and *Compco Corp. v. Day-Brite Lighting*, 376 U.S. 234 (1964), the Court explained that U.S. copyright law did not address sound recordings at all, and never said they could not be copyrighted. *Goldstein*, 412 U.S. at 569. In contrast, the Court stated, the Patent Act “indicated not only which articles in this particular category Congress wished to protect, but which configurations it wished to remain free.” *Id.* The Court provided no basis for this distinction, simply suggesting that the Patent Act creates a negative inference that any objects that do not meet the federal standards of patentability cannot be similarly protected by state laws—even though the Patent Act, unlike the Copyright Act, has no express preemption provision.

decision, the *Goldstein* Court made several observations that explain why states should retain some autonomy to grant their own patents.

A. *The Local Nature of Innovation*

The Court's first observation was that, even in an interstate and global economy, not all innovations are of national importance, or of equal importance to all states.⁶⁴ Quoting Chief Justice John Marshall in *Gibbons*, the Court stated that "the basic principle of federalism" is that the federal government's

'action is to be applied to all the external concerns of the nation, and to those internal concerns which affect the States generally; but not to those which are completely within a particular State, which do not affect other States, and with which it is not necessary to interfere, for the purpose of executing some of the general powers of the government.'⁶⁵

This distinction between objects of national and local importance is highly relevant to patent law as well as copyright. In explaining that the IP Clause does not preclude states from protecting expressive works like sound recordings, the Court explained that, although the Clause "recognizes the potential benefits of a national system, it does not indicate that all 'writings' are of national interest or that state legislation is, in all cases, unnecessary or precluded."⁶⁶ To the contrary, the Court stated, "[t]he patents granted by the States in the 18th century show . . . a willingness on the part of the States to promote those portions of science and the arts which were of local importance."⁶⁷

Today, even more so than in the 1800s, technological innovation is a local enterprise, both with respect to innovations themselves and with respect to the communities that produce innovation.⁶⁸ Many examples of

64. *Id.* at 557–58.

65. *Id.* at 554 (quoting *Gibbons v. Ogden*, 9 Wheat. 1, 195 (1824)).

66. *Id.* at 556–57.

67. *Id.* at 557.

68. *See id.* at 557–58 (noting that increased diversity across the 50 states today means some innovations will be of "purely local importance"). *See also* Miller, *supra* note 62, at 749 ("[T]he fruits of intellectual labor constitute a large share of our national wealth, necessitating careful policy formulation. . . . [T]he industries associated with this vast creative output are distributed unevenly throughout the United States—with some states, like California and New York (and more recently Illinois and Texas), forming the home bases for a disproportionate number of creativity-driven enterprises and a large share of the idea marketplace."). John Duffy has also observed that an important limitation on the argument that patent externalities justify a global patent regime is that

geographically localized innovations exist in the agricultural sector, for instance, such as the special rootstock grafts designed by researchers at the University of California, Davis to combat nematodes and fungi that decimate grapes in Northern California.⁶⁹ The oil and gas industry, which generally relies on immobile resources, is full of examples, such as new drilling methods like “fracking.”⁷⁰ Perhaps most importantly from the perspective of cash-strapped states and cities, many of the technologies related to infrastructure and “local public goods” (e.g. parks, fire prevention, crime prevention) are specific to and used in a particular geographic location.⁷¹

The communities responsible for the generation of innovation are also often geographically localized.⁷² As Michael Porter puts it, from the aircraft equipment and design companies located in Seattle, to the companies researching advanced materials in Pittsburg, “[t]oday’s economic map of the world is dominated by . . . clusters.”⁷³ Many of these clusters are centered specifically around universities in order to benefit from proximity to talent and the potential for knowledge spillovers.⁷⁴ As Suzanne Berger and her team at MIT recently

technical knowledge developed as a result of a patent system does not necessarily benefit everyone in the world equally. Duffy, *supra* note 12, at 699. Jeanne Fromer’s data on patent litigation in the district courts shows that there is “a good deal of technology-specific clustering of patent litigation happening in the district courts.” Fromer, *Patentography*, *supra* note 12, at 1496.

69. The rootstock grafts were developed at the University of California, Davis. See Michael Porter, *International Perspective on Young Vine Decline*, PRACTICAL WINERY & VINEYARD JOURNAL, May/June 2001, available at <http://www.practicalwinery.com/mayjun01p14.htm>. Many historic state patents were for inventions related to agriculture. See also BUGBEE, *supra* note 31, at 92 (cotton), 93 (rice), 99 (wheat, grain). With thanks to Robert Merges for this hypothetical.

70. Ever since “fracking” was developed, it has been of immense importance to the economies of states such as Texas and states that harbor the Marcellus Shale, a deep repository that runs through West Virginia, Ohio, Pennsylvania, and New York. Notably, fracking was not an innovation independently developed in the private sector but was aided by support from the federal government and companies that took a long time to implement fracking due to high cost and risk. Kevin Begos, *Fracking Developed with Decades of Government Investment*, THE HUFFINGTON POST, Sept. 23, 2012, http://www.huffingtonpost.com/2012/09/23/fracking-developed-government_n_1907178.html.

71. Generally, the federal government supplies pure “public goods” that are “nonrivalrous” and “nonexcludable,” such as national defense. COOTER, *supra* note 9, at 105. However, when public goods have a location, such as a bridge or a road, it is often more efficient for local governments to provide them. *Id.* at 105–06. See also Sean Sloan, *Transportation Finance & the States: Stopgap Solutions & Indecision Spell an Uncertain Future*, in THE BOOK OF THE STATES 538–42 (2010) (discussing states’ struggles to fund infrastructure projects).

72. See BERGER, *supra* note 3, at 216 (discussing clustering of firms in certain locations).

73. See Porter, *supra* note 8, at 78, 82 (showing a graphic map of clusters).

74. See BERGER, *supra* note 3, at 216 (discussing the clustering effects produced by universities, such as the information technology sector that has grown up around Silicon Valley, or the biotechnology sector that thrives off research and brainpower at Harvard and MIT); GLAESER, *supra* note 3, at 29–30 (describing how Stanford helped transform the small agricultural community

documented, innovations in advanced countries often rely on a variety of resources unique to particular locations, including “immobile assets” like coal mines that “are stuck in the ground”; “expert communities with intense face-to-face daily exchanges of knowledge”; or “other firms whose capabilities [the cluster communities] need to combine with their own.”⁷⁵

Thus, whether an innovation is useful only within a small jurisdiction (e.g. the rootstock grafts in Northern California), or is more useful in one jurisdiction than in another (e.g. a manufacturing method used by automobile manufacturers in Detroit, Michigan), a patent from the state could be highly valuable to the owner or licensee, either because use of the invention outside the state is unlikely or because use within the state is so valuable to others.⁷⁶ Moreover, given the potential import of certain innovations in certain areas, states might have incentives to grant patents as an impetus to generating and developing locally important innovations in the state, just as they did in the pre-Constitution era.⁷⁷

B. Innovators Do Not Need Full Internalization of Benefits

Of course, state patents would not allow patentees to enforce their patents or demand license fees outside the state. They would not enable internalization of profits to the same extent as U.S. patents. But this leads to the *Goldstein* Court’s second observation: the limited jurisdiction of state-level protections does not necessarily render an exclusive right worthless to the recipient; it merely reduces its economic value.⁷⁸ Even though state citizens willing to travel across state lines can

in Santa Clara into a technology hub); *id.* at 224 (describing how local universities serve as anchors for urban economies in Boston, Minneapolis, and Atlanta); Peter Lee, *Patents and the University*, DUKE L.J. (forthcoming 2013) (discussing the relationship between universities and patenting).

75. BERGER, *supra* note 3, at 216.

76. Daniel Kazhdan pointed out to me that the Supreme Court inadvertently recognized the existence of innovations of local import in a completely different context. In a time before the establishment of the Federal Circuit, the Court sometimes had to decide whether to review a particular patent infringement case even when there was no circuit split. In deciding to review the case anyway, the Court stated that some industries are so concentrated in certain geographical locations that patents covering technologies used in those industries were *simply unlikely to produce litigation in other circuits*. See, e.g., *Muncie Gear Works v. Outboard, Marine & Mfg. Co.*, 315 U.S. 759, 766 (1942) (deciding to review a Seventh Circuit decision respecting a patent on an invention to prevent cavitation for water-cooled outboard motors).

77. *Goldstein v. California*, 412 U.S. 546, 557 (1973).

78. *Id.* at 558 (“The situation is no different from that which may arise in regard to other state monopolies, such as a state lottery, or a food concession in a limited enclosure like a state park; in each case, citizens may escape the effect of one State’s monopoly by making purchases in another

potentially escape the reach of a state right, exclusivity within the state can “still serve to induce new artistic creations within that State—the very objective of the grant of protection.”⁷⁹ That is, a state IP right can still serve the purpose for which it was designed even if it does not entail profits on a national scale.

This observation is borne out by research suggesting innovators can potentially thrive in purely local markets.⁸⁰ It also makes sense from the perspective of innovation policy theory. In their important article, *Spillovers*, Brett Frischmann and Mark Lemley explained that the classic economics view of a “spillover”—a failure to internalize all the benefits of one’s activity that is likely to lead to the decision not to invest in the activity—does not apply in the same way when the uncompensated feature of a person’s activity is an innovation. The reason is that innovation is uniquely conducive to “productive reuses” and may proceed at a more efficient rate in the presence of decentralized use and competition.⁸¹ Thus, its value to society is so much greater than its value to the initial creators that allowing creators to fully internalize all the benefits of their inventions could actually impede the progress of innovation in the long run. From the perspective of innovation policy, this means that:

[While] we need some ex ante incentive to innovate, we don’t need (and don’t particularly want) full internalization of the benefits of an invention. As long as we get enough incentive, the fact that other benefits aren’t captured by the innovator doesn’t impose any real cost

area or another State.”).

79. *Id.* at 558–59.

80. See, e.g., Motoyama et. al., *Leveraging Regional Assets: Insights from High-Growth Companies in Kansas City*, KAUFMAN FOUNDATION, July 2013, at 24 (noting that one-third of the entrepreneurs they interviewed provided products and services only in Kansas City or selected nearby areas and were still able to achieve scale and growth).

81. Frischmann & Lemley, *supra* note 14, at 281 (“There is no reason to believe that ownership of an idea by any one individual will best encourage that productive reuse. Innovation is cumulative and is generally spurred by decentralized competition. This is particularly likely to be true of an innovation subject to productive reuse, since no one owner can capture the full value of that innovation anyway. If a company can lock up an invention entirely, the company will have suboptimal incentives to improve it. The owner may (or may not) improve on the invention, but no one else will be in a position to do so.”) (discussing prior work by Frischmann). See Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 872–75 (1990) (noting that a single right holder may underdevelop a given invention’s potential); Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, 31–32 (1991) (discussing the potential problems patents pose for cumulative innovation).

on innovation, and may even contribute to innovation.⁸²

Unlike U.S. patents, state patents do not permit monopolization of knowledge at the national level.⁸³ To the contrary, by allowing innovation spillovers in other states—and even facilitating them in cases where states demand highly detailed patent disclosures—state patents could provide the right amount of incentive for those innovators who choose them over U.S. patents,⁸⁴ while also stimulating productive re-uses in other states.⁸⁵

C. *Many Innovations Remain Unprotected by Federal Law*

The *Goldstein* Court's final observation, which may be the most important when it comes to deciding whether states should still be able to grant patents, is that many innovations of potential social utility remain unprotected, or insufficiently protected, by federal law.⁸⁶ As Douglas Lichtman observed in his article objecting to the Supreme Court's preemption of state patent protections, just because an innovation fails to meet U.S. patent law's standard of patentability, that does not necessarily make it undeserving of protection from competition, whether through anti-copying laws or through limited periods of exclusivity.⁸⁷ Likewise, when an invention *is* patentable, but a U.S. patent, bounded by federal rules regarding subject matter, scope and term length, does not provide

82. Lemley & Frischmann, *supra* note 14, at 276.

83. The *Goldstein* Court also noted that the failure to allow full internalization could be a potential upside rather than a downside of state copyright protections, stating:

When Congress grants an exclusive right or monopoly, its effects are pervasive; no citizen or State may escape its reach. As we have noted, however, the exclusive right granted by a State is confined to its borders. Consequently, even when the right is unlimited in duration, any tendency to inhibit further progress in science or the arts is narrowly circumscribed.

412 U.S. at 560–61.

84. As explained in the next part, inventors must choose between U.S. and state patents. This has been the case since 1793.

85. Hrdy, *supra* note 10, at 91–92.

86. 412 U.S. at 558 (“Since the subject matter to which the Copyright Clause is addressed may thus be of purely local importance and not worthy of national attention or protection, we cannot discern such an unyielding national interest as to require an inference that state power to grant copyrights has been relinquished to exclusive federal control.”).

87. See Lichtman, *supra* note 15, at 714. See generally Arthur R. Miller, *Common Law Protection for Products of the Mind: An “Idea” Whose Time Has Come*, 119 HARV. L. REV. 705 (2006) (proposing stronger common law protections for undeveloped ideas that cannot be patented); see also Roin, *supra* note 15, at 564–68 (proposing FDA-administered periods of exclusivity for unpatentable drugs).

sufficient incentives to actually practice and commercialize it, this does not indicate that commercialization of the invention would not be beneficial to society or to a state in which the invention might be particularly useful.⁸⁸

In an ideal world no government intervention would be necessary to ensure investment in developing and deploying socially valuable innovations in the states where they have most value. But investment in innovation is particularly vulnerable to market failure, due both to the difficulty of appropriating the value of information in the absence of legal protection,⁸⁹ and due to high level of risk involved in investing in new technologies or business models.⁹⁰ As scholars like Edmund Kitch and Ted Sichelman emphasize, the costs of generating an invention are just the beginning of a long road.⁹¹ The capital required to commercialize and develop subsequent improvements can be tremendous and require high prospective returns to justify investment.⁹² When the risk is too great capital resources run dry, and innovators generally turn to private parties such as venture capital firms (VCs) with higher risk thresholds and plentiful capital.⁹³ But commercially minded VCs may require assurances that a technology has a chance to obtain market power and earn supernormal returns.⁹⁴ A U.S. patent can make a difference as it increases the company's chances of obtaining market power; but it is

88. On underdevelopment of U.S. patents, see Sichelman, *Commercializing Patents*, *supra* note 15, at 355–80; *see also* 35 U.S.C. §§ 102 (novelty), 103 (nonobviousness), 112 (specification), 154 (twenty-year term) (2013).

89. *See* Kenneth Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609, 609–25 (UMI 962) (explaining that the difficulty of valuing and selling information without revealing it necessitates some form of legal protection).

90. *See* Brett Frischmann, *Innovation and Institutions: Rethinking the Economics of U.S. Science and Technology Policy*, 24 VT. L. REV. 347, 373–76 (2000) (discussing innovation market failures and types of incentives the federal government provides to correct those market failures).

91. Edmund M. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977). Like Sichelman, Kitch is cited here for his emphasis on the import of patents for incenting commercializing and improving upon inventions, not necessarily for his theory that broad and early patents are the best means to achieve this. *See* Ted Sichelman, *Markets for Patent Scope*, 1 IP THEORY 42, 44 (2010) (arguing that critiques of Kitch's theory “mostly ignor[e] Kitch's concerns about commercialization”).

92. *See* Sichelman, *Commercializing Patents*, *supra* note 15, at 354 (contending that just as invention “produces information subject to free riding, so does commercialization [and that] the risks of commercializing inventions regularly demand supernormal returns to justify taking them”).

93. For discussion and citations to literature on private financing of technological development and the VC industry, *see* Ronald J. Mann, *Do Patents Facilitate Financing in the Software Industry?*, 83 TEX. L. REV. 961, 974–78 (2005).

94. *Id.* at 976 (explaining that VCs see their goal as “to identify firms that will have sufficient market power to earn extraordinary profits”).

unlikely to be a decisive factor in deciding to fund a company trying to develop an early stage technology with no track record guaranteeing success.⁹⁵

There are at least two specific scenarios in which states might wish to supplement federal patent protections for innovation with their own patents. The first scenario is one in which, even if the innovation is patentable, the inventor or the reviewing investor decides a U.S. patent will not provide sufficient rights of exclusivity to make development worthwhile.⁹⁶ Inventors may perceive this reality up front and choose to forego patenting in the first place, relying instead on trade secret protection or other market advantages; or they may choose to let their patents expire without making attempts to develop them.⁹⁷ Here a state patent, perhaps with a longer term or a broader scope, could provide an alternative form of incentive.

The second scenario is one in which the innovation is simply not patentable.⁹⁸ This includes inventions that have already been disclosed or used in other jurisdictions, but that are prohibitively expensive to adopt and commercialize in the state.⁹⁹ An example of the second scenario comes from a “super high density” olive harvesting technique long used in Spain and Italy, but only recently adopted by olive growers in California.¹⁰⁰ Adoption of the technique has contributed to

95. *Id.* at 976–78. See Michael Abramowicz, *The Danger of Underdeveloped Patent Prospects*, 92 CORNELL L. REV. 1065 (2007) (describing the problem of underdevelopment of patented inventions).

96. As Michael Abramowicz puts it, a U.S. patent provides the patentee only with an “option to develop and commercialize the patent, but options often turn out to be not worth exercising.” Michael Abramowicz, *The Uneasy Case for Patent Races Over Auctions*, 60 STAN. L. REV. 803, 815 (2007) [hereinafter Abramowicz, *Uneasy Case*].

97. Notably, about half, probably more, of U.S. patents are never commercially exploited, sometimes because they are simply “commercially worthless *ab initio*” and sometimes because development proves too difficult or costly. See Sichelman, *Commercializing Patents*, *supra* note 15, at 343; see also Andrew Beckerman-Rodau, *The Choice Between Patent Protection and Trade Secret Protection: A Legal and Business Decision*, 84 J. PAT. & TRADEMARK OFF. SOC’Y 371 (2002) (addressing the considerations involved in choosing between patent or trade secret law when the subject matter is potentially protectable by either).

98. See Roin, *supra* note 15, at 503 (observing that a “serious shortcoming” of the drug patent system is that “the standards by which drugs are deemed unpatentable under the novelty and nonobviousness requirements bear little relationship to the social value of those drugs or the need for a patent to motivate their development”); see also Lichtman, *supra* note 15, at 712–14 (concluding that laws providing protection for unpatentable innovations “explicitly recognize that their respective unpatentable goods can and should be protected, and they implicitly bolster the claim that the same might be true for other unpatentable goods”).

99. See Thomas Oakley’s oral argument in *Gibbons v. Ogden*, 22 U.S.1, 48 (1824).

100. See Ben Worthen, *Family Grows Olives on Industrial Scale*, WALL ST. J., Nov. 17, 2011, at A17C (describing a grower’s decision to adopt new harvesting method).

California's development of a booming olive industry in recent years and introduced consumers to new and interesting olive oil blends that would not otherwise exist.¹⁰¹ But the push to develop a market for high quality California olive oils began back in the 1980s and took over thirty years to come to fruition due to the expense of adopting and implementing the expensive new machinery.¹⁰² As a consequence, California olive oil remained a rarity, even though the state has excellent conditions for growing olives and more microclimates in which to produce different varieties.¹⁰³ In theory, a state patent on the harvesting technique could have been an alternative to foregoing investment and could have expedited California's development of its now-thriving olive oil market.¹⁰⁴

D. States' Non-patent Alternatives

Without the power to grant patents, states use a variety of non-patent incentives to encourage companies to innovate and perform R&D in the state.¹⁰⁵ While grants for early stage research are largely the purview of the federal government,¹⁰⁶ R&D tax incentives, offered by thirty-four states as of 2010, have become nearly ubiquitous features of states' development policies.¹⁰⁷ In theory, R&D tax incentives alleviate the

101. See Fran Gage, *Bountiful Year for Olive Oil: State's Largest Harvest Ever Had Producers Working Overtime for Weeks*, S.F. CHRONICLE, January 13, 2013, at G1.

102. *Id.*

103. *Id.*

104. For the view that patents serve to accelerate rather than simply increase innovation, see, e.g. Tun-Jen Chiang, *A Cost-Benefit Approach to Patent Obviousness*, 82 S.J. L. REV. 39, 57–58 (2006) (“[W]hile virtually every invention would be created sooner or later even without a patent system, patents creat[e] incentives for additional research investment, leading to inventions being made sooner than they otherwise would be. The patent system creates no inventions, it accelerates them.”)

105. For instance, Massachusetts offers a wide variety of incentives designed to promote local bioscience companies, including grants for research and R&D tax credits. See *Incentives*, MASSACHUSETTS BIOTECHNOLOGY COUNCIL, http://www.massbio.org/economic_development/massachusetts_incentives (last visited Nov.1, 2013).

106. See Peter Lee, *Contracting to Preserve Open Science: Consideration-Based Regulation in Patent Law*, 58 EMORY L.J. 889, 932 (2009) (“In 2003, state governments accounted for only 5% of overall biomedical research funding.”). On federal grants for research, see Frischmann, *supra* note 90, at 387–91; Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 TEX. L. REV. (forthcoming 2013) (manuscript at 13–14) available at http://papers.ssm.com/sol3/papers.cfm?abstract_id=2245691 (developing “a new taxonomy of innovation policies that allows direct comparisons among patents, prizes, grants, and tax incentives”).

107. On state R&D tax incentives generally, see RASHKIN, *supra* note 4, at 263–532. For a

problem of underinvestment in innovation by encouraging companies to spend more on R&D than they would otherwise.¹⁰⁸ But tax credits are very expensive incentives, costing state governments billions of dollars in foregone revenues and encouraging companies to invest in innovation without requiring any showing of commercial success.¹⁰⁹

Patents, in contrast, do not directly divert public funds. Instead, patents “tax” the public in the form of higher prices.¹¹⁰ Many argue that patents are a more accurate way to determine the appropriate amount for this tax than a cash sum selected by the government—particularly when the government has little information about the future value of the innovation.¹¹¹ Moreover, unlike grants or tax credits, patents give firms an added incentive to invest in commercially successful derivations of the invention because the reward is “contingent on success”—meaning that the patent holder gains nothing from the prospect of an exclusive

comprehensive study of tax credit schemes in New England and studies in other regions, see JENNIFER WEINER, NEW ENGLAND PUBLIC POLICY CENTER STATE BUSINESS TAX INCENTIVES: EXAMINING EVIDENCE OF THEIR EFFECTIVENESS 35–42 (2009). On Michigan’s aggressive tax credit scheme circa 2008, see Christopher J. Enge, *Dormant Commerce Clause Challenges to the Michigan Business Tax*, 87 U. DET. MERCY L. REV. 333, 340–45 (2010). See also Enrich, *supra* note 7, at 382–85 (discussing harms to states that attempt to offer better incentive structures than other states); Brent B. Nicholson & Sue Mota, *The Dormant Commerce Clause Rises Again: Cuno v. Daimler Chrysler*, 5 HOUS. BUS. & TAX L.J. 320, 321 (2005) (examining states’ increasing use of location incentives, including R&D tax credits).

108. For a detailed discussion of tax credits as innovation incentives, see Frischmann, *supra* note 90, at 382–85 (explaining that, unlike more direct forms of subsidy, tax incentives enhance private firms’ incentives to invest in a socially desirable fashion, but “the market remains the production engine”); Hemel & Ouellette, *supra* note 106, manuscript at 19–25 (explaining that for grants and fixed prizes, the government determines which technologies to fund and how much money to allocate to each, whereas with tax credits and patents, private parties generally decide which technologies to fund and how much to invest in them).

109. Tax credits cost states millions, even billions, of dollars in foregone tax revenues. Enrich, *supra* note 7, at 387–89. See also Frischmann, *supra* note 90, at 385 (“The social costs of the [tax-incentive]-enhanced market are a decrease in general revenue and the potential for private risk preferences to be more risk-seeking than socially desirable, leading to over-investment in risky projects.”).

110. Hemel & Ouellette, *supra* note 106, manuscript at 7 (arguing that patents impose a “shadow tax” on consumers that is not taken into account in budgeting). See also Dam, *supra* note 26, at 249 (discussing general social costs of a monopoly grant).

111. Adam Smith, otherwise opposed to state-sponsored monopolies, believed patents were a more accurate and efficient way to value unknown technology than direct rewards. See ADAM SMITH, WEALTH OF NATIONS 7.22 (2009) (discussing early gold trades with kings for patent rights); see also Nancy Gallini & Suzanne Scotchmer, *Intellectual Property: When Is It the Best Incentive System?*, 2 INNOVATION POL’Y & ECON. 51, 70 (2002) (“IP is probably the best mechanism for screening projects when value and cost are not observable by the sponsor, since the private value of IP reflects the social value, and firms automatically compare some measure of value with the cost of innovation. In addition, IP encourages firms to accelerate progress, since the reward is conditional on success.”).

right on a useless technology, but experiences substantial gain if the technology is a commercial success.¹¹²

From state and local governments' perspectives, at least, patents have another benefit over direct cash payments: they are politically cheap incentives.¹¹³ Many pundits object to government subsidies for local projects, contending that government should not risk losing taxpayers' money on new technologies of unproven value or attempt to intervene in the market by "picking winners."¹¹⁴ This objection recently found a rallying cry in the public failure of the solar firm Solyndra, which received federal loans before going bankrupt, thus exposing the Obama administration to claims that it failed to properly evaluate the company before granting the loans.¹¹⁵ States, which have less money to spend, are even more vulnerable to public scorn for "saddling taxpayers with stinkers."¹¹⁶ Therefore, even if we believe government can and should

112. See Frischmann, *supra* note 90, at 377 (discussing private market benefits). See also Gallini & Scotchmer, *supra* note 111, at 55 (arguing that private firms will avoid fruitless endeavors because the market only demands useful innovations). Notably, prizes can theoretically be made contingent on market success. See, e.g., Douglas Gary Lichtman, *Pricing Prozac: Why the Government Should Subsidize the Purchase of Patented Pharmaceuticals*, 11 HARV. J.L. & TECH. 123, 130–36 (1997) (noting that prizes could be determined by referring to a company's sales).

113. As noted below, some social welfare scholars have characterized the ease of granting patents as a downside due to the potential that politicians will grant useless rights to gain political favor. For an explanation of the influence of political economy on the decision whether to use IP or direct payments to support innovation, see Robert P. Merges, *The Economic Impact of Intellectual Property Rights: An Overview and Guide*, 19 J. CULTURAL ECON. 103, 110–11 (1995) [hereinafter *Economic Impact of Intellectual Property Rights*] (outlining potential risks and benefits from political influence affecting intellectual property rights). See also Michael W. Carroll, *One Size Does Not Fit All: A Framework for Tailoring Intellectual Property Rights*, 70 OHIO ST. L.J. 1361, 1431–32 (2009) (arguing for a more diverse approach to IP rights).

114. With direct grants for research, "the government . . . often bears the entire downside risk of an unsuccessful project." Frischmann, *supra* note 90, at 387. See also Bailey Kuklin, *The Gaps Between the Fingers of the Invisible Hand*, 58 BROOK. L. REV. 835, 837–38 (1992) (summarizing concerns about the cost of government intervention).

115. For some objections from modern economists and policy makers to government "picking winners," see Diane Cardwell, *Energy Tax Breaks Proposed, Despite Waning Support for Subsidies*, N.Y. TIMES, Jan. 26, 2012, <http://www.nytimes.com/2012/01/27/business/energy-environment/clean-energy-projects-face-waning-subsidies.html?pagewanted=all&r=1> (pointing out that alternative energy industries were favored by congress but defaulted on "more than half a billion dollars" worth of federal loans).

116. For instance, Delaware recently provided \$21.5 million in taxpayer money to Fisker Automotive, an electric car company that promised to open a plant in the state. The company failed to meet deadlines and is now in dire financial straits. "All we want are the jobs or our money back," said the head of Delaware's economic development office. Op-Ed., *Silicon Valley's Green Energy Mistake*, WALL ST. J., Dec. 27, 2012, <http://online.wsj.com/news/articles/SB10001424127887323401904578159660625274422>. See also Bill Vlasic, *Breaking Down on the Road to Electric Cars*, N.Y. TIMES, Apr. 23, 2013, <http://www.nytimes.com/2013/04/24/business/fisker-broke-down-on-the-road-to-electric-cars.html?pagewanted=all> (noting that "millions of dollars in government loans" and private

spend public money to promote welfare-enhancing innovations, state policymakers may be wary due to the high political cost.

The obvious objection to this point is that the comparatively low political cost of granting patents will lead to unnecessary, over-rewarding patents based on legislative whim or the influence of well-organized lobbyists. As Robert Merges has repeatedly pointed out, one of the unique characteristics of legally granted monopolies is that they are a cheap and easy way for politicians to reward their friends.¹¹⁷ Patents involve no direct expenditure of government funds and represent “something of a free lunch in the eyes of government: a valuable benefit for which business constituents will be grateful, but which also has a zero impact on the federal budget deficit.”¹¹⁸ This is one reason Merges and other scholars generally object to post hoc patent rewards granted by legislators.¹¹⁹

But there are ways to reduce the political economy risks generated by state patents, including requiring policymakers to carefully record the patent review and granting process—as they often do for other kinds of innovation awards—and to include patent costs in budget disclosures.¹²⁰ Judicial review of patent grants, which is discussed in depth in Part V.D, can also play a very important role in limiting the negative effects of the various problems endemic to a legislative patent system. Moreover, it is important to note that tax credits—because they are paid for by foregone revenues rather than direct cash outlays—also impose a delayed tax and may be equally vulnerable to the temptation of political gifts.¹²¹

investments were wasted on an electric car company that eventually filed for bankruptcy).

117. See, e.g., Merges, *supra* note 113, at 111 (noting that intellectual property rights are “a valuable benefit for which business constituents will be grateful”). This issue is also addressed below in the discussion of state patents’ “local utility” requirement. See *infra* Part IV.A.

118. Merges, *supra* note 113, at 111.

119. See, e.g., Robert Patrick Merges & Glenn Harlan Reynolds, *The Proper Scope of the Copyright and Patent Power*, 37 HARV. J. ON LEGIS. 45, 57–60 (2000) (explaining that a “post hoc reward, granted on the basis of legislative whim or influence” is not likely to “encourage[] authors, inventors, and investors, to take risks . . . with the expectation of reaping profits later”); Dam, *supra* note 26, at 249 (noting the potential for pork barrel features of a legislative approach to patents).

120. Hemel & Ouellette, *supra* note 106, manuscript at 59–61 (discussing the risks of a patent system that takes “shadow taxes” from the public without revealing those taxes in budget figures and arguing that, in order to encourage elected officials to take into account the actual cost of patents on consumers, budget figures should include shadow taxes).

121. Tax breaks usually do not involve direct cash outlays like direct subsidies or grants, and are instead “paid for” in tax revenue losses. See WEINER, *supra* note 107, at 5–6 (providing the dollar amount of tax revenues “spent” on tax incentives in East Coast states). Thus, policymakers may grant them more liberally and be more susceptible to lobbying and rent-seeking than they would if they were required to account for the expenditure. Daniel Coenen and others theorize that this may be why courts are more likely to uphold subsidies than tax incentives in dormant Commerce Clause

Scholars hotly debate the efficacy of non-patent incentives versus patent incentives.¹²² It may not be the case that state patent incentives are always superior to grants, prizes, or tax credits for inciting investment in innovations—but certainly a healthy mix of patent and non-patent incentives may be the best medicine for a grounded innovation policy.¹²³ Indeed, historically, patents were only one of many business incentives that states and colonies used to promote development of risky new technologies.¹²⁴ At present, states do not grant any patents. To correct this imbalance, states should be able to grant patents in cases where the state reasonably believes patents would work better than non-patent options or would effectively supplement those other options.

IV. REINTRODUCING STATE PATENTS

Having now explained why states, if not the federal government, may have strong incentives to use exclusive rights to promote investment in certain innovations, and why those rights might prove valuable to innovators and the communities they inhabit, the next hurdle is to explain how this business incentive would work in practice. In his proposal for state-level protections, Douglas Lichtman limited states to passing anti-copying laws to protect local industries that are vulnerable to particularly cheap and effective modes of copying.¹²⁵ However, the premise of this Part is that states should go further by granting their own patents: statutory rights that provide limited-in-time rights of exclusivity over an innovation within the state's jurisdiction, regardless of whether the innovation is patentable at the federal level. Similar to federal patents,

decisions. See Dan T. Coenen, *Business Subsidies and the Dormant Commerce Clause*, 107 YALE L.J. 965, 1032–35 (1998) (discussing competing state subsidies and potential effects). But see Hemel & Ouellette, *supra* note 106 (noting that it “seems clear that the costs that appear on the federal budget” from patents are far smaller than those from other incentives).

122. See, e.g., Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 1023 (2012) (arguing that the U.S. government relies too heavily on IP incentives).

123. See Frischmann, *supra* note 90, at 349–50 (noting that intellectual property rights are not necessarily the best tool for promoting innovation and should be mixed with other mechanism of promotion). See also Carroll, *supra* note 113, at 1410–13 (arguing that subsidies should be used along with intellectual property rights to promote innovation); Hemel & Ouellette, *supra* note 106 (arguing that which incentive to adopt depends on a range of factors including the government's ability to evaluate projects, risk aversion of inventors, efficiency of capital markets, deadweight losses resulting from taxation and monopoly, administrative costs, political economy considerations, and distributive justice considerations).

124. *Owning Ideas*, *supra* note 33, at 99.

125. See discussion of Lichtman's work in Part V.C, *infra*.

the general purpose of state patent rights would be to provide an ex post reward and ex ante incentive for the innovator to expend effort in deriving, developing, or marketing the innovation in the state. State patents could also act as a useful “signal” for investors, potentially causing them to invest in a company’s technology, thereby helping innovators in emerging fields obtain access to private funding.¹²⁶

As mentioned in the introduction, intergovernmental experimentation in designing state patent laws provides value, and state patents should not be restricted to a particular format; however, following historical precedent also provides value. Not only did the patents granted by states and colonies retain a protected status under the IP Clause and the Tenth Amendment,¹²⁷ but they were in use for over two hundred years and may have played a role in promoting innovation in America.¹²⁸ Therefore, this section proposes an idealized version of modern state patents largely based on their historic counterparts. As discussed above, state patents were historically granted in individual statutes by the legislatures.¹²⁹ Besides their limited jurisdiction, four features distinguished them from U.S. patents: (1) local utility requirements, (2) flexible standards of patentability, (3) local working requirements, and (4) tailored scopes and term lengths. Below is an explanation of how each of these four features would work in a concurrent system of patent protection and how they would contribute to the dual goals of promoting innovation and local economic development. Finally, the Article presents a hypothetical state patent for horizontal drilling technology in North Dakota.

126. The primary utilitarian justifications for patents are the incentive-to-invent and incentive-to-disclose theories. Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1024 (1989). The incentive-to-innovate and prospect theory justifications add that the chance of obtaining a limited patent monopoly will entice patent holders to invest still more time and capital, after an invention has been made, to develop, perfect, and market it to the public. *See id.* at 1036–45 (explaining Joseph Schumpeter’s and Edmund Kitch’s famous theories). In today’s world of high financing, U.S. patents also may serve as a useful signal for capital-rich investors that a particular innovation or company is a good investment. Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 653 (2002).

127. *See Hrdy, State Patents in the Age of Laissez Faire*, *supra* note 32, at 70–74 (detailing the evidence that states retained patent-granting rights).

128. *See id.* at 104–08 (discussing New York’s steamboat patent as market-corrective).

129. Today, states could grant patents by individual statutes, they could grant patents by utilizing state agencies that would review patents and recommend them to the legislature, or state agencies could issue patents directly under delegated authority. State agencies could also grant patents by applying a framing statute crafted by the legislature, as the PTO does under the U.S. Patent Act.

A. *Local Utility Requirement*

The most controversial feature of state patents is likely to be that they have a local utility requirement. This means that the applicant for a state patent must detail specific benefits that his or her innovation will bring to the state.¹³⁰ As Oren Bracha described it, historically,

[t]he usual procedure involved a petition of the would be grantee to the assembly detailing his invention as well as the particular benefits it had to offer to the public and praying exclusivity privileges. In a fashion similar to the early English grants[,] applicants usually detailed specific tangible benefits offered by their inventions such as lower prices, the supply of a scarce commodity or the saving of labor.¹³¹

To satisfy the local utility requirement today, we can imagine that the putative benefits of a proposed innovation could be wide-ranging. An innovator could cite, for instance, higher profits in a local industry and more jobs for local workers or enhanced standards of living for state citizens. Ideally, states would use the local utility requirement to direct patents at technologies that promote long-term social goals, but where firms lack sufficient incentives to develop and bring new innovations to the market.¹³² An example is the alternative energy field, where new means of producing energy are difficult to promote alongside cheaper alternatives like coal and natural gas.¹³³ Hypothetical subject matter for state patents includes the solar-powered electric car-charging stations that the government recently installed in St. Paul, Minnesota;¹³⁴ the “artificial leaves” under development with federal funding in Berkeley, California (which convert sunlight, carbon dioxide, and water into chemical fuel using a process similar to photosynthesis);¹³⁵ a “power

130. See *supra* Part II.B.

131. *Owning Ideas*, *supra* note 33, at 100.

132. As Tim Wu explains, “the need to provide incentives for product investments depends strongly on the availability of returns from the market. The stronger the market returns, the less government encouragement in the form of intellectual property rights is needed. . . . [In contrast, when the] returns from the market are weak . . . [t]he case for strong intellectual property rights is at its zenith.” Tim Wu, *Intellectual Property, Innovation, and Decentralized Decisions*, 92 VA. L. REV. 123, 146–47 (2006).

133. See Mohamed T. El-Ashry, *National Policies to Promote Renewable Energy*, 141 DAEDALUS 105, 109 (2012) (describing types of policies city and local governments typically use to promote investment in renewable energy, including tax credits, grants, and direct cash subsidies).

134. See Joe Kimball, *How Do Those Solar-Power Electric-Car Chargers in St. Paul Work?*, MINN. POST, Apr. 13, 2012, <http://www.minnpost.com/two-cities/2012/04/how-do-those-solar-power-electric-car-chargers-st-paul-work>. With thanks to Robert Merges for this hypothetical.

135. See James Temple, *Turning Over New Leaf in Climate Change*, S.F. CHRONICLE, Jan. 12,

buoy” for capturing energy from waves under development off the coast of Oregon,¹³⁶ or the advanced methods for reclaiming wastewater that coastal cities in California and Florida are attempting to implement as supplemental water sources.¹³⁷ Any of these innovations, if successful, could prove a valuable addition to a state’s economy and raise residents’ standards of living.

A local utility requirement comports with the *Goldstein* Court’s notion that states should retain authority to use exclusive rights to promote technologies that the state deems of particular “local importance.”¹³⁸ But a local utility requirement cuts against the modern notion that patent law is normally “not the proper place to conduct technology assessment.”¹³⁹ As Michael Abramowicz put it, with respect to the possibility of government-administered “patent auctions,” even if we could be sure that there are technologies—or even entire technological fields—in which patents would be efficient, “the question remains whether the government could do a good enough job in identifying the relevant fields.”¹⁴⁰

Another problem is political economy. Nineteenth century proponents of historic state patent laws often argued that state legislators, unlike royal monarchs, are elected representatives of the people who—it is assumed—act for the public good.¹⁴¹ Today, we might be less willing to believe that state legislators act in the best interests of the public at all times. Politicians might rather stay in office than promote innovation

2013, <http://www.sfgate.com/science/article/Turning-over-new-leaf-in-climate-change-4189890.php>.

136. See Kirk Johnson, *Project Aims to Harness the Power of Waves*, N.Y. TIMES, Sept. 3, 2012, <http://www.nytimes.com/2012/09/04/us/project-aims-to-harness-wave-energy-off-the-oregon-coast.html>.

137. On attempts to supplement traditional sources of water with reclaimed wastewater in some coastal cities, see Felicity Barringer, *As ‘Yuck Factor’ Subsides, Treated Wastewater Flows From Taps*, N.Y. TIMES, Feb. 9, 2012, <http://www.nytimes.com/2012/02/10/science/earth/despite-yuck-factor-treated-wastewater-used-for-drinking.html?pagewanted=all>. Some California cities are attempting to implement desalinization techniques, which are even more costly, using financing measures like bond offerings and equity investments. See Felicity Barringer, *In California, What Price Water?*, N.Y. TIMES, Mar. 1, 2013, <http://www.nytimes.com/2013/03/01/business/energy-environment/a-costly-california-desalination-plant-bets-on-future-affordability.html>.

138. *Goldstein v. California*, 412 U.S. 546, 557 (1973).

139. Robert P. Merges, *Intellectual Property in Higher Life Forms: The Patent System and Controversial Technologies*, 47 MD. L. REV. 1051, 1067–68 (1988). See also Mark A. Lemley, *The Regulatory Turn in IP*, 36 HARV. J.L. & PUB. POL’Y 109, 109 (2013) (arguing against a system in which those entering the market must seek government permission because such a system permits the government to “decide the course of innovation”).

140. Abramowicz, *Uneasy Case*, *supra* note 96, at 835.

141. See *Commodification of Patents*, *supra* note 28, at 243 (explaining that state patents were a function of both discretion and the “legitimacy of the governmental assertion attached”).

and long-term social welfare.¹⁴² They might be inclined to grant patents for so-called “innovations” that benefit voters’ short-term interests, such as patents on technologies that increase, rather than decrease, the need for human labor. Politicians might also be subject to lobbying and rent seeking by powerful interest groups promising political support in exchange for patents.¹⁴³ Thus, relying solely on politicians to decide when to deny and grant patents could reduce rather than increase investment in innovation. After all, the saying goes, “if horses could have voted, there never would have been cars.”¹⁴⁴

An initial response to the “anti-regulatory” critique is that the states already selectively subsidize innovations that have become “political projects”; they just use non-patent incentives like tax credits to accomplish this goal.¹⁴⁵ A second response is that concerns about government intervention in the process of innovation are largely misplaced in this context. U.S. patent law—like the patent laws of most developed countries—already offers patents on a relatively technology-neutral basis; and state patents can never replace U.S. patents because of their limited jurisdictions.¹⁴⁶ This has two important implications. First, the effects on overall investment in technological development would likely be minimal, since few would choose state patents over U.S. patents. Second, the major costs generally associated with using patents to subsidize selected innovations—namely, blocking or delaying competitive entry, over-centralizing decision-making, and hindering future innovation in the industry¹⁴⁷—simply do not apply with equal

142. See Stuart Minor Benjamin & Arti K. Rai, *Who’s Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269, 311 (2007) (discussing political economy issues in innovation policy); DARON ACEMOGLU & JAMES A. ROBINSON, *WHY NATIONS FAIL: THE ORIGINS OF POWER, PROSPERITY, AND POVERTY* 183–84 (2012) (explaining that innovators often face resistance from “powerful rulers and elites”).

143. Robert Merges has continually stressed this feature of legislative monopolies. See, e.g., Merges, *supra* note 113, at 110 (noting that IP rights benefit only those groups who receive them). See also Benjamin & Rai, *supra* note 142, at 311 (noting that those groups promoting narrow interests may have “a significant advantage in judicial proceedings”); ACEMOGLU & ROBINSON, *supra* note 142, at 187–88 (explaining the English Crown’s practice of granting numerous monopolies that “impeded the type of allocation of talent, which is so crucial to economic prosperity”).

144. Thomas L. Friedman, Op-Ed., *Average is Over*, N.Y. TIMES, Jan. 24, 2012, http://www.nytimes.com/2012/01/25/opinion/friedman-average-is-over.html?_r=0&adxnnl=1&adxnnlx=1379696067-czX44SSfU1o6wsVPs+LrMQ (arguing that U.S. workers of average skill level are being replaced by foreign labor and labor-saving technology).

145. See *supra* Part III.D.

146. *Goldstein v. California*, 412 U.S. 546, 560–61 (1973) (“[T]he exclusive right granted by a State is confined to its borders.”).

147. Wu, *supra* note 132, at 134; See Lemley & Frischmann, *supra* note 14, at 283 (noting in

force to state patents because other innovators remain free to compete and experiment with the invention in other states and to work further on the general problem it is trying to solve.¹⁴⁸ Therefore, even when state patents affect the course of innovation in a particular field or technology, they do not create the same kinds of innovation-halting monopolies we worry about in the context of national patents.¹⁴⁹

B. *Flexible Standards of Patentability*

The second distinct historic feature of state and colonial patents was that they were granted based on flexible standards of patentability. Unlike U.S. patent law, state and colonial patent laws did not require inventors to meet predetermined criteria of patentability like novelty or nonobviousness.¹⁵⁰ As explained in Part II, these early patents did not necessarily seek to promote production and disclosure of entirely new information. Ever since 1790, this has been purely the domain of the federal government.¹⁵¹ Instead, historical state and colonial patents primarily focused on whether a local patent would lead to successful introduction of technology that benefited the local community.¹⁵² This is the role state patents would ideally play today. In granting patents, state governments should be less concerned about whether particular subject matter is new, let alone “nonobvious.” Instead, they should focus on whether granting a patent would lead to successful development and local working.¹⁵³

A more relaxed novelty standard cuts against the modern assumption that a primary purpose of intellectual property law is to generate incentives for the disclosure of new information.¹⁵⁴ The Supreme Court

particular the danger of removing incentives to invent).

148. See *Merges & Nelson*, *supra* note 81, at 872–75 (1990).

149. See *Wu*, *supra* note 132, at 134 (describing one of the chief costs of IP law as preventing market entry of potential innovators).

150. See 35 U.S.C. §§ 102, 103 (2006).

151. See *Biagioli*, *supra* note 33, at 1138–39 (explaining U.S. Patent Act’s new and unique focus on information disclosure).

152. See *id.* at 1138 (explaining the requirement of reduction to practice).

153. See *Sichelman*, *Commercializing Patents*, *supra* note 15, at 404 (advocating relaxed novelty standards for commercialization patents). See also *Lichtman*, *supra* note 15, at 714–15 (noting that states may play an important role in protecting unpatentable innovations).

154. See *Kapczynski*, *supra* note 122, at 981 (explaining that IP scholarship currently focuses on the information benefits of IP law). Patents’ efficacy in promoting disclosure is debated. See, e.g., *Lisa Larrimore Ouellette*, *Do Patents Disclose Useful Information?*, 25 *HARV. J.L. & TECH.* 545, 549 (2012) (arguing that patent disclosures provide many benefits).

has remarked that the information disclosed in a patent is “of such importance to the public weal that the Federal Government is willing to pay the high price of 17 [now twenty] years of exclusive use for its disclosure, which disclosure, it is assumed, will stimulate ideas and the eventual development of further significant advances in the art.”¹⁵⁵ However, conceiving of the patent as a contract in which new information is disclosed in exchange for the high price of an exclusive right is a relatively modern development.¹⁵⁶ The state patent is a different kind of contract entirely: the patentee accepts an exclusive right in exchange for agreeing to develop and deploy an innovation that would not otherwise exist in the state. So long as state patents do not interfere with U.S. patent law’s own goal of disclosure, the two incentives can exist side by side.¹⁵⁷

If absolute novelty and informational disclosure are not the main considerations of state patents, what standard of patentability should states employ to promote local working? States could build loosely off Michael Abramowicz’s and John Duffy’s suggestion, itself based on the Supreme Court’s insight in *Graham v. John Deere*: that patents should be granted based on an “inducement standard” of patentability, which restricts the award of a patent to those inventions which “would not have been disclosed or devised but for the inducement of a patent.”¹⁵⁸ Although state governments need not apply precisely the same economic analysis that Abramowicz and Duffy recommend, at the most general level, the decision to grant a state patent should take into account both the legislature’s assessment of the need for the patent and the likely benefits to the public from granting an exclusive right—what Oren Bracha called a “specific calculus of the public good.”¹⁵⁹

The analysis would have to be altered in two foundational respects. First, Abramowicz and Duffy assume federal courts will perform the patentability analysis after patents are challenged in litigation and that the government will not play a direct role in selecting which technologies

155. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481 (1974).

156. For instance, Vivian Fong argues that the Framers’ original economic justification for U.S. patents was to encourage the “influx of technology” into regions throughout the country; it had less to do with promoting the spread of new information. Vivian J. Fong, *Are We Making Progress?: The Constitution as a Touchstone for Creating Consistent Patent Law and Policy*, 11 U. PA. J. CONST. L. 1163, 1165 (2009).

157. See *infra* Part V.C (discussing preemption and potential conflicts).

158. Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1593–94, 1625 (2011) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 11 (1966)).

159. *Owning Ideas*, *supra* note 33, at 101.

meet the inducement standard before granting the patent.¹⁶⁰ Second, Abramowicz and Duffy conceive of patents as incentives to induce universally novel inventions, whereas states might grant patents for inventions already known, to some extent, in other jurisdictions.¹⁶¹ Building on these distinctions, states could start with a revised version of Abramowicz and Duffy's inducement standard that restricts state patents to cases where the innovation would not be developed and practiced in the state but for the inducement effects of the patent.¹⁶² In considering whether a state patent is justified, the state should consider the incentives that would exist without the state patent—including the availability of other incentives like U.S. patents, tax credits, or private funding—and the expected economic costs of generating, developing, and successfully working the invention in the state.¹⁶³

C. Local Working Requirements

The third defining feature of state patents is the local working requirement. The purpose of the local working requirement is two-fold. First, it requires the patent holder to provide consideration in exchange for the patent by deploying the patented innovation in the state.¹⁶⁴ Second, it generates a timeline in which this must be completed.¹⁶⁵ States can mandate local working in various ways. States can insert an explicit local working clause enumerating that the patent is contingent on the holder successfully developing and practicing the patented invention within the state and within a set timeframe.¹⁶⁶ States could also promote

160. On the potential pitfalls of this approach, see DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 104–07 (2009); *infra* Part IV.D (explaining tailored patent incentives and objections to this approach).

161. Abramowicz & Duffy, *supra* note 158, at 1593. See also *Owning Ideas*, *supra* note 33, at 99 (explaining the concept of “invention” employed in the colonies was that of the introduction of a new trade or industry).

162. See Abramowicz & Duffy, *supra* note 158, at 1590, 1625 (arguing that the inducement standard should serve as the “doctrinal polestar” in part because it is supported by Supreme Court precedent and it provides “compelling economic justification” for both granting and denying patents).

163. *Id.* at 1625–26.

164. See *supra* Part II.B (explaining local working requirements in historical state and colonial patents).

165. *Id.*

166. This is similar to the working requirement Ted Sichelman recommends for commercialization patents: “The working requirement is straightforward: commercialize the invention or lose the patent.” Sichelman, *Commercializing Patents*, *supra* note 15, at 402 (recommending a timeline for working of “perhaps three years from filing (adjusted for regulatory delay)”). However, state patents would likely require local working within the granting state. Such

local development by inserting set infringement penalties into the patents.¹⁶⁷ This ensures that if the state patent holder fails to successfully develop the innovation in the state, then others can attempt to do so in exchange for a reasonable royalty; and penalties prevent successful patent holders from demanding excessive royalty rates and raising prices beyond what consumers can afford.

State patents' emphasis on local working resembles that of some developing nations; these nations may use local working requirements and compulsory licensing to ensure that new technologies enter local markets and benefit local industries.¹⁶⁸ But today the U.S. Patent Act imposes no working requirement,¹⁶⁹ and, as discussed below in Part V.A., international treaties restrict developed nations' ability to use working requirements in their patent laws.¹⁷⁰ A major reason is the conception that the goal of patent law is to encourage *ex ante* investments in deriving a patentable invention, and that no further incentive is needed to ensure that patent holders make "further investment in the improvement, maintenance, or commercialization of the product."¹⁷¹ If the invention has value at all, the argument goes, then it will eventually reach markets where it is most valued.¹⁷² Another reason is apparently a concern that mandating working of patented inventions will reduce inventors' incentives to obtain patents, and thus disclose valuable new information to the public, due to a fear that they will be unable to successfully commercialize the invention.¹⁷³

However, neither of these concerns has much relevance to state patents, whose primary goal is precisely to encourage local working of technology in the state in which the patent is granted. If we believe

is the case with most current R&D credits. RASHKIN, *supra* note 4, at 265.

167. For a list cataloguing a wide variety of infringement penalties, see BUGBEE, *supra* note 31, at 61–103.

168. See Fong, *supra* note 156, at 1185–87 (discussing the compulsory license system formerly used by India).

169. See *supra* Part II.A. Congress has, though, used compulsory licensing in certain circumstances. See, e.g., 17 U.S.C. § 115 (2000) (creating cover license for copyrighted music).

170. See Fong, *supra* note 156, at 1186–87 (citing the lack of a working requirement in many developed nations).

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

172. Lemley, *supra* note 139, at 130–36 (arguing that commercialization of successfully patented products will occur without government intervention). *But see* Sichelman, *Commercializing Patents*, *supra* note 15, at 359–60 (critiquing Lemley's argument on the grounds that Lemley ignores the further investments required to market patented inventions).

173. See Fong, *supra* note 156, at 1186 (citing this fear, although providing statistics that suggest the opposite may be true).

inventions will automatically be implemented wherever they have the most value, then neither local working requirements nor state patents are necessary incentives. Those suspicious of market incentives will find the local working requirement crucial: the requirement not only creates a legal mandate to deploy the invention in the state, it also lets the state control the timeline in which development will occur. The second concern—that mandating local working will reduce inventors’ incentives to disclose their new inventions due to a fear that they cannot successfully work the technology in the state—is largely inapplicable. If a state patent’s local working requirement leads inventors of patentable inventions to refrain from patenting at the state level, then they already have the option and the incentive to obtain U.S. patents instead and disclose their invention in specifications as required by the U.S. Patent Act, which has no working requirement.¹⁷⁴

D. Tailored Patent Incentives

The final historic attribute of state patents was that their lengths, scopes, and terms were tailored to coincide with the time, expense, and risk the patentee was likely to incur in developing and implementing a particular technology in the state.¹⁷⁵ This contrasts significantly with U.S. patents, which are not tailored in scope and have identical terms. Besides history, there is no inherent reason why state patents today must be tailored. States could simply adopt their own twenty-year patents or even return to the historic fourteen-year term.¹⁷⁶ Yet, it might be better policy for states to tailor patents to the technology and industry involved. Scholars have identified significant costs associated with uniform “one-size-fits-all” patents.¹⁷⁷ These costs include, on the one hand, deadweight loss that results when patents “overprice” information goods or are granted for inventions that would have been developed in the absence of patent protection;¹⁷⁸ and, on the other hand, insufficient

174. See 35 U.S.C. § 112(a) (2012) (requiring only a description of the invention).

175. The character of state patents varied immensely both within states and also between states. See BUGBEE, *supra* note 31, 57–83 (discussing patents granted by early colonial governments for items such as soap, cigarettes, and salt); *id.* at 84–103 (discussing state approaches to patents during 1790s). See also *Owning Ideas*, *supra* note 33, at 100–01 (describing case-specific nature of colonial and state patents).

176. Notably, in the 1780s, states began to settle on fourteen-year periods, presumably following the British practice. BUGBEE, *supra* note 31, at 93.

177. See Carroll, *supra* note 113, at 1364 (describing problem of uniformity cost in IP rights).

178. On deadweight loss, see Michael Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 115, 128–30 (2003) (arguing substantial economic loss results from delaying issuance of patents).

incentives to invest in developing innovations that are particularly difficult or time-consuming to commercialize following invention.¹⁷⁹ Thus, tailoring state patents, if tailoring could be done accurately and efficiently, would be objectively superior to one-size-fits-all rights.¹⁸⁰

Current scholarship on patent tailoring raises an important objection, however. Although they have been active proponents for tailoring U.S. patent law to the needs of different industries, Dan Burk and Mark Lemley contend that the task is best left to federal courts.¹⁸¹ They argue it would be undesirable for Congress to tailor patent rules due to inadequate information, the difficulty of differentiating among industries and technologies, administrative costs, and the risk of special interest lobbying.¹⁸² Burk and Lemley also suggest industry-specific rules might violate the international patent standards laid out in TRIPS.¹⁸³ However, these objections do not undermine the proposal that states should tailor state patent incentives.

First, as explained below, state patents do not violate TRIPS. Second, many scholars do not share Burk and Lemley's concerns about patent tailoring, even with respect to federal patents.¹⁸⁴ Indeed, as previously discussed, various scholars have recommended that Congress implement alternative forms of U.S. patents.¹⁸⁵ Third, Burk and Lemley's major concern is that "a unitary, unvarying, and monolithic statute" would be unable to "supply the correct level of incentive to so many diverse industries with divergent incentives" and would become

179. See Abramowicz, *supra* note 95, at 1097 (discussing difficulty of too little patent in the pharmaceutical industry).

180. See BURK & LEMLEY, *supra* note 160, at 105; Carroll, *supra* note 113, at 1421. On tailoring patent term lengths, see Eric Johnson, *Calibrating Patent Lifetimes*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 269, 271 (2006) (arguing grant of varied patent durations based on particular industry reduces monopoly risks and creates flexibility).

181. BURK & LEMLEY, *supra* note 160, at 5, 97–100, 106–07.

182. See *id.* at 97–100, 106–07 (examining problems created by Congress during early 2000s). See also, e.g., Merges *supra* note 113, at 111 (discussing interest group and political influence concerns); Roin, *supra* note 15, at 559 (noting that it would be difficult for Congress to carefully and narrowly tailor special patent rights for otherwise unpatentable drugs); Carroll, *supra* note 113, at 1399 (suggesting policymakers may "lack an evidentiary basis" for tailoring IP rights).

183. Burk and Lemley suggest that TRIPS would prohibit tailoring patents to the needs of particular technologies, though concede that Article 8 makes significant exceptions. BURK & LEMLEY, *supra* note 160, at 97.

184. See BURK & LEMLEY, *supra* note 160, at 96 (noting a variety of proposals for tailoring U.S. patents to technologies and industries and proposals for sui generis protection).

185. See, e.g., Sichelman, *Commercializing Patents*, *supra* note 15, at 408–09 (discussing a commercialization patent system); Johnson, *supra* note 180, at 271 (discussing several alternative regimes).

obsolete in a short period of time.¹⁸⁶ But this concern does not apply to those state patents that are granted in individual statutes and tailored to the needs of individual innovators. Moreover, state governments, because they are autonomous decentralized regimes, may have a unique advantage for perfecting the practice of patent tailoring. State governments operate at the regional rather than the national level. Thus, states would likely be designing state patents for specific clusters of technologies and industries, and could develop expertise in those areas.¹⁸⁷ Unlike Congress, states would not be wedded to a single centralized patent policy and could experiment and remain flexible in designing patents that function best in their own jurisdictions. For all these reasons, states might have a unique opportunity to design patents that better approximate incentives required to innovate.

E. A Hypothetical State Patent

An example best illustrates how state patents would work in practice. Imagine it is 1985. North Dakota, whose small oil industry supported the state's economy during the 1970s and early 1980s, is experiencing an economic decline as the state's supply of drillable oil dries up and fewer drilling rigs are built in the state.¹⁸⁸ The North Dakota legislature has just learned about new drilling techniques, including horizontal well drilling and hydraulic fracking. These new drilling techniques, if successfully developed, could allow drilling rigs to extract oil from the Bakken Formation, a unique group of oil-rich rocks located in the state.¹⁸⁹ The state begins offering state patents for qualifying technologies related to extraction of oil from underground geological formations.

A company called Meridian Oil,¹⁹⁰ whose engineers have been

186. BURK & LEMLEY, *supra* note 160, at 105.

187. See Fromer, *Patentography*, *supra* note 12, at 1482 (arguing that clustering of patent cases in particular districts could help courts develop industry- and technology-specific rules).

188. In reality, the North Dakota oil industry's decline lasted nearly a quarter century until approximately 2005, when horizontal drilling and hydraulic fracking techniques became economically feasible on the Bakken. See Chris Brown, *North Dakota Went Boom*, N.Y. TIMES MAGAZINE, Feb. 3, 2013, at 29.

189. See *id.* ("The Bakken Formation now accounts for 91 percent of North Dakota's oil production.").

190. Meridian Oil was the company that spudded the first horizontal well in North Dakota in 1987, long before the current boom. *Id.* See also Julie Lefebvre, *Oil Production from the Bakken Formation: A Short History*, 32 NDGC NEWSLETTER 1, 2 (2011), available at <https://www.dmr.nd.gov/ndgs/newsletter/NL05w/pdf/Bakken%20Formation.pdf> (discussing

researching horizontal drilling techniques, applies for a North Dakota patent. Meridian provides a specification laying out a proposed method for horizontal drilling including related machinery, and a business plan including a detailed development timeframe. Neither the techniques nor the various machinery Meridian proposes are entirely new, and Meridian would not qualify for a U.S. Patent of any significant scope.¹⁹¹ Nonetheless, hoping to encourage Meridian to test and develop this technology on the Bakken Formation, the legislature grants the company a twenty-one year patent. The patent has a local working clause that requires successful development in the state within two years, subject to extensions. The patent also has a compulsory licensing provision that will be triggered following three years of profitable commercial use, assuming competitors seek to use Meridian's technology in the state.

Meridian agrees to the patent's terms and begins to invest in the project and raise money from outside investors, who see Meridian's state patent as a sign that the company will prevail and hope to share the profits.¹⁹² In 1987, after a near-success, Meridian receives an extension on its local working clause. By 1990, Meridian has made its technology cost-efficient and relatively safe, and Meridian starts earning profit from oil sales and licensing fees to other oil companies like Exxon that also start drilling in the state. North Dakota's economy benefits immensely from new jobs and more taxable revenues. North Dakota spends excess revenues on improving education and infrastructure. By 2005, North Dakota's patent is considered an economic success and has improved the overall quality of life in the state.

V. LIMITS ON STATE PATENTS

Having made the case for introducing state patents as a new innovation incentive, this Article must now address the legal barriers to implementing state patents—the four sources of law that might limit states' authority to grant patents. Then, it outlines a new three-part approach that relies on the dormant Commerce Clause—not patent preemption—to better address the risks raised by state patents.

Meridian Oil's pivotal role in drilling in Bakken Formation).

191. See 35 U.S.C. §§ 102, 103 (2013) (requiring subject matter to be novel and nonobvious, a requirement Meridian's drills could not meet).

192. See Long, *supra* note 126, at 653 (arguing that patents can provide "signals" to investors to invest in a company).

A. TRIPS

State patents may diverge from some of the patent standards laid out in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) for member nations of the World Trade Organization (WTO).¹⁹³ With several important exceptions,¹⁹⁴ TRIPS requires that patents be made “available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application[.]”¹⁹⁵ and last a minimum of twenty years from the filing date.¹⁹⁶ TRIPS generally prohibits WTO members from discriminating on the basis of technology in granting patents.¹⁹⁷ Finally, TRIPS prohibits member nations’ patent laws from discriminating as to “the place of invention” or as to “whether products are imported or locally produced.”¹⁹⁸ These prohibitions suggest that patents granted only to local inventors or local producers might run afoul of these rules.

However, even if state patents diverge from TRIPS standards—whether by offering shorter terms or by mandating local working—and do not fall under any of TRIPS’s exceptions, state patents would not implicate TRIPS. TRIPS is a minimum standards agreement for nation states that join the WTO.¹⁹⁹ The United States has already met TRIPS’s

193. Agreement on Trade-Related Aspects of Intellectual Property Rights art. 27-33, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 [hereinafter TRIPS].

194. On TRIPS exceptions, see, e.g., Duffy, *supra* note 12, at 704–05 (briefly discussing TRIPS exceptions).

195. TRIPS, *supra* note 193, art. 27.1.

196. *Id.* art. 33.

197. *Id.* art. 27.1. On this provision and exceptions, see also Maria Victoria Stout, *Crossing the TRIPS Nondiscrimination Line: How CAFTA Pharmaceutical Patent Provisions Violate TRIPS Article 27.1*, 14 B.U. J. SCI. & TECH. L. 177, 187 (2008) (discussing pharmaceutical innovation exceptions under the TRIPS agreement).

198. TRIPS, *supra* note 193, art. 27.1. On TRIPS’s limitations on local working requirements, see G.B. Reddy & Harunrashid A. Kadri, *Local Working of Patents—Law and Implementation in India*, 18 J. INTELL. PROP. RIGHTS (Mar. 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2227573 (examining implementation concerns and economic benefits of local working requirements in India).

199. See Rochelle Cooper Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPS and Dispute Settlement Together*, 37 VA. J. INT’L L. 275, 296 (1997) (noting “the nature (and advantage) of a minimum standards regime is that where there is no ‘best’ rule that will work in every economy, each country can tailor the law to its own needs”); Yoshifumi Fukunaga, *Enforcing TRIPS: Challenges of Adjudicating Minimum Standards Agreements*, 23 BERKLEY TECH. L.J. 867, 897–98 (2008) (outlining flaws with dispute resolution mechanisms under the TRIPS agreement); Duffy, *supra* note 12, at 704–05 (advocating for a diverse approach to patent law). With thanks to Margot Kaminski for this point.

requirements by implementing the U.S. Patent Act. Therefore, concurrent state patents that do not meet TRIPS's standards should not be subject to enforcement actions under the treaty.

B. Antitrust Law

Antitrust law presents another potential limit on state patents. The Sherman Antitrust Act prohibits certain private business activities that federal regulators deem to be anticompetitive.²⁰⁰ State patents could theoretically be vulnerable to challenges based on Section 1 or Section 2 of the Sherman Act because they potentially confer market power on a private entity and can be used to restrain trade.²⁰¹ However, antitrust law should not be used to challenge state patents for several reasons. First, federal regulators may not have jurisdiction to challenge state patents on innovations that do not significantly affect interstate commerce.²⁰²

Second, and more importantly, even assuming federal regulators have jurisdiction, based on existing case law, the “state action” doctrine should exempt state patents from federal antitrust review.²⁰³ Antitrust law is “directed primarily (albeit not exclusively) at market restraints and monopolies erected by private business firms.”²⁰⁴ State patents are not monopolies obtained through private action; instead, state patents are exclusive rights granted by an elected government or agency. The state action doctrine allows state law to restrict competition in a particular field and maintain prices at above-market rates in the presence of a “clearly articulated and affirmatively expressed state policy to regulate competition” that is “actively supervised” by the state itself.²⁰⁵ Thus, as

200. 15 U.S.C. §§ 1–7 (2012).

201. *Id.* §§ 1–2.

202. Federal antitrust law requires that the allegedly anticompetitive behavior restrain trade or commerce “among the several States, or with foreign nations.” *Id.* State patents do not apply outside the granting state’s jurisdiction so they may not meet this requirement. *See id.* (forbidding any “attempt to monopolize”).

203. *See Parker v. Brown*, 317 U.S. 341, 350–51 (1943) (“We find nothing in the language of the Sherman Act or in its history which suggests that its purpose was to restrain a state or its officers or agents from activities directed by its legislature.”). *But see* Robert P. Inman & Daniel L. Rubinfeld, *Making Sense of the Antitrust State-Action Doctrine: Balancing Political Participation and Economic Efficiency in Regulatory Federalism*, 75 TEX. L. REV. 1203, 1207 (1996) (arguing in favor of a revised test that asks (1) whether the state regulation generates significant monopoly spillovers for non-residents, and (2) whether it was decided without political participation of the affected nonresidents as evidenced by the lack of interstate regulatory agreement.).

204. Daniel J. Gifford, *Federalism, Efficiency, the Commerce Clause, and the Sherman Act: Why We Should Follow A Consistent Free-Market Policy*, 44 EMORY L.J. 1227, 1228 (1995).

205. To survive under state action doctrine, the challenged restraint must “be one clearly

John Shepard Wiley has pointed out, assuming a state patent created in a state statute is sufficiently supervised by the state or a state agent—for instance through price regulation and compulsory licensing—then the state action doctrine should defer to state regulators.²⁰⁶ In those cases where the state patent significantly interferes with interstate markets and interests *outside* the state, the dormant Commerce Clause is the best vehicle to address this concern, as argued below in Part V.D.²⁰⁷

C. Preemption of State Patents Under Bonito

The most important limit on state patents comes from the Supreme Court's current patent preemption doctrine. As mentioned in the Introduction, in a unanimous opinion in *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, the Court struck down a Florida law that prohibited the use of a direct molding process to cheaply reproduce boat hulls in the state. It concluded that federal patent law preempts states from granting "patent-like" rights that do not meet Congress's "rigorous requirements of patentability" or that represent a "significant competitor" to U.S. patent rights.²⁰⁸ This rule is supposedly statutory rather than

articulated and affirmatively expressed as state policy," and the policy must "be actively supervised by the State." *Cal. Retail Liquor Dealers Ass'n. v. Midcal Aluminum, Inc.*, 445 U.S. 97, 105 (1980). For a sub-state governmental entity, the test is different. *See Fed. Trade Comm'n v. Phoebe Putney Health Sys., Inc.*, 133 S. Ct. 1003, 1011–12, 1015 (2013) (holding that there was no clearly articulated state policy authorizing hospital's acquisition of the only other general, acute care hospital in the region, and that the State's grant to Georgia hospital authorities of the power to acquire other hospitals was no different from similar powers granted to all corporations). In *Phoebe*, the Supreme Court clarified that "[a]s with private parties, immunity will only attach to the activities of local governmental entities if they are undertaken pursuant to a 'clearly articulated and affirmatively expressed' state policy to displace competition." *Id.* at 1011 (quoting *Comty. Commc'ns Co. v. City of Boulder*, 455 U.S. 40, 52 (1982)). "But unlike private parties, such entities are not subject to the 'active state supervision requirement' because they have less of an incentive to pursue their own self-interest under the guise of implementing state policies." *Id.* (quoting *Town of Hallie v. City of Eau Claire*, 471 U.S. 34, 46–47 (1985)).

206. John Shepard Wiley, *Bonito Boats: Uninformed by Mandatory Innovation Policy*, 1989 SUPREME COURT REVIEW 283, 304 (1989).

207. *See Gifford, supra* note 204, at 1227–28 (arguing that the dormant Commerce Clause and antitrust share a common concern with facilitating trade and furthering efficient allocation of resources). *See also* Frank Easterbrook, *Antitrust and the Economics of Federalism*, 26 J. LAW & ECON. 23, 24–26 (1983) (arguing that state action doctrine should invalidate state laws exploiting consumers beyond the state's borders).

208. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 160–61 (1989). *See also* *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 232 (1964) (holding state unfair competition law could not prevent copying of unpatentable pole lamp); *Compco Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234, 238 (1964) (ruling state unfair competition law could not prevent copying of unpatentable lighting fixture). *See also* the analysis in Lichtman, *supra* note 15, at 697–700. For a recent and comprehensive analysis of the Court's IP preemption case law, *see* Jeanne C. Fromer, *The*

constitutional.²⁰⁹ But the *Bonito* Court suggested that the exclusive status of federal patent protection is “implicit in the Patent Clause itself.”²¹⁰

This doctrine arguably does not necessarily preempt states from granting state patents based on *more* rigorous requirements of patentability than U.S. patents apply.²¹¹ But state patents that are based on reduced criteria of novelty or nonobviousness, that are granted for subject matter that U.S. patent law otherwise excludes, that have longer terms or broader scopes than U.S. patents, and that generally present realistic economic alternatives to U.S. patents would probably violate *Bonito*’s rule.²¹²

However, several scholars believe *Bonito* was wrongly decided.²¹³ A comprehensive account of the Court’s complicated opinion in *Bonito* and the divergent scholarship surrounding the decision is beyond the scope of this Article. But three objections are most relevant to sustaining concurrent state patent laws.

First, the *Bonito* Court never directly confronted the fact that there is no express constitutional or statutory prohibition on states granting

Intellectual Property Clause’s Preemptive Effect, in INTELLECTUAL PROPERTY AND THE COMMON LAW 265 (Shyam Balganesh, ed., 2013). See also Hrdy, *supra* note 10, at 87 (discussing advantages of state flexibility and experimentation with patent systems).

209. See *Bonito*, 489 U.S. at 154 (noting state regulation of potentially patentable subject matter is not *ipso facto* pre-empted by federal patent law).

210. For instance, the *Bonito* Court stated that “[t]he novelty and non-obviousness requirements of patentability embody a congressional understanding, *implicit in the Patent Clause itself*, that free exploitation of ideas will be the rule, to which the protection of a federal patent is *the exception*. . . . To a limited extent, the federal patent laws must determine not only what is protected, but also what is free for all to use.” *Id.* at 151 (emphasis added). See also *Compco*, 376 U.S. at 237 (noting “[for a state to] forbid copying [of unpatentable goods] would interfere with the federal policy, *found in Art. I, § 8, cl. 8, of the Constitution* and in the implementing federal statutes, of allowing free access to copy whatever the federal patent and copyright laws leave in the public domain.” (emphasis added)). See also K. David Crockett, *The Salvaged Dissents of Bonito Boats v. Thunder Craft*, 13 GEO. MASON U. L. REV. 27, 28 (1990) (concluding that the Court in *Bonito* relied on theories of implied preemption, actual conflict preemption, and “a new ‘dormant patent clause’”).

211. See Hrdy, *supra* note 10, at 88–89 (arguing federal patent law does not directly control state patent initiatives). Bruce Bugbee has also speculated that states could grant patents on the same terms and conditions as Congress. BUGBEE, *supra* note 31, at 102.

212. See *Bonito*, 489 U.S. at 160–61 (noting restrictions placed on states as a result of federal preemption). The Federal Circuit has also suggested that the Patent Act preempts the entire field of patent law, in contrast to unfair competition law. See *Hunter Douglas, Inc. v. Harmonic Design, Inc.*, 153 F.3d 1318, 1334 (Fed. Cir. 1998) (finding no field preemption of state unfair competition claims that were related to federal patent laws). *But see* *Interpart Corp. v. Italia*, 777 F.2d 678, 684–85 (Fed. Cir. 1985) (distinguishing state statutes that prohibit one form of copying, such as using plug molding, and patent laws), *overruled by Bonito*, 489 U.S. at 143–44.

213. Wiley, *supra* note 206, at 304; Lichtman, *supra* note 15, at 712–14; Crockett, *supra* note 210, at 28.

exclusive rights that resemble federal patents. The IP Clause does not mention or address the states in any way.²¹⁴ The Patent Act, unlike the Copyright Act, has never had an express preemption provision.²¹⁵ The *Bonito* Court purported to uphold *Goldstein*'s position that the IP Clause does not apply to the states and noted the absence of express Congressional prohibitions on states' power to "adopt rules for the promotion of intellectual creation within their own jurisdictions[,] such as trade secret laws."²¹⁶ But the Court did not mention states' historic powers to grant patents or the reasons the Framers, along with courts and commentators throughout the nineteenth century, chose to keep states' concurrent patent powers intact.²¹⁷ The Framers considered concurrent state patent powers an important concession to state sovereignty and deliberately chose to retain the powers.²¹⁸ As John Wiley has also observed, the Court's statement that "[o]ne of the fundamental purposes behind the Patent and Copyright Clauses of the Constitution was to promote national uniformity in the realm of intellectual property[]" is misleading; the Court's only support for this point is the fact that Congress gave federal courts exclusive jurisdiction to hear cases involving *federal* patents in 1800,²¹⁹ and James Madison's comments in the *Federalist* No. 43. Yet Madison never suggested state patents are undesirable, as the *Bonito* Court implied.²²⁰ Madison simply stated that states could not "separately make effectual provision[]" for patents (or copyrights) due to their limited jurisdictions.²²¹ Thus, contrary to the

214. U.S. CONST. art. I, § 8, cl. 8.

215. The Copyright Act of 1976 has an express preemption provision. 17 U.S.C. § 301 (2011); see also 35 U.S.C. §§ 101–102 (2011) (lacking an express preemption provision in the Patent Act).

216. *Bonito*, 489 U.S. at 165 (noting IP clause does not deprive states of power to "adopt rules for the promotion of intellectual creation within their own jurisdictions"), 154–56 (discussing state laws that are permitted such as trade secrets (citing *Goldstein v. Cal.*, 412 U.S. 546, 560 (1973); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 479 (1974))).

217. See *Livingston v. Van Ingen*, 9 Johns 507, 581–82 (N.Y. 1812) (James Kent, C.J.) (holding courts must apply a strong presumption in favor of validity of state patents instead of assuming federal preemption); *Gibbons v. Ogden*, 22 U.S. 1, 48 (1824) (noting states have concurrent patent power with federal government); and Part II, *supra* (discussing historic views of state patent powers).

218. Hrdy, *State Patents in the Age of Laissez Faire*, *supra* note 32, at 70–76.

219. "Since the Patent Act of 1800, Congress has lodged exclusive jurisdiction of actions 'arising under' the patent laws in the federal courts, thus allowing for the development of a uniform body of law in resolving the constant tension between private right and public access." *Bonito*, 489 U.S. at 162.

220. See *id.* ("One of the fundamental purposes behind the Patent and Copyright Clauses of the Constitution was to promote national uniformity in the realm of intellectual property." (citing THE FEDERALIST NO. 43 (James Madison))).

221. THE FEDERALIST NO. 43 (James Madison), available at

Court's suggestion, there is no constitutional, legislative, or historical basis for completely preempting states' authority to grant patents.

A second, closely related reason the *Bonito* rule is wrong is that it pays insufficient deference to independent federalism-based justifications for concurrent state power to grant patents.²²² Along with the market-correcting boost to innovation already emphasized, these benefits include promoting experimentation, innovation, and competition among decentralized political units in designing patent law and policy;²²³ allowing “dissent” against federal patent norms by making state patent alternatives available;²²⁴ creating positive externalities for other states by encouraging inventors to obtain state patents rather than nationwide

<http://www.constitution.org/fed/federa43.htm>. See also Wiley, *supra* note 206, at 295–96.

222. See Yoo, *supra* note 9, at 1403 (arguing for judicial protections for federalism through judicial review, based on both historic precedent and economic theories of federalism). See also Heather K. Gerken, *Our Federalism(s)*, 53 WM. & MARY L. REV. 1549, 1552 (2012) (discussing the wide range of benefits federalism can produce).

223. See *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932). Scholars of federalism have long argued over whether states produce legal innovations for other states, see, e.g., Susan Rose-Ackerman, *Risk Taking and Reflection: Does Federalism Promote Innovations?*, 9 J. LEGAL STUD. 593 (1980), and patent law scholars have recently drawn on these arguments in advocating for more experimentation in order to improve the design of patent incentives. See Ouellette, *supra* note 12, at 2, 17. But see Brian Galle & Joseph Leahy, *Laboratories of Democracy? Policy Innovation in Decentralized Governments*, 58 EMORY L.J. 1333, 1335 (2009) (arguing states may have insufficient incentive to invest in legal innovation due to chance of copying by other states); Ouellette, *supra* note 12, at 15 (asserting that governments may under-innovate since they cannot internalize the full benefits of their innovation policies). For citations to economic literature favoring decentralized rather than centralized policymaking structures, generally, see Wu, *supra* note 132, at 124 n.3. See also Richard Schragger, *Decentralization and Development*, 96 VA. L. REV. 1837, 1838–39 nn.1–3 (2010). Notably, when Craig Nard and John Duffy discuss the potential competitive benefits of decentralization in designing patent laws in the federal courts of appeal, they draw on models of political decentralization. They write:

The beneficial effects of competition provide a powerful justification for decentralized decision-making. Competition serves as an important check on poor decisions. In the marketplace, it punishes firms that make poor decisions about product design and price. In the political marketplace, it polices against candidates who adopt stances poorly aligned with the views of voters. And for states and nations, it provides incentives to adopt reasonable laws that will not cause businesses, investment, and individuals to flee the jurisdiction.

See Nard & Duffy, *supra* note 12, at 1629.

224. See Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256, 1258 (2009) (arguing that states can serve simultaneously as cooperative “servants” carrying out federal policies and as autonomous “dissenters” against federal policy norms; and that, in fact, a state’s status as a “servant, insider, and ally might enable it to be a sometime dissenter, rival, and challenger” (emphasis added)); Heather K. Gerken, *Foreword: Federalism All the Way Down*, 124 HARV. L. REV. 4, 8–10 (2010) (arguing that by participating in governance at the local level minorities can find a voice for their dissenting viewpoints); see also Hrdy, *supra* note 10, at 84 (arguing that, by obtaining state patents, inventors who disagree with U.S. patent policy can encourage states to adopt reforms that facilitate open innovation, while also preventing others from patenting at the federal level).

exclusive rights to their inventions;²²⁵ facilitating matching of residents with heterogeneous preferences to different jurisdictions with homogenous goals and resources;²²⁶ and potentially providing states with a less wasteful form of “locational incentive” than tax credits.²²⁷

The *Bonito* Court’s failure to take any of these potential benefits into account sharply conflicts with the Court’s more lenient approach to trade secret laws in *Kewanee Oil Co. v. Bicron Corp.*, where the Court assessed the risks trade secrets posed to innovation but found them justified given the variety of independent benefits trade secret protections can produce, including providing incentives to generate unpatentable inventions and information as well as protecting unaddressed interests such as privacy.²²⁸

Third, and finally, although the Court’s decision to preempt a state law covering an unpatentable boat hull design was premised on the desire to preserve appropriate incentives to invent and disclose new inventions, the decision may lead to a worse system for promoting innovation.²²⁹ As Lichtman has convincingly argued, the *Bonito* Court

225. See Hrdy, *supra* note 10, at 84 (noting that state patents “prevent any single entity from obtaining national control of the invention, spurring competition and productive reuses in other states” while also giving “the inventor a ‘complete and perfect’ right within a chosen locality”). See also Wu, *supra* note 132, at 126 (emphasizing the importance of decentralization and competition in promoting innovation, citing work by scholars like Robert Merges and Richard Nelson).

226. The federalism-based benefit of jurisdictional matching is derived from Charles Tiebout’s and more recent federalism scholars’ theories that state and local governments can offer optimized “packages” of goods and services that appeal to a homogenous group of mobile firms and residents, thus ensuring efficient delivery of local public goods based on particularized needs and preferences. See MUELLER, *supra* note 9, at 77–83; Yoo, *supra* note 9, at 1402 (explaining the benefits of federalism as a “decentralized decisionmaking system that is more responsive to local interests and preference, that can tailor programs to local conditions and needs, and that can provide innovation in creating new programs”); COOTER, *supra* note 9, at 105–06, 129–30 (explaining that “people with similar tastes voluntarily cluster together in order to enjoy their preferred combination of local public goods” (citing Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956))).

227. The notion that state patents could provide a less risky incentive than tax credits for encouraging innovators to locate in their optimal jurisdictions is derived from Clayton Gillette’s article in defense of state business incentives as locational incentives. See Gillette, *supra* note 7, at 448–51.

228. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 487–93 (1974) (noting that “misallocation of resources and economic waste [] would thus take place if trade secret protection were abolished”). As Steven Yelderman has pointed out to me, the Court’s decision conflicts starkly with antitrust law’s state action doctrine, mentioned above, which recognizes the benefits of deferring to state authority in sanctioning local monopolies.

229. This statement is illustrative of the Court’s goal to preserve incentives to disclose and invent:

A state law that substantially interferes with the enjoyment of an unpatented utilitarian or design conception which has been freely disclosed by its author to the public at large

made questionable assumptions about the effects of competing state protections on overall levels of investment in innovation.²³⁰ According to the *Bonito* Court, competing state incentives might reduce inventors' incentives to generate and disclose inventions meeting the "rigorous" federal standards of patentability, diverting their efforts away from generating patentable inventions towards any number of lesser innovations meeting states' criteria.²³¹ However, Lichtman contends, allowing states to grant patents covering unpatentable subject matter that nevertheless involves some level of technological risk might just as easily lead to *more*, rather than *less*, investment in innovation. For example, it could lead to more investment in expensive and high quality boat hulls that are easy to copy, and less investment in Florida real estate or movie theaters.²³² By completely eliminating states' power to grant "patent-like" rights—even when those rights are limited to prohibiting particularly fast and cheap forms of copying²³³—the Court deprived states of their ability to provide exclusive-rights-based protections for unpatentable innovations that might be of high social value. This result leaves states reliant on the variety of cash-based incentives discussed previously in Part III.D.

impermissibly contravenes the ultimate goal of public disclosure and use which is the centerpiece of federal patent policy. Moreover, through the creation of patent-like rights, the States could essentially redirect inventive efforts away from the careful criteria of patentability developed by Congress over the last 200 years.

Bonito, 489 U.S. at 156–57.

230. Lichtman, *supra* note 15, at 713–18.

231. *Bonito*, 489 U.S. at 160–61. See also Lichtman, *supra* note 15, at 697–98. For examples of how patents can distort innovation by directing investment into different types of productions, see Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214, 1214–36 (2005), available at www.nber.org/papers/w9909 (finding that in countries without patent laws, inventors concentrated in industries where secrecy was effective relative to patents, e.g., food processing and scientific instruments, and suggesting that "introducing strong and effective patent laws in countries without patents may have stronger effects on changing the direction of innovative activity than on raising the number of innovations"); Amy Kapczynski & Talha Syed, *The Continuum of Excludability and the Limits of Patents*, 122 YALE L.J. 1900, 1901 (2013) (arguing that patents direct investment away from subject matter that is more difficult to exclude, such as medical checklists).

232. Lichtman, *supra* note 15, at 718. Perhaps the best testament to Lichtman's point is the fact that, about ten years after *Bonito* was decided, and one year after Lichtman wrote his article, Congress enacted the Vessel Hull Design Protection Act (VHDPA), which had the purpose to prevent cheap imitation of boat hulls nationwide. See Title V of the Digital Millennium Copyright Act of 1998, Pub. L. No., 105-304, 112 Stat. 2860 (1998), 'Vessel Hull Design Protection Act,' now codified as 17 U.S.C. §§ 1301–1332 (1998).

233. Prior to *Bonito*, the Federal Circuit had upheld a California law prohibiting copying of articles using the plug molding process. See *Interpart Corp. v. Italia*, 777 F.2d 678, 684–85 (Fed. Cir. 1985), *overruled by Bonito*, 489 U.S. at 143–44.

The *Bonito* Court's decision to do away with state protections for innovations that are unpatentable makes little sense given the uncertainty involved in calibrating incentives for intellectual production.²³⁴ Not only is it easy for Congress to err in designing incentives to innovate, but it is difficult for judges to evaluate the success of state legislators in supplementing federal incentives.²³⁵ Thus, as Wiley puts it, "[i]t . . . is possible to see the *Bonito Boats* decision as expressing a federal policy to enforce an optimal regime of innovation incentives"; but the opinion "cannot justify itself on these grounds because we have no reason to consider federal courts to be better judges than state legislators of when added protection is efficient."²³⁶ In sum, by striking down the Florida statute and effectively prohibiting other states from granting similar rights, the Court far exceeded the scope of its ability and authority to review the economic efficiency of state laws.²³⁷ This is why Justice Kent proposed in 1812 that courts should not take it upon themselves to determine whether a state patent is "inexpedient or unwise."²³⁸ In Kent's view, deliberation by elected state legislators is a more legitimate and reliable way to determine whether a patent is economically justified than a substantive judicial review by members of the judiciary.²³⁹

For all these reasons, *Bonito* should be overruled or at least substantially limited in its scope at the next opportunity. State protections for intellectual productions do not, as a per se rule, risk hindering innovation just because they compete with federal patent incentives; and they could produce many independent local and national

234. Wiley, *supra* note 206, at 300–01.

235. *Id.* at 300–02.

236. *Id.* at 302.

237. Paul Heald disagrees, arguing that the Court properly applied economic analysis in striking down the law because "the Florida statute has no qualitative requirements" and "stimulates the flow of capital into boat hull design and allows boat manufacturers to obtain a monopoly price *without any attempt to guarantee that the public will benefit through better boat design.*" Paul Heald, *Federal Intellectual Property Laws and the Economics of Preemption*, 76 IOWA L. REV. 959, 987 (1991) (emphasis added).

238. *Livingston v. Van Ingen*, 9 Johns 507, 572 (N.Y. 1812). Justice Kent opined in *Livingston* that when a court reviewed patents granted by state legislatures, "the presumption must be admitted to be extremely strong in favor of their validity. There is no very obvious constitutional objection, or it would not so repeatedly have escaped the notice of the several branches of the government, when these acts were under consideration." *Id.* "These grants may possibly be inexpedient or unwise, but that has nothing to do with the question of constitutional right." *Id.* at 573.

239. *See id.* *See also* Patricia Wald, *Limits on the Use of Economic Analysis in Judicial Decisionmaking*, 50 LAW & CONTEMP. PROBS. 225, 225 (1988) (casting doubt on the wisdom of judges attempting or purporting to be economically sophisticated in their decision-making and expressing concern about the shifting balance of power between the different branches of government heralded by increased use of economic analysis by the judiciary).

benefits. This is not to say that states should have free license to grant patents. Just as with other state business incentives, state patents may impose external costs on other states that the granting state does not have to fully internalize.²⁴⁰ The *Bonito* Court itself alluded to this risk, albeit with very little discussion, stating that “absent [a uniform national rule,] each State could afford patent-like protection to particularly favored home industries, effectively insulating them from competition from outside the State.”²⁴¹

The Court apparently assumed, however, that the IP Clause and the Patent Act are the proper mechanisms for addressing this concern.²⁴² But, as Chief Justice Marshall recognized in 1824, the proper vehicle for judicial scrutiny of state patents is the dormant Commerce Clause.²⁴³ Statutory preemption under the Patent Act looks only at whether a state law conflicts with the goal of federal patent law to promote innovation—a conflict that does not exist for state patents any more than it does for trade secrets or state R&D tax credits.²⁴⁴ Meanwhile, as explained in the next section, addressing local protectionism and maintaining the integrity of the national market is the primary function of the Supreme Court’s modern dormant Commerce Clause jurisprudence.²⁴⁵

240. See Gillette, *supra* note 7, at 450. See also discussion *infra* Part V.D.

241. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 163 (1989).

242. As noted below, the *Goldstein* Court had also taken this approach with respect to copyright. Wiley suggests that state action doctrine is the appropriate channel for addressing concerns about protectionism. Wiley, *supra* note 206 at 303–04. But this might leave state patents without any federal review. Given the potential risks to out-of-staters, discussed below, I think some judicial review is necessary. See Frank Easterbrook, *Antitrust and the Economics of Federalism*, 26 J.L. & ECON. 23 (1983) (arguing that state action doctrine should invalidate state laws that exploit consumers beyond the state’s borders).

243. See *Gibbons v. Ogden*, 22 U.S. 1, 239 (1824) (stating that because other issues decided the case—namely, a potential conflict with interstate commerce and direct actual conflict with Gibbons’s federal coasting license—there was no need to address patent preemption, and leaving Justice Kent’s opinion that states have concurrent patent power intact).

244. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 478 (1974).

245. As Clayton Gillette writes, explaining the applicability of the dormant Commerce Clause to state locational incentives, generally:

Contemporary literature views the Commerce Clause largely as a response to fears that states, left to their own devices, would regulate trade in a protectionist manner, and thus seek to exploit monopolies or otherwise impose external costs that the regulating state did not have to internalize. Thus, states would likely regulate even where regulatory costs exceeded benefits, as long as those costs are imposed on residents of other jurisdictions, or on politically powerless groups within the regulating jurisdiction.

Gillette, *supra* note 7, at 450–51. See also, e.g., *W. Lynn Creamery, Inc. v. Healy*, 512 U.S. 186, 188 (1994) (invalidating tax and subsidy scheme favoring in-state producers of milk); *Carbone, Inc. v. Town of Clarkstown*, 511 U.S. 383, 386 (1994) (invalidating law forcing state residents to deliver their waste to a private in-state waste transfer facility).

D. A Revised Approach to Judicial Review of State Patents

In stark contrast to the Court in *Bonito*, as well as prior scholars' approaches,²⁴⁶ this Article proposes that, with three major exceptions, states should be able to grant patents outside the bounds of the Patent Act and unrestrained by the limitations of the IP Clause. Courts should strike down state patents in three circumstances: (1) a state patent holder seeks a U.S. patent on the same invention as is covered by his or her state patent in contravention of the Patent Act's historic relinquishment provision;²⁴⁷ (2) a state patent directly conflicts with a valid U.S. patent, in contravention of the Supremacy Clause;²⁴⁸ or (3) a state patent violates the dormant Commerce Clause.²⁴⁹ Each of these scenarios is discussed in turn below.²⁵⁰

246. Lichtman saw judicial review (apparently under the Patent Act or the IP Clause) as a "second line of defense" should states "err" in granting patent-like rights. Lichtman, *supra* note 15, at 731. He suggested that states' authority to grant patent-like rights should be limited to passing narrowly tailored anti-copying laws specifically directed at helping developers of innovations in vulnerable markets recoup the costs of development. *See id.* at 730–31.

247. Patent Act of 1793 § 7, ch. 11, 1 Stat. 317 (February 21, 1793).

248. U.S. CONST. art. I, § 8, cl. 8; U.S. CONST. art. V, § 1, cl. 2.

249. U.S. CONST. art. I, § 8, cl. 3.

250. Today it seems clear that most legal challenges to state patents would be adjudicated by federal courts based on their exclusive jurisdiction over all cases "relating to patents[.]" *See* 28 U.S.C. § 1338(a) (2011) ("The district courts shall have original jurisdiction of any civil action arising under any Act of Congress relating to patents, plant variety protection, copyrights and trademarks. No State court shall have jurisdiction over any claim for relief arising under any Act of Congress relating to patents, plant variety protection, or copyrights.") Congress reformed § 1338 in 2011, after the Supreme Court held that a counterclaim of patent infringement brought in state court did not necessarily fall within the Federal Circuit's exclusive jurisdiction, in order to clarify that state courts cannot hear such counterclaims. *See* *Holmes Group, Inc. v. Vornado Air Circulation Systems, Inc.*, 535 U.S. 826, 831 (2002); *see also* *Leahy-Smith America Invents Act*, Pub. L. No. 112-29, § 19(a), 125 Stat. 284 (2011) (codified at 28 U.S.C. § 1338(a)). Even a case presenting only claims created by state law can still be subject to federal jurisdiction if the case involves a federal issue that is (1) necessarily raised, (2) actually disputed, (3) substantial, and (4) capable of resolution in federal court without disrupting the federal-state balance approved by Congress. *Grable & Sons Metal Prods., Inc. v. Darue Eng'g & Mfg.*, 545 U.S. 308, 314 (2005); *see also* *Gunn v. Minton*, 133 S. Ct. 1059 (2013) (holding attorney malpractice claim, which required deciding whether experimental use defense to the on-sale bar to patent validity would have prevailed if raised earlier in a federal patent infringement suit, did not "arise under" federal law for purposes of § 1338 and was within the jurisdiction of a state court). For a recent analysis of federal court jurisdiction vis-à-vis state courts, *see* Paul R. Gugliuzza, *Patent Law Federalism*, draft dated 7/12/2013, presented at IP Scholars August 8, 2013 (reviewing the reasons why federal courts have exclusive jurisdiction over patent cases, and concluding that few would choose to litigate a patent case in state court even if jurisdiction were made concurrent).

1. Relinquishment upon Obtaining a U.S. Patent

The clearest limit on state patents is triggered when inventors attempt to rely on both state and federal patents for the same invention at the same time. Thomas Jefferson recognized this problem after his term as the first Secretary of State, where he was responsible for reviewing patent applications and issuing patents.²⁵¹ At Jefferson's behest, the Patent Act of 1793 provided that a state patent would be automatically relinquished if the patentee obtained a patent from the U.S. government for the same invention, and that applying for a U.S. patent would be evidence of such relinquishment.²⁵² Jefferson thought the relinquishment requirement was important because it would prevent U.S. patentees who possessed state patents from getting an unfair advantage over U.S. patentees who did not.²⁵³

Today, this problem would be less likely to arise. Ever since the overhaul of the Patent Act in 1836, patent applications have been reviewed by professional examiners to determine whether an invention meets the Act's requirements of patentability.²⁵⁴ The Patent Act does not allow inventors to obtain patents for inventions that were "*patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.*"²⁵⁵ Accordingly, inventors possessing state patents would generally be preempted from later applying for a federal patent on the same invention. That said, the Patent Act makes certain exceptions—most notably, for disclosures made by the inventor him or herself or disclosures made by third parties after the inventor has previously made a "public disclosure" one year or less before the effective patent filing

251. NATURE OF THE IP CLAUSE, *supra* note 45, at 437–38.

252. The Patent Act of 1793 required inventors who obtained U.S. patents to automatically "relinquish" any patents granted by a state "before its adoption of the [Constitution.]" Sec. 7, Act of February 21, 1793, 1 Stat. 317. *See also* NATURE OF THE IP CLAUSE, *supra* note 45, at 437 (quoting language that ultimately became a part of the 1793 statute). The substantially revised Patent Act of 1836 does not contain this provision. Patent Act of 1836, Ch. 357, 5 Stat. 117 (July 4, 1836).

253. *See* NATURE OF THE IP CLAUSE, *supra* note 45, at 437 (discussing Jefferson's early draft of the preemption provision).

254. *See* MERGES & DUFFY, *supra* note 26, at 8 (describing institution of formal examination system in 1836).

255. 35 U.S.C. § 102(a)(1) (as amended in 2011) (emphasis added). This provision of the AIA has a similar effect as the old Section 102 in the 1952 Patent Act, though it changes the crucial date from the date of invention to the date of filing. *See* Robert P. Merges, *Priority and Novelty Under the AIA*, 27 BERKELEY TECH. L.J. 1023, 1023–24 (2012) [hereinafter *Priority and Novelty*]. This reflects the Patent Act of 1952's notion of a one-year "grace period." *See id.* at 1025 (explaining that the "grace period provision" is an exception to the novelty rule).

date.²⁵⁶ Therefore, public disclosures made by inventors in state patents could potentially qualify for an exception to the Patent Act's novelty bar so long as they are made within one year of filing for the U.S. patent.²⁵⁷ This means, theoretically, that the inventor could fall under the exception by obtaining, for example, a thirty-year New York patent and then applying a few months later for a U.S. patent. The inventor would either get a U.S. patent with a new filing date or get the benefit of the state patent filing date.²⁵⁸ This would effectively lead to around twenty years of nationwide protection followed by ten years of protection only in New York.²⁵⁹

However, even though the Patent Act no longer contains the 1793 Act's relinquishment provision, the Constitution itself may require inventors to relinquish any state patents they possess upon obtaining U.S. patents for the same invention. The IP Clause gives Congress power to secure inventors' "exclusive Right to their respective . . . Discoveries."²⁶⁰ James Madison's statement in the *Federalist* indicates that the reason the Framers believed this power was necessary was that states could not "separately make effectual provision" for patents (or copyrights) due to their limited jurisdictions.²⁶¹ The entire basis for giving Congress the power to grant patents was that states could not effectively protect the exclusive rights of inventors wishing to market their inventions in interstate commerce. Given this rationale, it seems reasonable to conclude that if the Framers had thought about it, they would have agreed that U.S. patents should not be available when an inventor

256. 35 U.S.C. § 102(b)(1). See also *Priority and Novelty*, *supra* note 255, at 1031 (explaining the constitutional disclosure provisions).

257. 35 U.S.C. § 102(b).

258. 35 U.S.C. § 102(b). For purposes of comparison, those who obtain patents in countries that are part of the Paris Convention and then apply for a U.S. patent get the benefit of the filing date of their foreign patent if they file for the U.S. patent within twelve months of the foreign filing date. 35 U.S.C. § 119. See also MERGES & DUFFY, *supra* note 26, at 498–99.

259. In my opinion, overlapping state and federal patent rights would be confusing and unnecessary. But the possibility of state-level term extensions is another matter. Justice Kent's dicta in *Livingston* suggested that, as of 1812, states could grant state patents for inventions whose U.S. patents had expired. *Livingston v. Van Ingen*, 9 Johns 507, 581 (N.Y. 1812). Thus, in this hypothetical, New York could grant a separate ten-year patent to the inventor following the expiration of his or her U.S. patent, with the same effect of an additional ten years of exclusivity only within New York. This would effectively serve as a localized patent extension. See, e.g., *Evans v. Jordan*, 9 Cranch 199, 202–04 (1815) (upholding a private bill giving Oliver Evans another fourteen years' worth of U.S. exclusivity for his flour mill). Today, the FDA grants term extensions for pharmaceutical drugs. Roin, *supra* note 15, at 564–68.

260. U.S. CONST. art. I, § 8, cl. 8.

261. THE FEDERALIST NO. 43 (James Madison), available at <http://www.constitution.org/fed/federa43.htm>.

decided, for whatever reason, that a state patent *was* an “effectual provision.” The states themselves appeared to accept this limitation: some of the states indicated in patents they granted after 1790 that the state grant would be void if the inventor later obtained a U.S. federal patent for the same invention under the Patent Act.²⁶² Given this history, the IP Clause, in conjunction with the Supremacy Clause requiring states to follow federal law, should trigger a direct conflict when an inventor tries to rely on both federal and state patents for the same invention at the same time and mandate invalidation of the state patent in favor of the federal patent.²⁶³

2. Direct Conflicts with U.S. Patents

The second limit on state patents, which Justice Kent recognized in *Livingston*, is that any state patent that directly conflicts with a U.S. patent will be invalid, so long as the U.S. patent holder proves that the state patent infringes the U.S. patent and that the U.S. patent is valid.²⁶⁴ This theory is based on direct conflict preemption principles and a plain reading of the Constitution.²⁶⁵ The IP Clause authorizes Congress to secure to inventors the “exclusive Right . . . to their respective Writings and Discoveries,”²⁶⁶ and the Supremacy Clause states that the Constitution and the laws of the United States “shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.”²⁶⁷ Once a U.S. patent is issued to an inventor pursuant to the Patent Act, states are generally bound by the Supremacy Clause to

262. See BUGBEE, *supra* note 31, at 102 (discussing avoidance clause in a New Hampshire patent for “building Chimneys and altering those already built”).

263. See U.S. CONST. art. I, § 8, cl. 8 (explaining the general right of Congress to grant patents and copyrights); U.S. CONST. art. VI, cl. 2 (Supremacy Clause). Besides state-level “term extensions,” mentioned in note 259, *supra*, another way to get around the preemption provision would be for a state to grant patents lasting under one year. Upon expiration of the state patent, the inventor could still apply for U.S. patents on the same invention, assuming the state patent falls within the § 102(b) grace period or is treated like a foreign patent under § 119.

264. *Livingston*, 9 Johns at 582–83.

265. Kent used Alexander Hamilton’s constitutional test for preemption. *Livingston*, 9 Johns at 576. Today, there are a number of constitutional and statutory preemption doctrines that invoke a similar principle of “direct conflict” or “actual conflict” with federal law. See, e.g., Dan L. Burk, *Protection of Trade Secrets in Outer Space Activity: A Study in Federal Preemption*, 23 SETON HALL L. REV. 560, 606 (1992–1993) (explaining the benefits of a conflict preemption approach).

266. U.S. CONST. art. I, § 8, cl. 8.

267. U.S. CONST. art. VI, cl. 2.

respect and uphold that right.²⁶⁸ Thus, a state patent that overlaps with a U.S. patent would, if properly challenged in federal court, “be obliged to yield to the [U.S.] patent right, as being founded on the paramount law.”²⁶⁹

The preexistence of U.S. patents is a problem that other scholars have encountered in proposals intended to promote commercialization of unworked U.S. patents.²⁷⁰ However, in the context of state patents, the Supremacy Clause already provides a framework for addressing this problem. Absent some other form of federal authorization for the state legislation, if a court finds that a state patent infringes a U.S. patent, the court would be bound to provide “competent redress.”²⁷¹ Under the Patent Act, the court could grant damages.²⁷² In addition, the Patent Act authorizes injunctive relief.²⁷³

268. See *Livingston*, 9 Johns at 582.

269. *Id.* (“If, then, the respondents were in possession of a [U.S.] patent for their steam-boat, as original inventors, our statute prohibition . . . would possibly, before a competent tribunal, be obliged to yield to the patent right, as being founded on the paramount law.”).

270. Ted Sichelman addresses the problem of potential conflicts between commercialization patents and invention patents, concluding that commercialization patent holders should not be subject to injunctions from the holders of un-worked U.S. patents and should be limited to a fixed, small percentage royalty, such as one to two percent. Sichelman, *Commercializing Patents*, *supra* note 15, at 405.

271. *Livingston*, 9 Johns at 582–83.

272. 35 U.S.C. § 284 (2006). It is unlikely that the patentee could also successfully sue the state for damages. See *Fla. Prepaid Postsecondary Educ. Expense Bd. v. Coll. Sav. Bank*, 527 U.S. 627, 647–48 (1999) (holding that a state was immune from suit in federal court for patent infringement claims where Congress had unsuccessfully tried to abrogate state immunity for such lawsuits).

273. 35 U.S.C. § 283 (2006) (“The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.”). According to the Supreme Court’s decision in *Ebay, Inc. v. Mercexchange, LLC*, the federal courts have discretion whether to grant injunctive relief. 547 U.S. 388, 392 (2006) (holding that plaintiffs in patent cases do not automatically get injunctions and relief may be limited to money damages appropriate to compensate for any infringement that may have occurred). In his concurring opinion, Justice Kennedy suggested that in deciding whether to enjoin a losing defendant’s activity, the court should consider whether the plaintiff was using his patent not “as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.” *Id.* at 396 (Kennedy, J., concurring). See also Sichelman, *Commercializing Patents*, *supra* note 15, at 405 n.366 (explaining Justice Kennedy’s pronouncement that “an injunction may not serve the public interest” and that his concurring opinion is “consistent with a market experimentation theory”). Therefore, if the U.S. patentee is not currently practicing the invention and is simply using the patent to extract exorbitant license fees, the U.S. patent holder may be limited to damages. See *id.* at 405–06 (noting similar operation of *Ebay*’s rule on the author’s proposed commercialization patent scheme).

3. The Dormant Commerce Clause

a. The Risk of Local Protectionism and Races to the Bottom

As explained above in Part V.C., the *Bonito* Court erred in its presumption that state patents would necessarily hinder rather than promote innovation. The bigger problem, which the Court only hinted at, is that, like other state business incentives, state patents might be abused to promote local interests at the expense of national interests and trigger wasteful “races to the bottom” among states for business activity and revenues.²⁷⁴ For instance, a state could begin offering fifty-year patents as a way to compete with other states for the best inventors and for patent filing fees, resulting in overly long and broad rights that are adverse to public welfare.²⁷⁵ This arguably occurred when states were exclusively responsible for granting patents during the 1780s and granted remarkably broad and overlapping patents for the steamboat to the same or different inventors.²⁷⁶ Even when states grant patents that lead to more socially optimal levels of innovation *within* the state, this could

274. A paradigmatic example of a “race to the bottom” comes from state incorporation laws, which provide companies with the privilege of being organized under the laws of the state or doing business in the state. Many have argued states have incentives to craft lenient incorporation laws in order to attract corporations, but that this is to the potential detriment of other states and corporate shareholders, who suffer from rules that are overly favorable to management. Lucian A. Bebchuk, *Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law*, 105 HARV. L. REV. 1435, 1438 (1992). As already mentioned, another example of a “race to the bottom” is R&D tax credits. Some argue that states have created overly favorable credits in order to attract or retain businesses, and that these credits have resulted in losses to local taxpayers when states pay too much and deadweight loss from the national perspective because any gains created in one jurisdiction may be due to less investment in another. See Gillette, *supra* note 7, at 451 (summarizing this argument and other arguments made by opponents of state and city locational incentives).

275. Attorney General William Wirt made this argument in *Gibbons v. Ogden*, arguing that states would compete against one another to offer the most attractive patent rights in order to convince inventors to locate in their territories. 22 U.S. 1, 169 (1824) (“This concurrent legislation would degenerate into advertisements for custom. These powers would be in the market, and the highest bidder would take all.”). Note that because states must also compete with U.S. patents for applicants and filing fees, they may be even more likely to provide excessive terms and scopes due to a “ratchet effect.” Most reasonable inventors would not accept a state patent covering precisely the same subject matter and with precisely the same term and scope as a U.S. patent. Therefore, they would demand state patents with longer terms or broader scopes on otherwise unpatentable subject matter. Thanks to Jack Balkin for this point.

276. See Edward C. Walterscheid, *Priority of Invention: How the United States Came to Have a “First-to-Invent” Patent System*, 23 AIPLA Q.J. 263, 269–77 (1995) (discussing a patent battle between two steamboat inventors who each claimed state patent rights); Merges & Reynolds, *supra* note 119, at 45, 48–49 (explaining the problem of conflicting steamboat monopolies); *State Patent Laws in the Age of Laissez Faire*, *supra* note 32, at 78–79 (describing the broad New York steamboat patent).

simply be the result of firms and investors relocating or investing less in other states.²⁷⁷ States could also adopt any number of “beggar thy neighbor” policies, such as patents that effectively exclude out-of-state competitors from entering local markets. This arguably occurred in *Bonito*, where Florida adopted a law that effectively prevented Tennessee boat hull makers from selling boat hulls made using plug molds in Florida.²⁷⁸ This, in turn, could lead to reprisals from other states—for instance, a Tennessee law prohibiting copying of some product Florida businesses wish to sell in Tennessee. The end result could be a “thicket” of un-navigable state patent rights, many of which are not actually necessary to promote innovation.²⁷⁹

Unjustified or over-protective patents and “thickets” of patents within a local industry would likely generate deadweight loss and unnecessary transaction costs for residents and voters in the granting state.²⁸⁰ But out-of-state firms and consumers would be particularly at risk because their interests may not have been taken into account in legislators’ decision to grant the patents.²⁸¹ True, state patents only apply in the granting state and do not directly harm consumers and businesses

277. At least one economic study has attempted to show that increases in local R&D investment as a result of state R&D tax credits are due to less investment in other states. See Wilson, *supra* note 7, at 433 fig.1.

278. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 164 (1989).

279. On thickets and patent gridlock, see Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 *SCI.* 698, 698–701 (1998) (discussing patent gridlock in the context of biomedical research). See also Michael Mattioli, *Communities of Innovation*, 106 *NW. U. L. REV.* 103, 110–16 (2012) (describing the problem of patent gridlock). That said, states could adopt policies to facilitate licensing, such as online clearing-houses, or rely on private ordering solutions like collective rights organizations. See Kirti Gupta, *The Patent Policy Debate in the High-Tech World: A Literature Review* 3–4 (Northwestern Law Sch. Searle Center Working Paper, 2013), available at http://www.law.northwestern.edu/faculty/programs/searlecenter/workingpapers/documents/Gupta_patent-policy-debate-literature-review.pdf (discussing private ordering solutions to patent thickets as well as the difficulty of finding empirical evidence that patent thickets exist). For a general discussion of private ordering solutions to IP gridlock, including “collective rights organizations,” see Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 *CAL. L. REV.* 1293 (1996).

280. This is arguably what happened in *Gibbons*, where the well-connected and rich businessman Robert Livingston convinced New York to transfer John Fitch’s patent on the steamboat to him. Thereafter, steamboat fares rose to excessive rates across the board until the Supreme Court struck down the monopoly. Hrdy, *State Patents in the Age of Laissez-Faire*, *supra* note 32, at 78.

281. Some argue that out-of-state interests can be protected “by what amounts to a system of virtual representation” if similarly situated interests are located in the state and participating in the local political process. See, e.g., Kellen S. Dwyer, *Dormant Commerce Clause Review of Public-Private Partnerships After United Haulers: A Competitive Bidding Solution*, 18 *VA. J. SOC. POL’Y & L.* 203, 222 (2011) (explaining John Hart Ely’s virtual representation theory).

in other states.²⁸² In fact, they may benefit other states by providing useful information that is free for copying and use outside the state.²⁸³ However, state patents could significantly raise the cost of business for out-of-state firms, as occurred in *Bonito*,²⁸⁴ or raise prices for out-of-state consumers of certain localized goods and services.²⁸⁵

b. The Applicability of the Dormant Commerce Clause to State Patents

As already alluded to, concern for out-of-state interests is at the heart of the Supreme Court's modern dormant Commerce Clause jurisprudence. Although many contend that dormant Commerce Clause jurisprudence is confused,²⁸⁶ "[t]here is general agreement on the objectives that the Clause seeks to serve, typically phrased in terms of creating a 'national market,' or preventing one jurisdiction from discriminating against another."²⁸⁷ Adopting a "political process" theory of judicial review, courts historically gave deference to state laws that treated in-state and out-of-state interests alike, and remained skeptical of laws that are more favorable to in-state interests or underrepresented minorities.²⁸⁸ Courts already apply this doctrine regularly in addressing

282. *Goldstein v. California*, 412 U.S. 546, 558 (1973).

283. See, e.g., Frischmann & Lemley, *supra* note 14, at 258 (citing the development of the computer-based spreadsheet as a beneficiary of this phenomenon). See also Hrdy, *supra* note 10, at 83 (discussing the effect of innovation spillovers).

284. Again, an example is New York's patent on the steamboat in *Gibbons*, which prevented Thomas Gibbons, a New Jersey operator, from operating steamboats in New York without a license. *Gibbons v. Ogden*, 22 U.S. 1, 2 (1824).

285. An example is the hypothetical California patent on the high-density olive harvesting techniques mentioned above. See *supra* Part III.C. By shielding an in-state company from competition (both domestic and out-of-state), the patent might raise the price of California olives and California olive oil for out-of-state consumers.

286. Justice Clarence Thomas and Justice Scalia have suggested abandoning the dormant Commerce Clause doctrine. See, e.g., *United Haulers Ass'n., Inc. v. Oneida-Herkimer Waste Mgmt. Auth.*, 550 U.S. 330, 349 (2007) (Thomas, J., concurring) ("The negative Commerce Clause has no basis in the Constitution and has proved unworkable in practice."); *Tyler Pipe Indus., Inc. v. Washington State Dep't of Revenue*, 483 U.S. 232, 260 (Scalia, J., concurring in part and dissenting in part). See also Edward A. Zelinsky, *Restoring Politics to the Commerce Clause: The Case for Abandoning the Dormant Commerce Clause Prohibition on Discriminatory Taxation*, 29 OHIO N.U. L. REV. 29, 29 (2002) ("I conclude that the time has come to scrap the dormant Commerce Clause prohibition on discriminatory taxation. Since the judicially-created prohibition has served its historic purpose, to create a single common market of the United States, it can now safely be laid to rest."). But, as discussed below, a clear application of the doctrine does in fact exist in the state patent context.

287. *Gillette*, *supra* note 7, at 493 (citing *West Lynn Creamery, Inc. v. Healy*, 512 U.S. 186, 210 (1994) (Scalia, J., concurring)).

288. The "political process theory" of the dormant Commerce Clause dates back to at least 1938, when Justice Harlan Stone wrote that "when the regulation is of such a character that its

challenges to a wide variety of state business incentives, including state tax credits.²⁸⁹ There is no reason it should not apply to state patents as well.

But to the bemusement of scholars like Arthur Miller, this is not the direction the Supreme Court has taken when addressing state IP rights.²⁹⁰ In *Goldstein*, where the Court decided states have concurrent power to create IP protections, the Court did not address the dormant Commerce Clause directly but stated that the doctrine's major concern—namely, local protectionism at the expense of other states—was not a significant risk for state copyright laws due to their limited jurisdiction.²⁹¹ If one state granted a copyright in certain kinds of creative works but other states did not, citizens from other states would still be free to make unauthorized copies of those works within their own borders.²⁹²

burden falls principally upon those without the state, legislative action is not likely to be subjected to those political restraints which are normally exerted on legislation where it affects adversely some interests within the state.” *South Carolina State Highway Dep’t v. Barnwell Bros., Inc.*, 303 U.S. 177, 185 n.2 (1938). See also *United Haulers*, 550 U.S. at 332 (upholding state forced-use law requiring delivery of all in-state trash to a state-owned facility in part because the main burden of the law—the increased price of waste collection—fell mainly on state residents rather than out-of-state residents); Gillette, *supra* note 7, at 450 (explaining the “political process theory” view); Hellerstein & Coenen, *supra* note 7, at 806 (arguing that the court should only strike down a state tax incentive that favors in-state over out-of-state activities and “implicate[s] the coercive power of the state”); Dwyer, *supra* note 282, at 222 (explaining that the “Court has struck a balance” by giving deference to laws that treat in-state and out-of-state businesses the same and “skeptically reviewing legislation that treats local firms better than out-of-state firms . . . because it is thought likely that local firms obtained the favorable legislation via the political advantage they enjoy over their out-of-state counterparts”).

289. For a thorough canvassing of recent jurisprudence and articles on Commerce Clause challenges to tax incentives designed to entice companies to locate and do business in the state, see BRANNON P. DENNING, BITTKER ON THE REGULATION OF INTERSTATE AND FOREIGN COMMERCE § 8.05 n.51 (2d. ed. 2012). The Supreme Court recently declined to rule on the constitutionality of the state of Ohio's aggressive tax credit scheme, which allowed businesses to receive credit against the state franchise tax for qualifying investments of “new manufacturing machinery and equipment” used within the state, finding that the plaintiffs lacked standing to bring the challenge. See *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 344–47 (2006) (overturning *Cuno v. DaimlerChrysler, Inc.*, 386 F.3d 738 (6th Cir. 2004), which struck down Ohio's tax credit scheme under the dormant Commerce Clause; and dismissing the case based on lack of Article III standing because the plaintiff taxpayers' injury was too “conjectural or hypothetical” and not redressable). See also Jonathan Edwards, Casenote, *DaimlerChrysler v. Cuno: The Supreme Court Hits the Brakes on Determining the Constitutionality of Investment Incentives Given by States to Corporate America*, 58 MERCER L. REV. 1411, 1420–23 (2007) (explaining the Court's rationale in *DaimlerChrysler Corp. v. Cuno*).

290. Miller, *supra* note 15, at 749.

291. *Goldstein v. California*, 412 U.S. 546, 558 (1973).

292. In investigating “whether, in actual operation, the exercise of the power to grant copyrights by some States will prejudice the interests of other States[.]” the Court explained that “a copyright granted by a particular State has effect only within its boundaries. If one State grants such protection, the interests of States which do not are not prejudiced since their citizens remain free to

The Court recognized that California's prohibition on unauthorized sound recordings might adversely affect other states in which the practice remained legal because those states would no longer be able to export unauthorized sound recordings to California.²⁹³ However, the Court concluded, the conflict was "neither so inevitable nor so severe as to compel the conclusion, that state power has been relinquished to the exclusive jurisdiction of the Congress."²⁹⁴ Fifteen years later, in *Bonito*, the Court apparently determined that *Goldstein*'s reasoning did not apply to "patent-like" protections. The Court stated that if states were free to grant "patent-like" rights, then they might be tempted to "afford patent-like protection to particularly favored home industries, effectively insulating them from competition from outside the State."²⁹⁵ But the Court did not apply or even mention the dormant Commerce Clause, even though its potential applicability should have been obvious.²⁹⁶ The next section provides the doctrine the Supreme Court should have used from the start to address patents and patent-like rights granted by the states.

copy within their borders those works which may be protected elsewhere." *Id.*

293. *Id.*

294. *Id.* at 558–59 ("However, this conflict is neither so inevitable nor so severe as to compel the conclusion, that state power has been relinquished to the exclusive jurisdiction of the Congress. . . . We do not see here the type of prejudicial conflicts which would arise, for example, if each State exercised a sovereign power to impose imposts and tariffs; nor can we discern a need for uniformity such as that which may apply to the regulation of interstate shipments."). Some argue that the Court's conclusion underestimates the significant impact that a ban on importation of "pirated records" would have on the economies of other jurisdictions where the sale of pirated tapings was not illegal. See, e.g., Miller, *supra* note 15, at 750; Edward Samuels, *Goldstein v. California: Breaking up Federal Copyright Preemption*, 74 COLUM. L. REV. 960, 969 (1974).

295. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 163 (1989). Presumably, the Court was worried that Florida's ban on copying boat hulls using the direct plug molding process with the intent to sell them would operate as a de facto tariff, preventing out-of-state producers of plug-molded boat hulls from selling their wares in the state. The *Bonito* Court did not mention *Goldstein*'s analogous discussion of the effects of California's ban on imports of pirated records. The Court's statement in *Bonito* suggests that it was distinguishing the pirated records example, but a meaningful distinction is difficult to see. Preventing the import of unauthorized copies of sound recordings into California benefited California's sound recording industry at the expense of distributors in states where copied sound recordings remained legal. Preventing the import of boat hulls into Florida that were made using the plug molding process benefited Florida's boat hull manufacturers at the expense of out-of-state competitors, such as those in Oklahoma, that could use plug molding.

296. The dormant Commerce Clause argument was never raised, even though *Thunder Craft Boats, Inc.* was a Tennessee corporation. After *Bonito Boats, Inc.* sued *Thunder Craft* in a Florida Circuit Court to enforce the Florida law, *Thunder Craft* moved to dismiss based only on the ground that the statute conflicted with federal patent law. *Id.* at 145.

c. A Dormant Commerce Clause Doctrine for State Patents

Under the dormant Commerce Clause, courts will strike down state laws that facially discriminate against out-of-state entities—for instance, by expressly prohibiting out-of-state companies from doing business or selling merchandise in the state.²⁹⁷ On the other hand, when a party challenges a facially neutral state law that has adverse effects on interstate commerce, courts apply some variety of balancing test.²⁹⁸ Under the most common variant, the *Pike* test, the state law “will be upheld unless the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits.”²⁹⁹

If a state’s patents are only available, without exception, for local companies, these patents would likely be treated as facially discriminatory and highly suspect.³⁰⁰ On the other hand, if state patents are equally available to all innovators regardless of location, state patents would not be treated as facially discriminatory incentives.³⁰¹

As described above, historically, state patents were often granted to foreigners.³⁰² These patents usually had some form of a local working requirement, obligating the patentee to develop the technology in the state within a certain period of time to maintain the patent.³⁰³ But this does not imply a requirement of local residency or investment in local

297. *Reeves, Inc. v. Stake*, 447 U.S. 429, 429 (1980) (explaining the policy at issue, which confined the sale of cement to residents).

298. On the balancing tests federal courts use in dormant Commerce Clause cases, see BRANNON P. DENNING, BITTKER ON THE REGULATION OF INTERSTATE AND FOREIGN COMMERCE § 6.05 (2d ed. 2012). See also *Enge*, *supra* note 107, at 347–53 (describing many different tests that federal courts have applied).

299. *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970). Under the *Pike* test, “[w]here the statute regulates even-handedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.” *Id.*

300. See *C & A Carbone, Inc. v. Town of Clarkstown, N.Y.*, 511 U.S. 383, 383–93 (1994).

301. Although courts may deem state laws that harm both in-state and also out-of-state interests facially discriminatory, “[f]or purposes of the dormant Commerce Clause, discrimination is often viewed as disparate treatment of in-state and out-of-state interests.” Jennifer L. Larsen, *Discrimination in the Dormant Commerce Clause*, 49 S.D. L. REV. 844, 852 (2004). “In most constitutional doctrines a statute is deemed to be facially discriminatory if the prohibited discrimination is found on the face of the statute.” *Id.* at 861–62.

302. As noted in Part II.B., historically, state and colonial patents were used to encourage foreigners to import their inventions to the state issuing the patent. See NATURE OF THE IP CLAUSE, *supra* note 45, at 45–46.

303. See BUGBEE, *supra* note 31, at 57–103 (describing variety of working requirements in colonial and state patents); *Owning Ideas*, *supra* note 33, at 103 (discussing colonial working clauses), 109–10 (noting that state patents retained major features of colonial patents).

plants and equipment, so long as the patentee has the capacity to function in multiple locations and still ensure local working in the granting state.³⁰⁴ Thus, for example, the holder of a Wyoming patent could be a multi-national corporation with its operations located mainly in New York and outsourcing most of its work to China. In contrast, John Fitch, a Pennsylvania resident, was unable to meet New York's working requirement, leading to voidance of his steamboat patent in New York.³⁰⁵

State patents that do not facially discriminate against out-of-staters should be treated under a balancing test, asking whether the state patent imposes a burden on interstate commerce and competition that is "clearly excessive in relation to the putative local benefits."³⁰⁶ Building on this general framework, courts should apply the simple three-part analysis proposed below. Importantly, unlike in *Bonito*, where the Court asked whether the state law over-protected boat hulls in proportion to their "technological merit,"³⁰⁷ this is not a patent efficiency analysis in disguise. The goal is to locate negative externalities on out-of-state residents, or unrepresented minority interests in the state, and undue interference with interstate competition.³⁰⁸

304. The Court has been suspicious of tax credits that only apply to companies that produce their goods in the state, see *New Energy Co. of Ind. v. Limbach*, 486 U.S. 269, 278 (1988), and state laws that require producers to perform functions like processing and inspections in the state prior to exporting their products because they deprive out-of-state processors or inspectors of the "local demand for their services." See, e.g., *Pike*, 397 U.S. at 142 (striking down Arizona statute that required all Arizona-grown cantaloupes to be packaged within the state prior to export). See also Dwyer, *supra* note 282, at 207–08, nn.26–30. This suggests state patents requiring that R&D or production related to the patented invention to occur in the state would be suspect as well. See also discussion of *Carbone*, *infra*.

305. Hrdy, *State Patents in the Age of Laissez-Faire*, *supra* note 32, at 78.

306. *Pike*, 397 U.S. at 142.

307. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 159 (1989). The Court stated:

The Florida scheme offers this protection for an unlimited number of years to all boat hulls and their component parts, without regard to their ornamental or technological merit. Protection is available for subject matter for which patent protection has been denied or has expired, as well as for designs which have been freely revealed to the consuming public by their creators.

Id. See also Heald, *supra* note 237, at 987 (stating the Florida statute in *Bonito* provided boat manufacturers a partial monopoly without determining that the public would benefit from better boat designs).

308. See Gillette, *supra* note 7, at 450, 493 (stating that one general purpose of the Commerce Clause is to prevent discrimination against out of state interests and discrimination against politically powerless interstate interests based on protectionist policies); Dwyer, *supra* note 282, at 220–21 (citing Supreme Court discussion of the built-in protection in-state groups with political power have against state monopolization).

1. Putative Local Benefits

First, to determine the strength of the state's interest in granting the patent, courts should consider whether the state rationally believes the patent is likely to ensure introduction of a useful innovation that leads to specific local benefits. These local benefits might include solving a local problem, a new use for state resources, or environmental conservation.

In making this assessment, courts should be wary of post hoc state patents granted for innovations already available in the state or easily purchased in interstate commerce.³⁰⁹ For example, in *Bonito*, Florida granted "patent-like" protection for a type of boat hull that was not only in the public domain but was already manufactured and sold in the state.³¹⁰ This type of protection may indicate that the decision to grant the patent resulted from rent-seeking and lobbying by favored local industries, rather than a legitimate desire to foster more investment in local innovation.³¹¹ But courts should not necessarily strike down individual patents simply because they are granted after-the-fact. Such laws may be designed to reward development costs and thereby create ex ante incentives to innovate in the future.³¹² Courts should simply scrutinize the record for signs of lobbying or corruption; if those signs are absent, then courts must infer that the state law was intended to promote the local interest indicated. In *Bonito*, the Court found that "[t]he sparse legislative history surrounding its enactment indicates that [the Florida law] was intended to create an inducement for the improvement of boat hull designs."³¹³ This inducement should have been sufficient to indicate a putative local benefit existed. As explained

309. See *Merges & Reynolds*, *supra* note 119, at 59 (suggesting that post-hoc rewards are less likely to encourage taking innovation risks "on the front end" and may be the result of "legislative whim or influence").

310. *Bonito*, 489 U.S. at 144–45, 159.

311. See *id.* at 162–63 (noting states could grant patent-like protection to favored home industries without national uniformity of intellectual property law). Coenen suggests that when applying dormant Commerce Clause doctrine courts take into account the political process under which the patent was granted and are wary of rent-seeking. Coenen, *supra* note 121, at 1031–35; Daniel T. Coenen, *Where United Haulers Takes Us*, 95 IOWA L. REV. 541, 557–58 (2010) [hereinafter Coenen, *United Haulers*].

312. See Lichtman, *supra* note 15, at 719–23 (arguing the *Bonito* law created an efficient innovation incentive by rewarding the cost and risk involved in undertaking the development of better boat hulls).

313. *Bonito*, 489 U.S. at 158 (citing Fla. H.R. Meeting of Transp. Comm. Tr. (May 3, 1983), reprinted at App. 22 (commenting that "there is no inducement for [a] quality boat manufacturer to improve these designs and secondly, if he does, it is immediately copied. This would prevent that, and allow him recourse in circuit court").

in Part V.C., the Court should not have attempted to evaluate the efficiency of the state law.³¹⁴

2. Burden on Interstate Commerce

Second, the court must determine the burden that the state patent places on interstate commerce. Assuming the state patent does not overtly disfavor out-of-state interests, the primary consideration for this factor should be whether the patent inhibits competition from out-of-state entities.³¹⁵ If the patent affects out-of-state competitors disproportionately, then the court should be more likely to strike it down. For example, in *Bonito*, Florida's "patent like right" had a direct impact on a Tennessee corporation, which was prevented from selling boat hulls made using plug molds in Florida, while boat hull manufacturers in Florida benefitted.³¹⁶ Assuming that the law did not also harm in-state sellers of boat hulls using plug molds, this result should have been a sign that this might be a "beggar-thy-neighbor" patent for a preferred local industry rather than a true innovation incentive. This may have been what the Court found, though the court did not sufficiently address the record on this point.³¹⁷

On the other hand, the fact that a state patent affects only local competition and produces no discernible negative effects on out-of-state companies should not create a safe harbor.³¹⁸ If the patent's scope is so open-ended that it effectively creates a monopoly in a defined local industry then this patent should be far more vulnerable to dormant Commerce Clause preemption.

For example, in *C & A Carbone, Inc. v. Town of Clarkstown*, the Supreme Court addressed the viability of a "forced use" rule mandating purchase of all waste-transfer services from a single, private³¹⁹ contractor

314. Wiley, *supra* note 206, at 302.

315. See *S.C. State Highway Dep't v. Barnwell Bros.*, 303 U.S. 177, 184 n.2 (1938) (stating that state regulations that provide an advantage for those in-state and burden those out-of-state have been thought to be unconstitutional).

316. *Bonito*, 489 U.S. at 145.

317. See *id.* at 163 (stating the lack of uniform federal law on intellectual property would allow states to provide patent-like protection to favored state industries).

318. See *Larsen*, *supra* note 301, at 852 (explaining view that a regulation is discriminatory if the regulation imposes greater economic burdens on those outside the state than those within).

319. A six-member majority of the Court refused to extend the principle of *Carbone* to a law that required citizens to purchase services from a *government-owned* facility, holding that the dormant Commerce Clause does not prevent states from granting exclusive rights to state-run utilities companies, so long as the government treats all *private* competitors alike. *United Haulers*

and authorizing the contractor to charge tipping fees that exceeded the rates of both in-state and out-of-state competitors.³²⁰ Similar to a state patent, one of the main purposes of the forced-use rule in *Carbone* was to allow the town to avoid paying a large, up-front sum (about \$1.4 million) in order to have the contractor construct the facility on behalf of the town. Instead, the town effectively granted the contractor an exclusive right as an alternative form of incentive to supply a costly local good.³²¹

As an illustration, imagine if the Clarkstown law were considered to be a “patent” instead of a “forced use” rule. The patent would be highly vulnerable to being struck down because it eliminated nearly all competition in the market for local waste-transfer services, whether in-state or out-of-state.³²² But imagine instead that the law granted a patent not to a supplier of trash collection services but to the local developer of a new and untested “plasma gasification” trash disposal system.³²³ In-state and out-of-state businesses alike would be free to collect trash in the state so long as they did so by non-infringing means. The burden on interstate commerce would not be nearly as great and—assuming the patent also produces a viable local benefit (i.e. a new and improved method of trash collection)—the law should be upheld as a legitimate innovation incentive.

3. Less Restrictive Alternatives

The final factor courts should consider is whether the state rationally believed a state patent, versus some other form of incentive, such as a direct payment or a loan, was the best way to encourage successful local working of the innovation.³²⁴ The primary issue to consider in this factor

Ass’n v. Oneida-Herkimer Solid Waste Mgmt. Auth., 550 U.S. 330, 342 (2007). State patents would typically be granted to private entities, not state-owned enterprises, so the exception for state-owned companies in *United Haulers* would not on its face apply to most state patents.

320. *C & A Carbone, Inc. v. Town of Clarkstown, N.Y.*, 511 U.S. 383, 387, 392–93 (1994).

321. *Id.* at 387.

322. *See Dwyer, supra* note 282, at 208 (discussing dormant Commerce Clause prohibition on laws eliminating out-of-state competition).

323. New York is experimenting with a new plasma-gasification disposal system that efficiently disposes of garbage while simultaneously recycling metals and creating usable byproducts like electricity. *See* Randy Leonard, *Plasma Gasification Raises Hopes of Clean Energy From Garbage*, N.Y. TIMES, Sept. 11, 2012, at D3.

324. *See Carbone*, 511 U.S. at 393–94 (rejecting Clarkstown’s argument that special financing was necessary because Clarkstown could have subsidized the facility through taxes or bonds). As the Sixth Circuit stated in striking down Ohio’s tax credit scheme in *Cuno*, a state tax provision that is found to burden interstate commerce must advance “a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.” *Cuno v. Daimler-Chrysler, Inc.*,

is the level of technological and market uncertainty entailed in generating and successfully developing the innovation. A high level of uncertainty would indicate that a patent is a potentially more efficient way to “pay” for development than a cash incentive.³²⁵ On the other hand, a low level of uncertainty and, even more so, a *known price* would indicate that a non-patent financing measure would work just as well or better than direct payment. For example, in *Carbone*, the Court questioned why the town did not simply use taxes or issue municipal bonds to finance construction of the waste-transfer facility when the \$1.4 million price had already been determined.³²⁶ In contrast, in the “plasma gasification” hypothetical, calculating how much the innovator would require both to recoup costs and also to make a sufficient profit to justify the risk would be much more difficult.³²⁷ The town would have a stronger justification for granting a patent for the disposal system.

VI. CONCLUSION

The Supreme Court’s current preemption doctrine effectively eliminates states’ authority to grant “patent-like” rights.³²⁸ But this Article shows that state patents could provide states with a valuable alternative to non-patent incentives such as R&D tax credits for promoting innovation and economic development in their jurisdictions. On the national level, state patents could supplement the U.S. patent system’s framework of incentives by providing protection for unpatentable innovations or patentable inventions that are difficult to commercialize. States could also generate stores of valuable information about the effect of patents in the marketplace and improve the quality of patent law by introducing and testing law and policy innovations.³²⁹ To the extent that judicial review is necessary to limit the costs state patents

386 F.3d 738, 743 (2004) (quoting *New Energy Co. of Ind. v. Lindbach*, 486 U.S. 269, 278 (1988) (emphasis added)); see also Coenen, *United Haulers*, *supra* note 311, at 547.

325. Some economists believe IP is better than non-IP incentives when value and cost are not known. See Gallini & Scotchmer, *supra* note 111, at 19. Robert Merges has argued that uncertainty of success is a major factor to consider when deciding whether a U.S. patent involves “nonobvious” subject matter that is deserving of a reward. Robert P. Merges, *Uncertainty and the Standard of Patentability*, 7 HIGH TECH. L.J. 1, 43–54 (1992).

326. *Carbone*, 511 U.S. at 394.

327. See Lichtman, *supra* note 15, at 702 (noting that an optimal state innovation incentive would offer “extra” incentives above the level of development costs to compensate innovators for the risk of innovation and help developers internalize preferences for certain goods).

328. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 156–57 (1989).

329. See note 12, *supra*.

impose on other states, courts already have an effective framework for case-by-case judicial review under the dormant Commerce Clause, making blanket preemption under the Patent Act or the Constitution both unnecessary and unwise.