

**THE PATENT OFFICE MEETS THE POISON PILL: WHY
LEGAL METHODS CANNOT BE PATENTED**

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Has our patent system lost its way? Courts, commentators, and even practitioners are increasingly pining for the good old days, when patents were granted for inventions like the Wright Brothers’ airplane, rather than Priceline.com’s name-your-own-price model of selling airline tickets over the Internet.¹

In 1998, the Federal Circuit issued its landmark *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.* decision,² which gave the United States Patent and Trademark Office (“Patent Office”) the green light to award patents for so-called “business methods,” such as Amazon.com’s “1-click” Internet sales method.³ Business methods are excluded from patentability in many countries,⁴ and the *State Street* decision holding otherwise has been roundly criticized.⁵ Several members of the current Supreme Court have expressed misgivings

1. U.S. Patent No. 5,794,207 (filed Sept. 4, 1996). For a discussion of the expansion of the number of topics that can be patented, including business method patents, see ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS 116–19, 198–200 (2004); Malla Pollack, *The Multiple Unconstitutionality of Business Method Patents: Common Sense, Congressional Consideration, and Constitutional History*, 28 RUTGERS COMPUTER & TECH. L.J. 61 (2002).

2. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999).

3. U.S. Patent No. 5,960,411 (filed Sept. 12, 1997) (issued Sept. 28, 1999).

4. See, e.g., Convention on the Grant of European Patents art. 52(2)(C), Oct. 5, 1973, 1065 U.N.T.S. 199 (excluding “methods for . . . doing business” from definition of patentable “inventions”).

5. See generally JAFFE & LERNER, *supra* note 1, at 118–19.

over business method patents.⁶ In response to this outcry, Congress passed legislation that weakened the protections afforded to business methods.⁷

Then, in 1999, the Federal Circuit held that illegal or immoral inventions are patentable, as long as they are capable of achieving their intended purpose.⁸ Thus, the Patent Office has freely granted patents for types of drug paraphernalia, even though their sale is expressly prohibited under federal law.⁹

In 2003, the Patent Office went a step further and awarded its first-ever patent monopoly for a legal method, in that case a tax strategy designed to minimize federal estate taxes through use of a grantor-retained annuity trust, categorized as a type of business method.¹⁰ The Office has issued about a dozen legal method patents since then, and an unknown number of applications for such patents are pending.¹¹

Legal practitioners have sharply criticized the patenting of legal methods on policy grounds.¹² They are rightly concerned that, among other things, the availability of patent protection will encourage legal innovators to keep their ideas secret until they are patented, rather than share them in law reviews and journals. Further, no attorney wants to pause before advising a client in order to run a patent search to make sure that no one “owns” the advice that she is about to give.

Despite their concern over the practical impact of such patents, commentators and practitioners alike have accepted the power of the Patent Office to grant patents for legal methods.¹³ This Article takes a different tack, and suggests that the Patent Office has acted beyond the scope of its power by granting legal method patents.

6. See *eBay, Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837, 1842 (2006) (Kennedy, J., concurring, joined by Stevens, Souter, & Breyer, JJ.) (expressing concern over the “potential vagueness and suspect validity” of some business method patents).

7. See 35 U.S.C. § 273 (2000) (providing a special defense to those accused of infringing a patent on “a method of doing or conducting business”).

8. See *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364 (Fed. Cir. 1999).

9. See *infra* notes 40–42 and accompanying text; see also *infra* Part IV.D.

10. See *Establishing and Managing Grantor Retained Annuity Trusts Funded by Non-qualified Stock Options*, U.S. Patent No. 6,567,790 (filed Dec. 1, 1999).

11. See *infra* Part II.B.1.

12. See Letter from Kimberly Blanchard & Andrew Braiterman, on behalf of the Tax Section of the New York State Bar Ass’n, to William M. Thomas, Chairman, House Comm. on Ways and Means, et al. (Aug. 17, 2006) (on file with author) [hereinafter NYSBA Letter]; *Issues Relating to the Patenting of Tax Advice: Hearing Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means*, 109th Cong. (2006) (statement of Dennis I. Belcher, Partner, McGuireWoods LLP), available at <http://waysandmeans.house.gov/hearings.asp?formmode=printfriendly&id=5107> [hereinafter Belcher Statement].

13. See, e.g., Erik S. Maurer, *An Economic Justification for a Broad Interpretation of Patentable Subject Matter*, 95 NW. U. L. REV. 1057, 1080 (2001) (“[L]egal strategies may be valid patentable subject matter.”).

The Patent Office's authority to grant patents is constrained by the requirements for patentability laid down by Congress in the Patent Act. One of the most fundamental of these is that only "inventions" may be patented.¹⁴ The term "invention" has been construed by the Supreme Court to mean anything "made by man" that utilizes or harnesses a "law of nature" (such as gravity, thermodynamics, or calculus) for human benefit.¹⁵ A watermill, for instance, harnesses the power of gravity to run machinery; an airplane exploits the laws of fluid dynamics to achieve lift.

Under this definition, legal methods are not "inventions." They employ or exploit "laws of man" — not laws of nature — to produce a useful result. A tax strategy, for example, uses provisions of the Internal Revenue Code to minimize tax liability. The "poison pill" employs features of state corporate law to maximize shareholder value in the face of a hostile takeover. These are useful innovations, to be sure, but they are not "inventions" within the meaning of the Patent Act and, hence, should not be patentable.

Part I of this Article provides an introduction to patent law generally, including a discussion of the policies and theories underlying the patent system. Part II focuses on method and process patents, and describes business method and legal method patents. Part III explains the Supreme Court's consistent view that the term "invention," as used in the Patent Act, refers to something that utilizes or harnesses a "law of nature" for human benefit. Part IV demonstrates that patent law ignores all other positive law for purposes of establishing patentability. Part V synthesizes the ideas laid out in the earlier Parts of the Article are synthesized to demonstrate that legal methods are not patentable because they cannot qualify as "inventions" within the meaning of the Patent Act, no matter how novel or valuable they may be. Because legal methods employ "laws of man" — not laws of nature — to achieve a useful result, they are excluded from the scope of "inventions" patentable under the Act. Part VI explains that, in contrast to legal methods, most methods of doing business do indeed qualify as "inventions" because they either save time or apply pure mathematics for human benefit. Part VII concludes the Article.

I. PATENTS GENERALLY

A. Historical and Constitutional Roots

A patent is a government-issued property right that confers on an inventor the right to exclude others from making, using, or selling her invention for a term of years, on the condition that she explains to the

14. See 35 U.S.C. § 101 (2000).

15. See *infra* Part III.C.

public exactly how to make and use the invention.¹⁶ For most intents and purposes, the holder of a patent has a state-sanctioned monopoly over the patented invention during the term of the patent.

The Venetian Republic enacted the first known patent statute in 1474; by 1600, much of Europe had established similar patent systems.¹⁷ The Statute of Monopolies, enacted in England in 1624, is “regarded by some as the foundation of the present British patent system.”¹⁸ Several American colonies exercised the power to grant patents covering their territory starting as early as 1641.¹⁹

In 1787, the Constitutional Convention approved the Intellectual Property Clause²⁰ unanimously and without debate.²¹ “The Congress shall have power to . . . promote the Progress of Science and useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries.”²² That clause grants the federal government exclusive power over a national patent system, and places the primary responsibility therefore with the legislative branch.

The first Congress asserted its authority over patents almost immediately. In 1790, it enacted a patent statute,²³ the first in a line of statutes that has continued unbroken to the present day. The Patent Act of 1836 established the Patent Office and assigned it the task of examining patents for compliance with the Act’s statutory requirements.²⁴ Currently in force is the Patent Act of 1952,²⁵ subject to some modest amendments over the years.²⁶ Congress has also been considering various proposals for patent reform over the past few years,²⁷ but it has not enacted any significant patent legislation since 1999.

B. Policy and Economic Theory

The Intellectual Property Clause is unique among the eighteen enumerated powers granted to Congress in Article I, Section 8 of the Constitution because it includes a preamble setting forth the underlying policy goal of that power. The federal government is not empowered to award patents to just anyone, or for just any reason.

16. DONALD S. CHISUM ET AL., *PRINCIPLES OF PATENT LAW* 3 (3d ed. 2004).

17. *See id.* at 11–13.

18. *Id.* at 15.

19. *See id.* at 16 n.64.

20. U.S. CONST. art. I, § 8, cl. 8.

21. *See* JAMES MADISON, *NOTES OF DEBATES IN THE FEDERAL CONVENTION OF 1787*, 478 (Ohio Univ. Press 1966).

22. U.S. CONST. art. I, § 8, cl. 8.

23. Act of Apr. 10, 1790, ch. 7, 1 Stat. 109 (1790).

24. Act of July 4, 1836, ch. 357, § 1, 5 Stat. 117 (1836).

25. 35 U.S.C. §§ 1–376 (2000).

26. *See* Maureen O’Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1178 n.2 (2000).

27. *See, e.g.*, Patent Reform Act of 2005, H.R. 2795, 109th Cong. (2005).

1. Encourage Innovation

Patents may only be granted to “Inventors” and only for the purpose of “promot[ing] the Progress of Science and useful Arts.”²⁸ This limiting preamble was probably a response to the English (and other) monarchs’ practice of granting patent monopolies to friends of the Crown, often for staple items, such as salt.²⁹ That practice was rightfully perceived as abusive, but the Founders still saw some benefit in a patent system.

Conventional economic theory predicts that, without government intervention, a society will produce too little technological innovation, which is a suboptimal result.³⁰ The animating concern of the patent system is that, once an inventor reveals her invention to the world, others may copy and sell it. Because the inventor had presumably spent time and money on researching and developing the invention while her “free-riding” competitors have not, the latter could profitably sell the invention for a lower price than that at which the inventor could and still recoup her sunk costs. Economically rational consumers would choose to buy the less expensive version from the competitor rather than the more expensive version from the original inventor, thereby dooming the inventor’s chance to profit from her invention.

Foreseeing this result from the outset, at least some people who might have otherwise spent time and money conceiving and developing new inventions will not do so, thus depriving society of valuable inventions. Similarly, even those who do try to invent will be expected to expend fewer resources in their endeavors than they would if they had a chance to profit from a successful invention.

A patent system, whereby inventors are granted a monopoly over their inventions for a term of years, counters these tendencies. During the period of exclusivity, the inventor has monopoly pricing power over her invention, which should allow her to recoup her research and development (“R&D”) costs, and then turn a profit. This right provides an incentive to invent and encourages technological progress.

Even though monopolies are generally disfavored in classical economic theory, the Constitution takes the view that the benefits of a patent system outweigh its costs. As the Supreme Court has stated, “[t]hus, from the outset, federal patent law has been about the difficult business ‘of drawing a line between the things which are worth to the

28. U.S. CONST. art. I, § 8, cl. 8.

29. JAFFE & LERNER, *supra* note 1, at 7.

30. See CHISUM ET AL., *supra* note 16, at 66–71; JAFFE & LERNER, *supra* note 1, at 7; WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 294–333 (2003).

public the embarrassment of an exclusive patent, and those which are not.”³¹

2. Teach the Public

A second rationale for a patent system is that, “in the absence of legal protection for an invention, the inventor will try to keep the invention secret,”³² rather than let others free-ride on her invention. However, because invention is often a cumulative process with each innovation building on the last, such secrecy can be expected to hinder technological progress. As Isaac Newton said, “If I have seen a little further it is by standing on ye sholders [sic] of Giants.”³³

A patent system, however, combats the incentive to keep inventions secret “by requiring, as a condition of the grant of a patent, that the patent application . . . disclose the steps constituting the invention in sufficient detail to enable readers of the application, if knowledgeable about the relevant technology, to manufacture [or practice] the patented product [or process] themselves.”³⁴ With each patent granted, the storehouse of public knowledge increases.

The constitutional plan of increasing innovation through a national patent system has been fulfilled, probably well beyond the dreams of the Framers. Despite the discontent of many commentators,³⁵ the patent system has fostered impressive technological advancement. And while excessively strong patent protection can impede, rather than contribute to, technological progress — it is said that Thomas Edison and the Wright Brothers enforced their broad patents against competitors in ways that may have slowed subsequent progress³⁶ — the patent system has, on the whole, been a tremendous success.

31. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 148 (1989) (quoting THOMAS JEFFERSON, 13 WRITINGS OF THOMAS JEFFERSON 335 (Memorial ed. 1904)).

32. LANDES & POSNER, *supra* note 30, at 294.

33. Letter from Isaac Newton to Robert Hooke (Feb. 5, 1675/6), in 1 THE CORRESPONDENCE OF ISAAC NEWTON, 1661–1675, at 416, 416 (H.W. Turnbull ed., 1959).

34. LANDES & POSNER, *supra* note 30, at 294–95. See also *United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 186–87 (1933), which states:

[An inventor] may keep his invention secret and reap its fruits indefinitely. In consideration of its disclosure and the consequent benefit to the community, the patent is granted. An exclusive enjoyment is guaranteed him for seventeen years, but upon the expiration of that period, the knowledge of the invention enures to the people, who are thus enabled without restriction to practice it and profit by its use.

35. See generally JAFFE & LERNER, *supra* note 1.

36. See *id.* at 49–50.

C. The Patent Right

The Patent Act declares that “patents shall have the attributes of personal property,” namely “the right to exclude others from making, using, offering for sale, or selling” the patented invention.³⁷ Importantly, a patent grants only this negative right to exclude others from using the patented invention; it does not grant the patentee any affirmative right to make, use, or sell the invention.³⁸ Whether anyone has an affirmative right to use a patented invention depends on other bodies of positive law.

For example, if someone invented a novel type of firework, she could certainly receive a patent on her invention and would have the right, enforceable in federal court, to prevent anyone from producing or selling her invention in the United States. But, if she lived in a state that prohibited selling or setting off fireworks, then as a matter of state law she would not be permitted to sell or use her invention, and if she were to try, she could validly be prosecuted by the state.

Does this mean that state law trumps federal law, turning the Supremacy Clause on its head? Actually, it does not, because each body of law acts in its own sphere. The federal patent law provides patentees with the right to exclude others from using the patented invention, but because a patent does not confer any affirmative rights on the holder, it allows room for the states to regulate, and even ban, the use of patented inventions. As the Supreme Court has said, “Congress never intended that the patent laws should displace the police powers of the States, meaning by that term those powers by which the health, good order, peace, and general welfare of the community are promoted.”³⁹

Likewise, the Patent Office has the authority to grant a patent on an invention that is regulated or banned by another branch of the federal government, so long as the invention satisfies the requirements of the Patent Act. For example, the Patent Office has awarded numerous patents for various types of drug paraphernalia,⁴⁰ the sale of which is a

37. 35 U.S.C. §§ 261, 154(a)(1) (2000).

38. *See* eBay, Inc. v. MercExchange, L.L.C., 126 S. Ct. 1837, 1840 (2006) (describing the “statutory right to exclude”); *Bloomer v. McQuewan*, 55 U.S. 539, 549 (1852); *Studiosgesellschaft Kohle mbH v. N. Petrochemical Co.*, 784 F.2d 351, 357 (Fed. Cir. 1986) (“The patent grant is not for the right to use the patented subject matter, but only for the right to exclude others from practice of the patented subject matter.”); *Little Mule Corp. v. Lug All Co.*, 254 F.2d 268, 272–73 (5th Cir. 1958) (“[I]t must be remembered that a patent is not the granting of a right to make, use or sell. It grants only the right to exclude others from making, using or selling the patented device.”); *Fuller v. Berger*, 120 F. 274, 279 (7th Cir. 1903) (“[A] state law which prohibits the use of a certain article, which is patented, is not in derogation of the inventor’s grant under the patent law. . . . [T]he franchise which the patent grants . . . consists altogether in the right to exclude.”).

39. *Webber v. Virginia*, 103 U.S. 344, 347–48 (1880).

40. *See, e.g.*, *Method for Introducing a Powdered Substance into a Nostril*, U.S. Patent No. 6,811,543 (filed May 10, 2002); *Compact Spherical Portable Water Pipe for Use with a*

crime under federal drug law.⁴¹ Again, there is no conflict between the two, because a patent does not grant any affirmative right to the holder (e.g., to use the invention).⁴²

D. The Patent Office

Established in 1836, the Patent Office is empowered by Congress to examine patent applications to ensure that they meet the requirements established by Congress in the Patent Act.⁴³ Patent Examiners — technological specialists employed by the Office — review each patent application for compliance with the Act.⁴⁴ Patent Examiners are organized into eight broad “Technology Centers”; each Technology Center, in turn, is subdivided into multiple “Art Units,” such as Art Unit 3752, “Fire Extinguishers, Fluid Sprinkling, Spraying, and Diffusing.”⁴⁵

The Office has also established an elaborate classification system for all United States patents. This system incorporates classes, such as Class 169, “Fire Extinguishers,” and nested subclasses, such as Subclass 169/24, for fire engines.⁴⁶ Upon receiving a new patent application, one of the first tasks of the Office is to label it with a tentative class/subclass, so that it can be delivered to the appropriate Art Unit, thus matching experts with the objects of their expertise.⁴⁷

The Examiner and the applicant then engage in an *ex parte* proceeding, after which the Examiner ultimately decides whether the disclosed invention meets “the stringent requirements for patent protection” under the Patent Act.⁴⁸ If the application meets all the

Standard Beverage Bottle, U.S. Patent No. 6,073,632 (filed June 26, 1998); Vaporizer for Inhalation and Method for Extraction of Active Ingredients from a Crude Natural Product or Other Matrix, U.S. Patent No. 6,250,301 (filed Aug. 28, 1997).

41. See 21 U.S.C. § 863 (2000).

42. See *Issues Relating to the Patenting of Tax Advice: Hearing Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means*, 109th Cong. (2006) [hereinafter *Toupin Statement*] (statement of James Toupin, General Counsel, U.S. Patent and Trademark Office), available at <http://waysandmeans.house.gov/hearings.asp?formmode=printfriendly&id=5103>.

43. Act of July 4, 1836, ch. 357, § 1, 5 Stat. 117 (1836).

44. See U.S. Patent and Trademark Office, General Information Concerning Patents, Examination of Applications and Proceedings in the United States Patent and Trademark Office, <http://www.uspto.gov/web/offices/pac/doc/general/#examination> (last visited Mar. 23, 2007).

45. See U.S. Patent and Trademark Office, Patent Organization, <http://www.uspto.gov/web/offices/pac/index.html> (last visited Feb. 28, 2007) and links therein.

46. See U.S. Patent and Trademark Office, Classification Definitions – Class 169, <http://www.uspto.gov/go/classification/uspc169/defs169.pdf> (last visited Feb. 28, 2007).

47. See U.S. Patent and Trademark Office, Classes Arranged by Art Unit, <http://www.uspto.gov/web/offices/opc/caau.htm> (last visited Feb. 28, 2007).

48. *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979).

statutory requirements, and the applicant has paid all the requisite fees, the Examiner allows the patent to issue.⁴⁹

II. METHODS AND PROCESSES

Section 101 of the Patent Act provides that a “new and useful process” may be patented,⁵⁰ and Section 100 states that “[t]he term ‘process’ means process, art or method.”⁵¹ “A process is not a structural entity but rather an operation or series of steps leading to a useful result,”⁵² and is “patentable in and of itself,” independent of any machinery or equipment associated with it.⁵³ Thus, novel methods of tanning leather, dyeing cloth, or smelting ores, for example, have long been held to be patentable.⁵⁴ Method patents can be quite valuable because such a patent covers the method itself, rather than any specific machines or end products, and therefore sweeps broadly.⁵⁵

An early example of a method patent was presented in *Cochrane v. Deener*, a late nineteenth-century Supreme Court case that concerned a patent for a method of separating different grades of flour.⁵⁶ The method essentially consisted of placing a pile of mixed-grade flour upon a “cloth of progressively finer meshes,” and then blasting air at the flour pile, forcing it through the cloth, thereby separating the flour into its constituent grades.⁵⁷ The defendant had been using the patented method, but with different machinery than that disclosed by the inventor, who sued for patent infringement. On appeal, the Supreme Court held in favor of the patent holder because he had patented the intangible process, rather than any physical components associated with the process, such as the meshed cloth.⁵⁸

Over a hundred years later, in the landmark 1998 case *State Street*, the Federal Circuit construed the statutory meaning of “process” to include a “method of doing business,” thereby overruling a long line of case law that held such methods to be outside the realm of

49. See United States Patent and Trademark Office, General Information Concerning Patents, Allowance and Issue of Patent, <http://www.uspto.gov/web/offices/pac/doc/general/#allow> (last visited Mar. 23, 2007).

50. 35 U.S.C. § 101 (2000).

51. *Id.* § 100(b).

52. DONALD S. CHISUM, 1 CHISUM ON PATENTS § 1.03 (2006) [hereinafter CHISUM ON PATENTS].

53. *Id.* § 1.03 n.11 (quoting *Dennison Mfg. Co. v. Ben Clements & Sons, Inc.*, 467 F. Supp. 391, 405 (S.D.N.Y. 1979)).

54. See *Corning v. Burden*, 56 U.S. 252, 267 (1853).

55. See, e.g., *Cochrane v. Deener*, 94 U.S. 780 (1876) (holding defendant liable for infringing plaintiff's method patent, despite the fact that defendant used different machinery than that disclosed in the patent).

56. *Id.* at 781, 785.

57. *Id.* at 785–86.

58. *Id.* at 785–88.

patentable subject matter.⁵⁹ To the contrary, the Court of Appeals for the Federal Circuit held that business methods are subject to the ordinary test of patentability applied to any other method or process.⁶⁰ Although this holding has been widely criticized, the Supreme Court denied certiorari and *State Street* remains good law.⁶¹ Subsequently, in 2003, the Patent Office extended the *State Street* doctrine and began issuing patents for novel legal methods, considering them to be nothing more than a particular type of business method.⁶² So far, the only types of legal methods that have actually been patented are tax strategies and structures, but it appears that it will be only a matter of time before the Office begins granting patents for other types of legal methods. The day may be near when the Office will award a patent for an innovative corporate structure, like the poison pill, or for a novel ground for asylum.

In order to understand why the Patent Office has begun issuing patents for legal methods, it is helpful to review the rationale underlying the *State Street* decision and how the Office has extended it.

A. “Business Method” Patents

The patent at issue in *State Street* claimed “[a] data processing system for managing a financial services configuration of a portfolio.”⁶³ The system concerned a “Hub and Spoke” structure, whereby several mutual funds (spokes) pool their assets into a single investment portfolio (hub). The patent disclosed a data processing system that efficiently allocated the gains and losses in that portfolio among the various constituent mutual funds, thereby reducing administrative costs by providing “economies of scale.”⁶⁴ The district court presiding over the infringement action held the patent invalid under the “long-established principle that business plans and systems are not patentable” subject matter, and cited a number of cases and treatises in support.⁶⁵

Long-established principle or not, the Federal Circuit reversed, and took the opportunity to overrule the “ill-conceived [business

59. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

60. *Id.*

61. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 525 U.S. 1093 (1999).

62. See U.S. Patent and Trademark Office, US Patent Classification 705/36T, http://www.uspto.gov/patft/class705_sub36t.html (last visited Mar. 18, 2007) (listing documents that are, or soon will be, classified as tax strategies as a subset of business methods).

63. Data Processing System for Hub and Spoke Financial Services Configuration, U.S. Patent No. 5,193,056 (filed Mar. 11, 1991).

64. *State St.*, 149 F.3d at 1370.

65. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 927 F. Supp. 502, 515 (D. Mass. 1996), *rev'd*, 149 F.3d 1368 (Fed. Cir. 1998) (internal quotation omitted).

method] exception.”⁶⁶ Observing that the Supreme Court had construed the Patent Act to authorize the granting of patents for “anything under the sun that is made by man,”⁶⁷ the Federal Circuit held that business methods are patentable. The court reasoned that whether an invention is patentable under the Patent Act “should not turn on whether the claimed subject matter does ‘business’ instead of something else.”⁶⁸ The only relevant question is whether the invention at issue meets the various requirements of the Patent Act, such as novelty, utility, and nonobviousness.⁶⁹

Following *State Street*, the Patent Office was soon flooded with applications for business method patents, and it began granting patents on myriad business inventions.⁷⁰ A comprehensive catalogue of issued business method patents is beyond the scope of this Article, but a few examples, in addition to the Hub and Spoke system from *State Street*, include a method for predicting the performance of a loan portfolio,⁷¹ a system for managing currency risk in online transactions,⁷² and Amazon.com’s “1-click” method of selling merchandise over the Internet.⁷³

1. Rising Concerns About Business Method Patents

Despite the Federal Circuit’s acceptance of business method patents in *State Street*, and the Supreme Court’s decision not to upset that determination,⁷⁴ these types of patents remain controversial.⁷⁵ Business method patents have been derided as everything from “[p]atently [r]idiculous”⁷⁶ to unconstitutional,⁷⁷ and other countries have gener-

66. *State St.*, 149 F.3d at 1375.

67. *Id.* at 1373 (internal quotations and citations omitted).

68. *Id.* at 1377.

69. *Id.* It bears noting that the Federal Circuit did not go so far as to hold that the Hub and Spoke method at issue in *State Street* was actually patentable. The court merely remanded the action to the district court for further proceedings. Those further proceedings never took place, however, because the parties settled the matter shortly after the remand. See JAFFE & LERNER, *supra* note 1, at 119.

70. For details on the increase in business method patent filings, see Toupin Statement, *supra* note 42:

[I]n fiscal year 1998 there were fewer than 1,500 filings in the U.S. classification area 705, which includes much of what is commonly known as computer-implemented “business method” inventions. By contrast, there were approximately 9,000 filings in fiscal year 2001; approximately 7,400 filings in fiscal year 2002; approximately 7,700 filings in fiscal year 2003; approximately 8,200 filings in fiscal year 2004; and approximately 8,200 filings again in fiscal year 2005.

71. U.S. Patent No. 7,020,631 (filed May 21, 2001).

72. U.S. Patent No. 7,024,383 (filed Mar. 16, 2000).

73. U.S. Patent No. 5,960,411 (filed Sept. 12, 1997).

74. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 525 U.S. 1093 (1999).

75. See generally JAFFE & LERNER, *supra* note 1.

76. *Patently Ridiculous*, ST. PETERSBURG TIMES, Feb. 24, 2003, at 8A.

ally not followed the United States' lead in granting business method patents. For example, business methods are excluded from patentable subject matter in the United Kingdom⁷⁸ and under the European Patent Convention.⁷⁹

It is beyond the scope of this Article to enumerate all of the practical and theoretical problems with the patenting of business methods, and ample ink has already been spilled on the subject.⁸⁰ That said, one significant problem created by the *State Street* decision is that it has led to an unprecedented and costly "intellectual property arms race" among major financial services firms.⁸¹ In 2005 alone, the Patent Office granted one thousand patents for processing financial and management data.⁸²

So far, these firms have been largely content to use their business method patents defensively by, for instance, entering into a cross-license with another firm so that each may lawfully use each other's patents. But this cold war has already flared up on several occasions, as in the case of several patents for computerized securities trading,⁸³ and an all-out patent war among the major financial services firms could break out at any time.

The Supreme Court and Congress have both expressed their own misgivings about business method patents. In his concurring opinion in *eBay v. MercExchange*, Justice Kennedy, joined by three other Justices, expressed concern over the "potential vagueness and suspect validity"⁸⁴ of some business method patents. Further, in 2002, Congress passed legislation weakening patents that pertain to "method[s] of doing or conducting business" by providing defendants accused of infringement an extra defense that is unavailable in other contexts.⁸⁵ A defendant accused of infringing a business method patent has a com-

77. See generally Pollack, *supra* note 1 (providing four arguments for the unconstitutionality of business method patents).

78. See *id.* at 79–80 n.63.

79. See Convention on the Grant of European Patents art. 52, Oct. 5, 1973, 1065 U.N.T.S. 255, available at http://db1.european-patent-office.org/www3/dwld/epc/epc_2002_v1.pdf. But see Larry A. DiMatteo, *The New "Problem" of Business Method Patents: The Convergence of National Patent Laws and International Internet Transactions*, 28 RUTGERS COMPUTER & TECH. L.J. 1, 30–38 (2002) (arguing that while European Union nations claim that business methods are not patentable, their practice is actually more flexible).

80. See, e.g., CHISUM ON PATENTS, *supra* note 52, § 1.03[5] n.140 (collecting cases and commentaries on the concerns about issuing patents for business methods).

81. Julie Creswell, *A Wall Street Rush to Patent Profit-Making Methods*, N.Y. TIMES, Aug. 11, 2006, at C7.

82. *Id.*

83. *Id.* (referring to suits brought by eSpeed and Reuters); see also *Trading Tech. Int'l, Inc. v. Patsystems (NA) LLC*, No. 05 C 2984 (consent judgment) (N.D. Ill. May 19, 2005) (referring to infringement of U.S. Patent No. 6,766,304 (filed June 27, 2001) ("Click Based Trading With Intuitive Grid Display of Market Depth").

84. *eBay, Inc. v. MercExchange, L.L.C.*, 126 S. Ct. 1837, 1842 (2006) (Kennedy, J., concurring).

85. 35 U.S.C. § 273 (2000).

plete defense if it had actually been using the method before the patentee filed her patent application.⁸⁶

B. "Legal Method" Patents

The Patent Office views legal methods as just a type of business method, and hence patentable under *State Street*.⁸⁷ To date, the Patent Office has granted patents for only one category of legal method patent, namely, methods of avoiding or minimizing tax liability under the federal Internal Revenue Code. There appears to be no relevant distinction, however, between tax strategies and other types of legal methods, such as corporate structures or litigation techniques. So, theoretically, it seems that the Patent Office could issue patents for all types of legal methods.

1. Tax Strategies

At least a few enterprising tax practitioners took immediate notice of *State Street* and saw the decision as providing an opportunity to file patent applications for novel tax strategies — i.e., methods, techniques, systems, or transactions whose sole purpose is to minimize or avoid tax liability⁸⁸ — as a type of business method.⁸⁹ The Patent Office, apparently welcoming this new type of patent application, created a new "Tax Strategies" subclass (705/36T) within the "Business Practice" class (705).⁹⁰

The first tax-strategy patent was awarded to Robert Slane, a Florida estate planner, for an "estate planning method for minimizing transfer tax liability," which he calls "SOGRAT."⁹¹ The SOGRAT method apparently minimizes transfer tax through the use of a gran-

86. *Id.* § 273(b)(1).

87. See generally Toupin Statement, *supra* note 42; *Issues Relating to the Patenting of Tax Advice: Hearing Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means*, 109th Cong. (2006) (statement of Ellen Aprill, Professor, Loyola Law School), available at <http://waysandmeans.house.gov/hearings.asp?formmode=printfriendly&id=5106> [hereinafter Aprill Statement].

88. See, e.g., Glenn R. Simpson, *How Tax Brought Trouble to Billionaire Clan*, WALL ST. J., July 31, 2006, at A1 (discussing "a network of companies and trusts established [to] shield . . . money from U.S. taxes").

89. See, e.g., Establishing and Managing Grantor Retained Annuity Trusts Funded by Nonqualified Stock Options, U.S. Patent No. 6,567,790 (filed Dec. 1, 1999) (assigned to Class 705).

90. See, e.g., *id.*; see also U.S. Patent and Trademark Office, US Patent Classification 705/36T, http://www.uspto.gov/patft/class705_sub36t.html (last visited Mar. 18, 2007) (listing documents that are, or soon will be, classified as tax strategies — a subset of business methods).

91. U.S. Patent No. 6,567,790 (filed Dec. 1, 1999).

tor-retained annuity trust (“GRAT”) funded with stock options (“SO”).⁹²

Since issuing the SOGRAT patent in 2003, the Patent Office has granted thirteen other patents for tax strategies,⁹³ and has published sixty-one applications for such patents.⁹⁴ This may, however, be merely the tip of the iceberg, because patent applications are “kept in confidence” by the Patent Office.⁹⁵ Pursuant to recent efforts to harmonize United States patent practice with that of the rest of the world, applications are published on the Internet, among other places, eighteen months after filing.⁹⁶ Nevertheless, if a patent applicant affirms that she will not seek to patent the invention in question in any other country, the application is never published, in accordance with traditional United States practice.⁹⁷ Thus, in order to maintain the confidentiality of an invention, a patent applicant must promise to forgo filing in foreign jurisdictions.

We can expect that the majority of tax-strategy patent applicants would choose secrecy over foreign filing,⁹⁸ because an invention intended to minimize taxes under United States law would likely have little value in another country. So, in addition to those sixty-one published applications, there may well be additional unpublished applications for tax-strategy patents.

i. Patent Office and IRS Response to the Patenting of Tax Strategies

The Patent Office has embraced the notion of patenting tax strategies, and has endeavored to educate its examiners on the “state of the art” known to tax professionals, so that they can distinguish novel and nonobvious tax. The Patent Office has made strides toward educating its staff by enhancing its library and database holdings, and by sending examiners to be trained by the IRS.⁹⁹

Apart from this generalized training, the IRS and the Patent Office each allow the other to operate unfettered in its respective sphere. The IRS is statutorily barred from assisting or consulting on the ex-

92. *See id.*

93. *See Issues Relating to the Patenting of Tax Advice: Hearing Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means*, 109th Cong. (2006) [hereinafter Everson Statement] (Statement of The Hon. Mark Everson, Comm’r, IRS), available at <http://waysandmeans.house.gov/hearings.asp?formmode=view&id=5104>; *see, e.g.*, Method and Apparatus for Modeling and Executing Deferred Award Instrument Plan, U.S. Patent No. 6,609,111 (filed Oct. 18, 2000).

94. *See* Toupin Statement, *supra* note 42.

95. 35 U.S.C. § 122(a) (2000).

96. *See id.* § 122(b)(2)(B)(i) (2000).

97. *See id.*

98. *But see* Toupin Statement, *supra* note 42 (stating that approximately ninety percent of all patent applications are published).

99. *See id.* (explaining that the Patent Office is also developing a partnership with the ABA Section of Taxation to further the educational opportunities for its examiners).

amination of individual patent applications by virtue of the applications' confidential nature.¹⁰⁰ So, the Patent Office is left to its own devices in examining tax-strategy applications "using the same statutory requirements for patentability . . . as that examiner would use in examining any other technology."¹⁰¹

Importantly, even if a patent issues for a tax strategy, this does not determine its legal effect under tax law, but merely affirms that the invention and application meet the strictures of patent law. Hence, cautions the Patent Office, a "patented [tax] strategy should not be practiced or marketed unless it complies with applicable law, rules and regulations administered by the Internal Revenue Service."¹⁰²

The IRS concurs. In recent Congressional testimony, the Commissioner of Internal Revenue remarked: "Just so there is no misunderstanding today on this point, let me be clear. The grant of a patent for a tax strategy has absolutely no impact on IRS' determination of the effectiveness or the legitimacy of the strategy under tax law."¹⁰³ Despite this pronouncement, the Commissioner has said that tax-strategy patents may be a positive development because such patents may "facilitate the ability of taxpayers to plan and conduct their tax affairs in compliance with the law."¹⁰⁴

ii. Tax Bar Response to the Patenting of Tax Strategies

The tax bar,¹⁰⁵ for its part, is strongly opposed to the patenting of tax strategies.¹⁰⁶ The prevailing view is that "tax strategies and tax

100. See 35 U.S.C. § 122(a) (2000); see also Everson Statement, *supra* note 93.

101. Toupin Statement, *supra* note 42.

102. See *id.*

103. Everson Statement, *supra* note 93 ("Importantly, the granting of a patent on a tax strategy provides protection to the patent holder against infringement by other parties, but has no bearing on its legitimacy or illegitimacy under the tax laws, which remain under the jurisdiction of the IRS.")

104. *Id.*

105. By "tax bar," this Article refers to practitioners and academics that specialize in tax law or practice, including, for example, the members of the Tax Section of the New York State Bar Association. See New York State Bar Association Tax Section Purpose (Mar. 11, 1993), http://www.nysba.org/MSTemplate.cfm?Section=Mission_Statement6&Site=Tax_Section1&cfm&ContentID=2736.

106. See NYSBA Letter, *supra* note 12, at 2; Aprill Statement, *supra* note 87; *Issues Relating to the Patenting of Tax Advice: Hearing Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means*, 109th Cong. (2006) (statement of Richard S. Gruner, Professor, Whittier Law School), available at <http://waysandmeans.house.gov/hearings.asp?formmode=printfriendly&id=51065> ("Patents regarding these techniques are emerging as significant concerns within the tax planning community."); Belcher Statement, *supra* note 12 (stating that "patents for tax reduction strategies should be prohibited"); Dennis B. Drapkin, *From the Chair*, A.B.A. SEC. TAX'N NEWSQUARTERLY, Spring 2006, at 3, 3 (stating that members are "deeply concerned"); Tom Herman, *Patented Tax Strategies May Fail to Shield You From the IRS*, WALL ST. J., July 26, 2006, at D3. *But see* Robert L. Moshman, *Good GRATs and Great GRATs and an Interview with Robert C. Slane*, ESTATE ANALYST, Apr. 2006, <http://www.financialcounsel.com/Articles/EstatePlanning/>

ideas should be generally available to all taxpayers. The tax law should be an open road, not a toll road.”¹⁰⁷ Many long time practitioners despair that if patents are permitted for tax strategies, “tax practitioners may be discouraged from freely discussing tax issues with one another,” thus reducing the beneficial exchange of ideas that characterizes current tax practice.¹⁰⁸

The tax bar is properly concerned that the patenting of tax strategies will “increase the cost to taxpayers of complying with their tax obligations,”¹⁰⁹ and will impose an “increased burden on practitioners who, while simply developing good gift, estate or business planning strategies for their clients, would be obligated to conduct ‘due diligence’ searches for existing patents on such strategies”¹¹⁰ or blindly take the risk that they and their clients will be held liable for patent infringement.¹¹¹ Even if tax strategies are patentable as a general matter, the tax bar fears that patents will be issued for techniques that have long been widely known and practiced, thus wrongly giving the patentee a monopoly over something she did not invent.¹¹²

2. Other Legal Methods

To date, there have been no patents granted for other legal methods, nor have any such applications been published.¹¹³ Nevertheless, by endorsing the patentability of tax strategies, the Patent Office has opened a Pandora’s Box. Under the Office’s interpretation of the Patent Act, there appears to be no distinction between a tax strategy and another type of legal strategy that would exclude other legal strategies from patentability. So long as it is new, and “works” under the law as it currently stands, the Patent Office appears to be of the view that any legal method would be patentable.

ARTEST0000090-GreatGRATs.pdf; Wealth Transfer Group, Inc., <http://www.wealth-transfer.com> (“If you own NON-QUALIFIED STOCK OPTIONS, we have a patented technique to help you increase the value your family will receive.”) (last visited Feb. 25, 2007).

107. NYSBA Letter, *supra* note 12, at 4.

108. *See id.* at 9.

109. *Id.* at 4; *see id.* at 9 (“Requiring tax lawyers to research patent issues and to advise on the existence of and validity of patents covering proposed strategies could result in substantial additional costs to clients.”).

110. Everson Statement, *supra* note 93; *see also* NYSBA Letter, *supra* note 12, at 6–9.

111. *See* NYSBA Letter, *supra* note 12, at 7–8 (describing various actions that could constitute infringement of tax-strategy patents).

112. *See id.* at 6 (“Many tax strategies that may not be obvious to others are in fact obvious to seasoned tax practitioners.”).

113. *See supra* Part II.B.1 for discussion of why applications for legal method patents would likely be unpublished.

Consider the “poison pill.” Invented in 1982 by Martin Lipton,¹¹⁴ and formally known as a “shareholder rights plan,” the poison pill is a corporate device currently employed by approximately 1,800 United States companies¹¹⁵ to defend against takeover threats and give directors a tool that enables them to maximize shareholder value.¹¹⁶ The poison pill was clearly a significant innovation in corporate law¹¹⁷ (and thus was novel and nonobvious), and was also “useful” in defending against abusive takeover tactics.

A Patent Office that allows a patent for a method of minimizing estate tax liability could well grant a patent on the poison pill¹¹⁸ or any other corporate legal technique. Other legal methods, such as novel trial objections or innovative procedural maneuvers, would also appear to be patentable under the Office’s view of the Act. For example, a novel ground for asylum would seem to be analogous to a novel tax strategy: the former is an innovative use of the immigration code, the latter an innovative use of the tax code.

However, as explained in the remainder of this Article, legal methods, including tax strategies, should not qualify as “inventions” within the meaning of the Patent Act. Hence, they should not be patentable as a matter of law.

III. THE “INVENTION” REQUIREMENT

Section 101 of the Patent Act reads in full:

§ 101. Inventions patentable:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof,

114. Memorandum from Martin Lipton, Partner, Wachtell, Lipton, Rosen & Katz, to all attorneys (Sept. 15, 1982) (on file with author); Martin Lipton, *Twenty-Five Years After Takeover Bids in the Target’s Boardroom: Old Battles, New Attacks and the Continuing War*, 60 BUS. LAW. 1369, 1372 (2005).

115. See Jesse A. Finkelstein & C. Stephen Bigler, *Challenge to ‘Dead Hand’ Poison Pill Rights Sustained in Delaware*, INSIGHTS, Sept. 1998, at 16.

116. See, e.g., Lynn A. Stout, *Takeovers in the Ivory Tower: How Academics Are Learning Martin Lipton May Be Right*, 60 BUS. LAW. 1435, 1452–53 (2005).

117. See DALE A. OESTERLE, *THE LAW OF MERGERS AND ACQUISITIONS* 308–09 (1999) (describing certain advantages of the poison pill over other previously known takeover defenses, including the “shark repellent” amendment to articles of incorporation); Ronald J. Gilson, *Lipton and Rowe’s Apologia for Delaware: A Short Reply*, 27 DEL. J. CORP. L. 37, 37 (2002) (“Martin Lipton has a strong claim to having devised the most important innovation in corporate law since . . . 1879.”).

118. See John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139, 1163–64 (1999); Maurer, *supra* note 13, at 1080.

may obtain a patent therefor, subject to the conditions and requirements of this title.¹¹⁹

This section establishes the basic prerequisites to obtaining a patent: Any “process, machine, manufacture, or composition of matter” may be patented, so long as it is a “new and useful” “[i]nvention[.]” and meets all the other requirements of the Patent Act, such as “nonobviousness”¹²⁰ and proper disclosure.¹²¹ While most of these terms have a readily understood meaning, the word “invention” has proven quite difficult to define. A leading legal dictionary’s entry for “invention” describes it as a “word impossible of definition.”¹²² Even the definition provided by the Patent Act is circular and unhelpful: “The term ‘invention’ means invention or discovery.”¹²³

After a few centuries of exclusive federal court jurisdiction over patent matters, however, the common law has worked its magic. As early as 1888 in the *Telephone Cases*, a series of patent infringement suits asserted by Alexander Graham Bell, the Supreme Court provided a workable definition of the term: an “invention” is a human-made product or process that harnesses “laws of nature” for human benefit.¹²⁴ As discussed in Part III.C, *infra*, the Court has reiterated this definition on numerous occasions throughout the twentieth century, most recently in the 1981 case of *Diamond v. Diehr*.¹²⁵

Before examining the Court’s definition of “invention,” however, we will consider several related strands of doctrine.

A. Patentable Subject Matter

Section 101 of the Patent Act provides that any “process, machine, manufacture, or composition of matter” is eligible to be patented.¹²⁶ Collectively, these four classes of eligible subject matter are so broad that the Supreme Court has stated that they may include “anything under the sun that is made by man.”¹²⁷ This extremely liberal definition of patentable subject matter has allowed an astounding variety of inventions to be patented over the years.

119. 35 U.S.C. § 101 (2000).

120. *Id.* § 103.

121. *Id.* § 112.

122. BALLENTINE’S LAW DICTIONARY 662 (3d ed. 1969).

123. 35 U.S.C. § 100.

124. *The Telephone Cases*, 126 U.S. 1 (1888).

125. *Diamond v. Diehr*, 450 U.S. 175, 188 n.11 (1981).

126. 35 U.S.C. § 101(a).

127. *Diamond v. Chakrabarty*, 447 U.S. 303, 309 n.6 (1980) (quoting the House and Senate Committee Reports accompanying the Patent Act).

B. The Law of Nature Doctrine

As discussed above, “anything . . . made by man” constitutes eligible subject matter for patenting.¹²⁸ It is well settled that the converse is also true: anything that is not “made by man” may not be patented. This is known as the “law of nature” doctrine.¹²⁹

Thus, a product of nature, such as “a new mineral discovered in the earth or a new plant found in the wild[,] is not patentable subject matter.”¹³⁰ The same can be said for laws of nature¹³¹ (gravity, “ $E = mc^2$ ”),¹³² natural phenomena¹³³ (volcanic eruptions, the tides), abstract scientific principles (thermodynamics, electromagnetism),¹³⁴ and mathematical concepts and algorithms¹³⁵ (the Pythagorean Theo-

128. *Id.*

129. See generally *Diehr*, 450 U.S. at 187–88.

130. *Chakrabarty*, 447 U.S. at 309; see also *id.* at 313 (“[T]he relevant distinction [is] . . . between products of nature, whether living or not, and human-made inventions.”); *Gen. Elec. Co. v. De Forest Radio Co.*, 28 F.2d 641, 642 (3d Cir. 1928) (rejecting a patent application claiming “substantially pure tungsten having ductility and high tensile strength”: “If it is a natural thing then clearly, even if [the patentee] was the first to uncover it and bring it into view, he cannot have a patent for it because a patent cannot be awarded for a discovery or for a product of nature, or for a chemical element”); *Ex parte Latimer*, 1889 Comm’n Dec. 123, 127 (1889) (rejecting a patent application claiming the fiber taken from the needles of the *Pinus australis*: “I am not aware of any instance in which it has been held that a natural product is the subject of a patent, although it may have existed from creation without being discovered”).

131. *Chakrabarty*, 447 U.S. at 309 (“The laws of nature . . . have been held not patentable.”) (collecting Supreme Court cases).

132. *Id.* (“Einstein could not patent his celebrated law that $E = mc^2$; nor could Newton have patented the law of gravity.”); *Parker v. Flook*, 437 U.S. 584, 598 (1978) (Stewart, J., dissenting) (“It is a commonplace that laws of nature . . . are not patentable subject matter. A patent could not issue, in other words, on the law of gravity . . .”).

133. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948) (“[P]atents cannot issue for the discovery of the phenomena of nature.”).

134. *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) (“a scientific truth, or the mathematical expression of it, is not patentable invention”); *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1853) (“A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.”); *Tol-O-Matic, Inc. v. Proma Produkt-und Marketing Gesellschaft m.b.H.*, 945 F.2d 1546, 1552 (Fed. Cir. 1991) (“By § 101 there is excluded from the patent system such things as scientific theories, pure mathematics, and laws of nature.”).

135. See, e.g., *Flook*, 437 U.S. at 589 (stating that “an algorithm, or mathematical formula, is like a law of nature” and, hence, is not patentable); *In re Warmerdam*, 33 F.3d 1354, 1359 (Fed. Cir. 1994) (“[A] patent cannot be obtained for a ‘mathematical algorithm.’”); *In re Schrader*, 22 F.3d 290, 292 (Fed. Cir. 1994) (“[A] patent cannot be obtained for a mathematical algorithm in the abstract.”); *In re Sarkar*, 588 F.2d 1330, 1333 (C.C.P.A. 1978) (“symbols, equations, or ‘algorithms’” are not patentable under § 101 of the Patent Act); U.S. PATENT AND TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 2106.02 (8th ed. 2001) [hereinafter MPEP] (“Thus, a process consisting solely of mathematical operations . . . does not manipulate appropriate subject matter and thus cannot constitute a statutory process.”); CHISUM ON PATENTS, *supra* note 52, § 1.03[2][d], at 1-126 (observing that, in *Flook* and *Gottschalk v. Benson*, the Supreme Court “treat[ed] a mathematical formula or algorithm as equivalent to a mere principle or abstract idea which could not be patented”).

rem,¹³⁶ calculus, the Fourier series). For convenience, this Article will refer to all of these collectively as “laws of nature,” and their exclusion from patentable subject matter as the “law of nature doctrine.”¹³⁷

The “underlying notion” of the law of nature doctrine is that laws of nature have “always existed,”¹³⁸ just waiting to be discovered by humankind.¹³⁹ The Supreme Court offers the example of “Newton’s formulation of the law of universal gravitation, relating the force of attraction between two bodies, F , to their masses, m and m' , and the square of the distance, d , between their centers, according to the equation $F = mm'/d^2$.”¹⁴⁰ Despite the fact that it took humanity until the seventeenth century to recognize or understand it, this gravitational “relationship always existed — even before Newton announced his celebrated law.”¹⁴¹ Because laws of nature have always existed, it follows that they cannot be newly created by human beings. Hence, they necessarily fail the “anything . . . made by man”¹⁴² test and are excluded from patentable subject matter for that reason.¹⁴³

In addition to this theoretical premise, the law of nature doctrine is justified on a policy level because “too much patent protection can impede rather than ‘promote the Progress of Science and useful Arts.’”¹⁴⁴ In other words, the law of nature doctrine prevents “the enormous potential for rent seeking that would be created if property rights could be obtained in [laws of nature] and . . . the enormous

136. See *Flook*, 437 U.S. at 590 (“[T]he Pythagorean Theorem would not have been patentable . . .”).

137. See *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 126 S. Ct. 2921, 2925 (2006) (Breyer, J., dissenting).

138. *Flook*, 437 U.S. at 593 n.15 (quoting P. ROSENBERG, PATENT LAW FUNDAMENTALS, § 4, p. 13 (1975)).

139. *Accord Le Roy*, 55 U.S. at 175. See also LANDES & POSNER, *supra* note 30, at 308, which states:

The nonpatentability of basic ideas is related to the distinction that patent law draws between discovery of that which has always existed and invention, denying patent protection to the former [T]he real point [of this distinction] is that when something is known to exist and is just waiting to be found, the danger of a wasteful race to find it is increased because the probability of success, and hence the expected gain, is greater.

Cf. In re Alappat, 33 F.3d 1526, 1569 (Fed. Cir. 1994) (Newman, J., concurring) (“[W]e need not decide such interesting epistemological questions as whether mathematical formulae exist in nature, or are created by mathematicians in the way that chemical compounds are created by chemists.”).

140. *Flook*, 437 U.S. at 593 n.15 (quoting P. ROSENBERG, PATENT LAW FUNDAMENTALS, § 4, p. 13 (1975)).

141. *Id.*

142. *Diamond v. Chakrabarty*, 447 U.S. 303, 309 n.6 (1980).

143. Examination Guidelines for Computer-Related Inventions, 61 Fed. Reg. 7478, 7481 (Feb. 28, 1996) (“The subject matter courts have found to be outside the four statutory categories of invention is limited to abstract ideas, laws of nature and natural phenomena.”).

144. *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 126 S. Ct. 2921, 2922 (2006) (Breyer, J., dissenting) (emphasis omitted).

transaction costs that would be imposed on would-be users.”¹⁴⁵ These policy considerations have led the Supreme Court to conclude that laws of nature are “free to all men and reserved exclusively to none.”¹⁴⁶

1. Applications of the Laws of Nature Are Patentable

There is a vital corollary to the law of nature doctrine: while a law of nature may not itself be patented, “an *application* of a law of nature . . . may well be deserving of patent protection.”¹⁴⁷ For example, the Wright Brothers’ airplane was able to fly because it exploited certain laws of physics. The airplane was clearly patentable; the underlying laws of physics that kept the plane in the air, however, were not.

In practice, it is often difficult to tell whether a patent is addressed to a law of nature, or an application thereof; the “line between a patentable ‘process’ and an unpatentable ‘principle’ is not always clear.”¹⁴⁸ But that is the distinction that the Supreme Court has made time and time again.¹⁴⁹

Consider, for example, the celebrated Supreme Court case involving Samuel Morse’s patent on the telegraph,¹⁵⁰ a device that allowed long-distance communication through the use of electromagnetism. All but one of Morse’s patent claims were directed to the telegraph machine he had invented. But in his famous eighth claim, Morse asserted total dominion over “the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances.”¹⁵¹ In accordance with the law of nature doctrine and its corollary, the Court upheld Morse’s seven claims relating to the telegraph machine, but the Court invalidated his eighth claim on the

145. *Id.* (quoting LANDES & POSNER, *supra* note 30, at 305–06).

146. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948).

147. *Diamond v. Diehr*, 450 U.S. 175, 187 (1981); *see also Funk Bros.*, 333 U.S. at 130 (“If there is to be invention from [the] discovery [of a natural law], it must come from the application of the law of nature to a new and useful end.”); *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) (“While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.”); *DeForest Radio Co. v. Gen. Elec. Co.*, 283 U.S. 664, 684–85 (1931) (“It is method and device which may be patented and not the scientific explanation of their operation.”); *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 132–133 (1854) (Grier, J., dissenting); *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1374 (Fed. Cir. 1998) (“[A] process, machine, manufacture, or composition of matter employing a law of nature, natural phenomenon, or abstract idea is patentable subject matter even though a law of nature, natural phenomenon, or abstract idea would not, by itself, be entitled to such protection.”).

148. *Parker v. Flook*, 437 U.S. 584, 589 (1978).

149. *See generally Lab. Corp.*, 126 S. Ct. 2921 (Breyer, J., dissenting) (collecting cases).

150. *See Morse*, 56 U.S. (15 How.) at 132; CHISUM ON PATENTS, *supra* note 52, § 1.03[2][b], at 1-122.

151. *Morse*, 56 U.S. (15 How.) at 112.

ground that it improperly claimed a law of nature (electromagnetism) rather than an application thereof.¹⁵²

C. Definition of “Invention”

From at least as early as the *Telephone Cases*,¹⁵³ decided in 1888, to as recently as the 1981 opinion in *Diamond v. Diehr*,¹⁵⁴ the Supreme Court has construed the term “invention,” for purposes of patentability, in a single, consistent fashion: An “invention” has been defined as anything made by man that utilizes or harnesses one or more “laws of nature” for human benefit. No member of the Court has ever questioned this construction, which is consistent with the law of nature doctrine and its corollary.¹⁵⁵

A simple example of a proper “invention” is the watermill,¹⁵⁶ which is a system of extracting power from a river and using it to run machinery; the river’s power, of course, comes from the natural force of gravity. Another example is the “I-beam,” a construction beam with a cross section that resembles an upper-case “I.” The I-beam is extremely strong, relative to its own weight, because it has a high “moment of inertia,” a natural phenomenon.¹⁵⁷

In contrast, a “perpetual motion” machine does not harness any known laws of nature, but rather violates them.¹⁵⁸ A perpetual motion machine therefore cannot qualify as an “invention,” and the Patent Office regularly rejects patents for such devices.¹⁵⁹

1. Supreme Court Precedent

The earliest description of a patentable “invention” by the Supreme Court as something that utilizes laws of nature for human benefit appears to be in a colorful dissenting opinion from the Morse telegraph case.¹⁶⁰ In his opinion, Justice Grier described the difference between scientists (“philosophers,” as he calls them) and engineers:

152. *Id.* at 112–13.

153. *The Telephone Cases*, 126 U.S. 1 (1888).

154. *Diamond v. Diehr*, 450 U.S. 175, 188 n.11 (1981).

155. *See supra* Part III.B.

156. *See Slater Mill*, <http://www.slatermill.org/Educators.htm> (last visited Mar. 2, 2007) (describing the first operational textile mill in the United States, established in 1793).

157. *See* Wikipedia, *Beam (Structure)*, [http://en.wikipedia.org/wiki/Beam_\(structure\)](http://en.wikipedia.org/wiki/Beam_(structure)) (as of Mar. 13, 2007, 05:33 GMT).

158. Specifically, perpetual motion is impossible because it would violate the Second Law of Thermodynamics, a fundamental law of nature.

159. *See Ex parte Payne*, 1904 Comm’n Dec. 42; *Tol-O-Matic, Inc. v. Proma Produkt- und Marketing Gesellschaft m.b.H.*, 945 F.2d 1546, 1552 (Fed. Cir. 1991) (“Section 101 has also been interpreted to exclude . . . devices deemed to be scientifically impossible, such as perpetual motion machines.”).

160. *See generally supra* Part III.B.1; *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 124 (1854) (Grier, J., dissenting).

The mere discovery of a new element, or law, or principle of nature, without any valuable application of it to the arts, is not the subject of a patent. But he who takes this new *element or power*, as yet useless, from the laboratory of the philosopher, and *makes it the servant of man*; who applies it to the perfecting of a new and useful art, or to the improvement of one already known, is the benefactor to whom the patent law tenders its protection.¹⁶¹

The first majority opinion to take this view came thirty years later, in the *Telephone Cases*, a consolidated action of numerous suits brought by Alexander Graham Bell for infringement of his patent on the telephone.¹⁶² In holding that the broad fifth claim of Bell's patent was valid, the Court explained that it taught the public a way to transmit speech over electric wires, thereby utilizing a law of nature for human benefit: "In this [invention,] . . . electricity, one of the *forces of nature*, is employed; but electricity, left to itself, will not do what is wanted. *The [invention] consists in so controlling the force as to make it accomplish the purpose.*"¹⁶³

In the twentieth century, the Court explained in *United States v. Dubilier Condenser Corp.* that "the act of *invention* . . . consists neither in finding out the laws of nature, nor in fruitful research as to the operation of *natural laws*, but in discovering how those laws may be *utilized or applied for some beneficial purpose*, by a process, a device or a machine."¹⁶⁴

Fifteen years later, in *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, the Court held that one "who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. If there is to be *invention* from such a discovery, it must come from the *application of the law of nature to a new and useful end.*"¹⁶⁵ This precise language has been reiterated at least twice by the Supreme Court.¹⁶⁶

161. *Morse*, 56 U.S. (15 How.) at 132–33 (emphasis added).

162. *The Telephone Cases*, 126 U.S. 1 (1888).

163. *Id.* at 532 (emphasis added). In the original, the Court uses the word "art" instead of "invention." It is clear from context that the Court used "art" to mean what we currently think of as the "invention." For example, the sentence immediately prior to the one quoted in the text above reads, "if the patent can be sustained to the full extent of what is now contended for, it gives to Bell . . . the exclusive use of his *art* for that purpose, until the expiration of the statutory term of his patented rights." *Id.* (emphasis added).

164. *United States v. Dubilier Condenser Corp.*, 289 U.S. 178, 188 (1933) (emphasis added).

165. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948) (emphasis added).

166. *See* *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Diamond v. Diehr*, 450 U.S. 175, 188 n.11 (1981); *accord In re Alappat*, 33 F.3d 1526, 1569 (Fed. Cir. 1994) (Newman, J., concurring) ("Most technologic inventions involve the application of scientific principles

In summary, this clear and consistent body of Supreme Court case law establishes that the term “invention” encompasses anything made by man that utilizes or harnesses one or more “laws of nature” for human benefit.

2. International Accord

This definition of “invention” has also achieved acceptance around the world. The highly influential German legal philosopher Josef Kohler, for example, wrote in 1908 that an invention, in a technical sense, is a new creation characterized by human ingenuity invoking the forces of nature.¹⁶⁷

Moreover, the few patent systems that define “invention” by statute have adopted this construction. The Japanese Patent Law, for example, defines “invention” as “the highly advanced creation of technical ideas by which *a law of nature is utilized*.”¹⁶⁸ Similarly, the Patent Act of the Republic of Korea states that “‘invention’ means a high creation of any technical idea *applying the natural law*.”¹⁶⁹

IV. THE LAW OF PATENTABILITY IGNORES ALL OTHER POSITIVE LAW

As just explained, a product or process that harnesses a law of nature for human benefit will meet the “invention” requirement. But is this definition exclusive? That is, does this define the full scope of subject matters that will qualify as inventions, or are there any others, yet unknown, that can qualify? More specifically, does a process that exploits a “law of man” (rather than a “law of nature”) for human benefit count as an “invention”?

Legal methods utilize or exploit positive law (“laws of man”), not laws of nature, to achieve their result. For example, the SOGRAT method applies § 2702 of Chapter 14 of Subtitle B of the Internal Revenue Code in order to minimize estate tax liability,¹⁷⁰ and the poi-

and phenomena of nature to specific purposes. It is these purposes that are the subject matter of 35 U.S.C. § 101”); *cf.* *Parker v. Flook*, 437 U.S. 584, 594 (1978) (“Even though a phenomenon of nature or mathematical formula may be well known, an inventive application of the principle may be patented. Conversely, the discovery of such a phenomenon cannot support a patent unless there is some other inventive concept in its application.”).

167. JOSEF KOHLER, *LEHRBUCH DES PATENTRECHTS* 23 (1908) (original German: “Die Erfindung im technischen Sinne ist aber eine solche Neuschöpfung, welche eine Ueberwindung der Naturkräfte durch den menschlichen Geist enthält.”).

168. *See* Tokkyo Hō [Patent Law], Law No. 121 of 1959, ch. 1, art. 2(1), *translated in* World Intellectual Property Organization, Database of Intellectual Property Legislative Texts, *available at* http://www.wipo.int/clea/docs_new/pdf/en/jp/jp006en.pdf (emphasis added).

169. Patent Act, as amended by Law No. 5080, Dec. 29, 1995, ch. 1, art. 2(1), *translated in* CURRENT LAWS OF THE REPUBLIC OF KOREA (emphasis added).

170. *See* 26 U.S.C. § 2702 (2000); *see generally* Moshman, *supra* note 106.

son pill employs Delaware corporate law, as construed by that state's Supreme Court, to maximize shareholder value. If the definition of "invention" refers exclusively to the utilization of laws of nature, then legal methods would not be patentable, because they employ laws of man. Conversely, if the definition of invention is not exclusive, it could perhaps be understood to include legal methods within its scope.

This Part discusses the utility requirement of § 101 of the Patent Act — i.e., the requirement that the claimed product or process be "useful."¹⁷¹ As explained below, utility is determined solely with respect to nature and patent law, without regard to any other body of positive law. Thus, for example, when deciding whether an item of drug paraphernalia is patentable, the Patent Office looks only to the requirements of the Patent Act, and ignores the fact that drug paraphernalia is expressly banned under federal criminal drug laws.

In short, the law of patentability takes no cognizance of any other positive law. As discussed in Part V.B, *infra*, this well-established rule provides support for the ultimate conclusion of this Article: that the definition of "invention" described in Part III.C, *supra*, is indeed exclusive, and therefore legal methods are not patentable.

A. The Utility Requirement

Section 101 of the Patent Act states that only "useful" inventions are patentable.¹⁷² This utility requirement has its origin in Article I of the Constitution, which grants to Congress the power to issue patents for discoveries in the "useful Arts,"¹⁷³ and has been a statutory requisite since the first patent statute in 1790.¹⁷⁴ Utility is "a fundamental requirement of American patent law"¹⁷⁵ that has "maintained a central place in all of our patent legislation."¹⁷⁶

That said, the utility requirement "has devolved over the years into a rather minimal obstacle to obtaining a patent."¹⁷⁷ The Federal Circuit maintains that an "invention is 'useful' under section 101 if it is capable of providing some identifiable benefit."¹⁷⁸ This identifiable

171. 35 U.S.C. § 101 (2000).

172. *Id.*

173. U.S. CONST. art. I, § 8, cl. 8 (emphasis added).

174. Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 109, 110 (1790) (patents may be awarded for "any useful art").

175. *Carl Zeiss Stiftung v. Renishaw PLC*, 945 F.2d 1173, 1180 (Fed. Cir. 1991).

176. *Brenner v. Manson*, 383 U.S. 519, 529 (1966).

177. Robert P. Merges, *Commercial Success and Patent Standards: Economic Perspectives on Innovation*, 76 CAL. L. REV. 803, 811–12 (1988); accord John R. Thomas, *The Post-Industrial Patent System*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 3, 4 (1999) (describing the utility requirement as "an exceptionally lenient standard that appears to place few limitations on the possibilities for private appropriation").

178. *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366 (Fed. Cir. 1999).

benefit must be both “specific and substantial.”¹⁷⁹ In other words, the invention must function for its intended purpose and provide a particular “real-world” benefit.¹⁸⁰ So long as the invention is capable of performing its proposed function, it “need not be the best or the only way” of doing so.¹⁸¹

An invention therefore lacks utility only if the invention is “totally incapable of achieving a useful result.”¹⁸² Given this low standard, the Patent Office directs its examiners to accept the applicant’s assertion of utility unquestioningly, and not to examine or test the invention to see if it in fact works as claimed.¹⁸³ In contrast, examiners must always conduct a search of the prior art, and may not simply assume novelty.¹⁸⁴ To quote the Federal Circuit, the “threshold of utility is not high.”¹⁸⁵

B. The Moral Utility Doctrine

An old common law gloss on the utility requirement was that, in order to be “useful” for patentability purposes, an invention must “achieve a human purpose that is not illegal, immoral or contrary to

179. *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005) (citing *Brenner*, 383 U.S. at 534–35); accord MPEP, *supra* note 135, § 2107 (stating that the utility of the invention must be “specific, substantial, and credible”).

180. *Fisher*, 421 F.3d at 1371 (quoting *Nelson v. Bowler*, 626 F.2d 853, 856 (C.C.P.A. 1980)).

181. *Carl Zeiss Stiftung v. Renishaw PLC*, 945 F.2d 1173, 1180 (Fed. Cir. 1991); accord *Hildreth v. Mastoras*, 257 U.S. 27, 34 (1921) (“The machine patented may be imperfect in its operation; but if it embodies the general principle, and works . . . it is enough.”).

182. *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1571 (Fed. Cir. 1992).

183. See MPEP, *supra* note 135, § 2107.01 (“[A]ny reasonable use that an applicant has identified for the invention that can be viewed as providing a public benefit should be accepted as sufficient”); *In re Chilowsky*, 229 F.2d 457, 462 (C.C.P.A. 1956) (“[I]n the usual case where the mode of operation alleged can be readily understood and conforms to the known laws of physics and chemistry, operativeness is not questioned, and no further evidence is required.”). The primary exception to this practice is when the claimed invention is “incredible,” as in the case of a “perpetual motion machine” that would violate the laws of thermodynamics. MPEP, *supra* note 179, § 2107.01 (citing *Newman v. Quigg*, 877 F.2d 1575, 1581 (Fed. Cir. 1989)).

184. See MPEP, *supra* note 135, § 704.01 (“After reading the specification and claims, the examiner searches the prior art.”); *id.* § 904.

185. *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366 (Fed. Cir. 1999).

public policy.”¹⁸⁶ Under this “moral utility” doctrine, patents that did not achieve a morally legitimate use were not considered “useful.”¹⁸⁷

Thus, deadly weapons,¹⁸⁸ gambling machines,¹⁸⁹ and inventions useful for committing fraud¹⁹⁰ were found not “useful” in the past because they facilitated illegal activities and failed to provide a morally acceptable benefit to society. Most recently, in 1998 the Patent Office issued a press release stating that an invention relating to a “human/non-human chimera”¹⁹¹ may “fail to meet the public policy and morality aspects of the utility requirement.”¹⁹²

186. CHISUM ON PATENTS, *supra* note 52, § 4.01; *Geneva Pharms., Inc. v. Glaxosmithkline PLC*, 213 F. Supp. 2d 597, 610 (E.D. Va. 2002) (“A patent possesses utility ‘if it will operate to perform the functions and secure the results intended, and its use is not contrary to law, moral principles, or public policy.’”) (quoting *Callison v. Dean*, 70 F.2d 55, 58 (10th Cir. 1934)); *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (C.C.D. Mass. 1817) (No. 8568) (Story, J.) (stating that as “[t]he word ‘useful’ . . . is incorporated into the act in contradistinction to mischievous or immoral,” inventions that are “injurious to the well-being, good policy, or sound morals of society” lack utility).

187. See Margo A. Bagley, *Patent First, Ask Questions Later: Morality and Biotechnology in Patent Law*, 45 WM. & MARY L. REV. 469, 476 (2003) (“The doctrine allowed both the USPTO and courts to deny patents on morally controversial subject matter under the fiction that such inventions were not ‘useful.’”).

188. See *Lowell*, 15 F. Cas. at 1019 (suggesting that “a new invention to poison people . . . or to facilitate private assassination” would be unpatentable for lack of utility). *But see In re Watson*, 517 F.2d 465, 475 (C.C.P.A. 1975), which states:

No one, we suppose, would seriously maintain that, as a matter of policy, a composition unsafe for use by reason of extreme toxicity to the point of immediate death under *all* conditions of its sole contemplated use in treating disease of the human organism would nevertheless be useful within the meaning of the patent laws.

189. See *Brewer v. Lichtenstein*, 278 F. 512, 513 (7th Cir. 1922) (invalidating a patent on a “lottery device”); *Schultze v. Holtz*, 82 F. 448, 449 (N.D. Cal. 1897) (invalidating a patent on a “coin-controlled apparatus” used only “for gambling purposes in saloons [and] bar-rooms”); *Nat’l Automatic Device Co. v. Lloyd*, 40 F. 89, 89–90 (N.D. Ill. 1889) (invalidating patent for toy horse racing game because “the only use to which [the games have] been so far applied, is to place them in saloons, bar-rooms, and other drinking places, where the frequenters of such places make wagers as to which of the toy horses will stop first”).

190. A court invalidated a patent for a process that made low-grade tobacco leaves appear to be of fine quality by artificially adding spots, which were associated with high quality tobacco:

In authorizing patents to the authors of new and useful discoveries and inventions, congress did not intend to extend protection to those which confer no other benefit upon the public than the opportunity of profiting by deception and fraud. To warrant a patent, the invention must be useful; that is, capable of some beneficial use as distinguished from a pernicious use.

Rickard v. Du Bon, 103 F. 868, 873 (2d Cir. 1900); *accord Scott & Williams, Inc. v. Aristo Hosiery Co.*, 7 F.2d 1003, 1004 (2d Cir. 1925).

191. Chimeras, in this sense, refer to “creatures made, in theory, by blending human cells with those of various animals such as mice, chimpanzees, pigs, or baboons.” Bagley, *supra* note 187, at 490.

192. Media Advisory, U.S. Patent and Trademark Office, Facts on Patenting Life Forms Having a Relationship to Humans (Apr. 1, 1998), <http://www.uspto.gov/web/offices/com/speeches/98-06.htm>. However, the Patent Office’s position may not be upheld in court. See Bagley, *supra* note 187, at 492 (“If the USPTO persists in maintaining a rejection of the

C. Rejection of the Moral Utility Doctrine

This moral utility requirement, however, has been steadily eroded by the Patent Office and the courts over the past century and, in the 1999 *Juicy Whip v. Orange Bang, Inc.* case, the Federal Circuit clarified that the requirement was no longer good law.¹⁹³ The current version of the Patent Office's Manual of Patent Examining Procedure, citing *Juicy Whip*, states unequivocally, "A rejection under 35 U.S.C. 101 for lack of utility should not be based on grounds that the invention is frivolous, fraudulent or against public policy."¹⁹⁴ There are two primary reasons for the rejection of the moral utility doctrine.

1. Rise of Moral Pluralism

First, the rise of moral pluralism due to evolving American moral standards¹⁹⁵ has rendered it untenable for the Patent Office or the courts to deem an invention not "useful" on the ground that some members of society would find an invention, or its use, immoral or unethical.¹⁹⁶ For example, as Americans have come to view gambling more favorably, gambling-related inventions have been held to satisfy

chimera application claims under the moral utility doctrine, such a rejection is bound to be overturned in court.").

193. See *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366–68 (Fed. Cir. 1999); Bagley, *supra* note 187, at 477, 488–93 (stating that *Juicy Whip* "sounded the death-knell for the moral utility requirement"); Cynthia M. Ho, Note, *Building a Better Mousetrap: Patenting Biotechnology in the European Community*, 3 DUKE J. COMP. & INT'L L. 173, 195 (1992) ("[T]he grant of a patent is not an ethical event."); see also MPEP, *supra* note 135, §§ 2107–2107.03 (making no mention of morality); Toupin Statement, *supra* note 42 ("[T]here is no clear provision that allows the USPTO to reject an invention solely on the grounds that the invention may be against public policy . . ."). But see Ikechi Mgbeoji, *The "Terminator" Patent and Its Discontents: Rethinking the Normative Deficit in Utility Test of Modern Patent Law*, 17 ST. THOMAS L. REV. 95, 97 (2004) ("Modern patent systems need to outgrow their pretense that social and ecological factors are not legitimate factors for determining utility of inventions.").

194. MPEP, *supra* note 135, § 706.03(a)(ii) (emphasis omitted).

195. For illustrative examples, see Robert A. Choate, CASES AND MATERIALS ON PATENT LAW 380 (1973):

Anyone whose life has spanned a decade or two in the 20th Century has witnessed how moral standards can change in a period of a few years. Gambling devices, frowned upon early in the century, are legalized in several states; race tracks and lotteries are now used to generate substantial amounts of income in many states. Birth control devices, in a period of thirty to forty years, have come from a position of illegality to a position where they are welcomed by some as a means of curbing a population explosion.

196. See Toupin Statement, *supra* note 42 ("The USPTO has issued patents to inventions that . . . may be considered to be immoral or offensive by some."); Bagley, *supra* note 187, at 489 ("[C]ourts began to whittle away at the scope of the [moral utility] requirement as societal views on morality shifted and difficulties in defining morally acceptable inventions multiplied.").

the utility requirement.¹⁹⁷ And, while the morality of stem-cell research, human cloning, and other biotechnological innovations continues to be the subject of intense debate,¹⁹⁸ the Patent Office has ignored the moral issues and awarded numerous patents in these areas.¹⁹⁹

2. Rise of the Regulatory State

The second, and more important, reason for the modern rejection of the moral utility doctrine is that courts, commentators, and the Patent Office itself have come to recognize the limited role that patent law plays in the overall legal and regulatory apparatus.²⁰⁰ A patent does not provide a license to the patentee to practice her invention. Rather, a patent merely grants a “right to exclude” others from doing so.²⁰¹ So long as an invention complies with the Patent Act, the Patent Office will grant a patent.²⁰²

197. *Ex parte* Murphy, 200 U.S.P.Q. 801, 802 (Bd. App. 1977) (“[W]hile some may consider gambling to be injurious to the public morals and the good order of society, we cannot find any basis in [§ 101] or related sections which justify a conclusion that inventions which are useful only for gambling ipso facto are void of patentable utility.”); *Chicago Patent Corp. v. Genco, Inc.*, 124 F.2d 725, 727 (7th Cir. 1941) (upholding a patent on a pinball machine against argument it was invalid for being “a gambling machine without utility”); *Koppe v. Burnstingle*, 29 F.2d 923, 925 (D.R.I. 1929) (upholding a patent on “Golf Dice” game that could be used for gambling purposes).

198. See, e.g., Bagley, *supra* note 187, at 505–09 (discussing the morality of human cloning); Sheryl Gay Stolberg, *First Bush Veto Maintains Limits on Stem Cell Use*, N.Y. TIMES, July 20, 2006, at A1 (quoting Rep. Mike Pence, who described stem-cell research as “a profound moral issue”).

199. See, e.g., U.S. Patent No. 6,200,806 col.21 l.2-3 (filed June 26, 1998) (claiming “[a] purified preparation of . . . human embryonic stem cells”); U.S. Patent No. 6,211,429 col.23 l.57 (filed June 18, 1998) (claiming a “method for producing a cloned mammalian embryo”).

200. See *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979) (“[T]he states are free to regulate the use of such intellectual property in any manner not inconsistent with federal law.”); *Webber v. Virginia*, 103 U.S. (13 Otto) 344, 347–48 (1880) (“Congress never intended that the patent laws should displace the police powers of the States, meaning by that term those powers by which the health, good order, peace, and general welfare of the community are promoted.”); *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1368 (Fed. Cir. 1999) (observing that Congress, the states, and regulatory agencies play the primary role in regulating the sale and use of patented inventions); Toupin Statement, *supra* note 42 (stating that the Patent Office “endeavor[s] to carry out its mission to grant patents as allowed by law, and to refrain from making policy decisions not within its legal authority”); James R. Chiapetta, Comment, *Of Mice and Machine: A Paradigmatic Challenge to Interpretation of the Patent Statute*, 20 WM. MITCHELL L. REV. 155, 178 (1994) (“The proper venue for consideration of moral issues of biotechnology is within the regulatory agency entrusted with the product’s oversight, not the PTO.”); Ho, *supra* note 193, at 195 (“[T]he grant of a patent is not an ethical event. Instead, it is the regulatory system of a given nation that monitors social concerns as it implements general legislation — concerns which frequently encompass ethics and morality.”).

201. See *supra* Part I.C.

202. Toupin Statement, *supra* note 42.

The states, as well as other branches of the federal government, are charged with deciding whether, how, and by whom patented inventions may be used. Thus, as mentioned above, if someone invented a novel type of firework in a state that banned its sale, she could certainly receive a patent on her invention, but she would not be allowed to sell it in that state.²⁰³

Consider the highly regulated field of pharmaceuticals. The fact that a patent has issued for a chemical compound, such as the antidepressant sold by Pfizer as “Zoloft,”²⁰⁴ does not mean that it may be prescribed or sold as medicine. The Patent Office does not have the competence or authority to make that decision. Rather, “Congress has given the responsibility to the FDA, not to the Patent Office, to determine in the first instance whether drugs are sufficiently safe for use that they can be introduced in the commercial market.”²⁰⁵ For instance, a newly created drug that prevented healthy people from developing cancer would surely be patentable, even if diabetes and nearsightedness were common side effects. The FDA, however, might think twice before approving the drug for public consumption.

Or consider the Federal Circuit’s 1999 *Juicy Whip* decision, in which the court finally and firmly rejected the moral utility doctrine.²⁰⁶ The patent at issue in that case²⁰⁷ was for a “post-mix” beverage dispenser that simulates the appearance of a “pre-mix” dispenser.²⁰⁸ A “post-mix” beverage dispenser, such as a fountain soda machine, “stores beverage syrup concentrate and water in separate locations until the beverage is ready to be dispensed.”²⁰⁹ In a “pre-mix” beverage dispenser, by contrast, “the syrup concentrate and water are pre-mixed and the beverage is stored in a display reservoir bowl until it is ready to be dispensed.”²¹⁰ Noncarbonated beverages, such as fruit punch and horchata, are often served in pre-mix dispensers.

Each type of dispenser has its advantages and disadvantages. For the pre-mix dispenser, the “display bowl is said to stimulate impulse buying by providing the consumer with a visual beverage display. A pre-mix display bowl, however, has a limited capacity and is subject to contamination by bacteria. It therefore must be refilled and cleaned frequently.”²¹¹ A post-mix dispenser, while considered less effective at marketing the beverage, is easier and cheaper to maintain. The pat-

203. See *supra* Part I.C.

204. U.S. Patent No. 4,536,518 (filed Nov. 1, 1979).

205. *In re Watson*, 517 F.2d 465, 476 (C.C.P.A. 1975).

206. *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364 (Fed. Cir. 1999).

207. U.S. Patent No. 5,575,405 (filed Apr. 18, 1996).

208. *Juicy Whip*, 185 F.3d at 1365.

209. *Id.*

210. *Id.*

211. *Id.*

ented beverage dispenser at issue in *Juicy Whip* combined the best aspects of each type of beverage dispenser:

The invention claimed in the . . . patent is a post-mix beverage dispenser that is designed to look like a pre-mix beverage dispenser. The claims require the post-mix dispenser to have a transparent bowl that is filled with a fluid that simulates the appearance of the dispensed beverage and is resistant to bacterial growth. The claims also require that the dispenser create the visual impression that the bowl is the principal source of the dispensed beverage, although in fact the beverage is mixed immediately before it is dispensed, as in conventional post-mix dispensers.²¹²

In *Juicy Whip*, the patent holder sued a competitor for infringement. The competitor argued to the district court that the patent was invalid on the ground that it lacked moral utility “because its purpose was to increase sales by deception, *i.e.*, through imitation of another product.”²¹³ The district court adopted this rationale and granted summary judgment to the defendant.²¹⁴

On appeal, the Federal Circuit rejected the moral utility doctrine, emphasized the limited role of the patent system in the overall regulatory apparatus, and reversed.²¹⁵ The court held that the moral utility doctrine, despite its long history, does not “represent[] the correct view of the doctrine of utility under the Patent Act of 1952.”²¹⁶ Rather, the only relevant question is whether the patented invention does what it claims to do:

The fact that customers may believe they are receiving fluid directly from the display tank does not deprive the invention of utility . . . [E]ven if the use of a reservoir containing fluid that is not dispensed is considered deceptive, that is not by itself sufficient to render the invention unpatentable. The requirement of “utility” in patent law is not a directive to the Patent and Trademark Office or the courts to serve as arbiters of deceptive trade practices. Other agencies, such as the Federal Trade Commission and the Food and Drug Administration, are assigned the

212. *Id.*

213. *Id.* at 1366.

214. *Id.* at 1367.

215. *Id.* at 1367–68.

216. *Id.* at 1367.

task of protecting consumers from fraud and deception in the sale of food products. As the Supreme Court put the point more generally, “Congress never intended that the patent laws should displace the police powers of the States, meaning by that term those powers by which the health, good order, peace and general welfare of the community are promoted.”²¹⁷

Juicy Whip makes it quite clear that the patent system is not concerned with other branches of law. Whether an invention is legal in one jurisdiction or another is simply not relevant to the question of patentability. In other words, patent law is an island unto itself.

D. Illegal Inventions Are Patentable

One important implication of the fact that patent law takes no cognizance of other positive law is that illegal inventions are patentable.²¹⁸ During Prohibition, for example, a patent was issued for a method of producing alcohol.²¹⁹ More recently, patents have been awarded for radar detectors,²²⁰ cock-fighting equipment,²²¹ and drug paraphernalia,²²² all of which are contraband in at least some states and/or under federal law.²²³ As another example, online gambling may also be illegal under federal law,²²⁴ but the Patent Office has issued numerous patents related to online gambling.²²⁵

There is, however, no internal conflict in such cases because “a patent is not the granting of a right to make, use or sell” the patented invention.²²⁶ As explained in Part I.C, *supra*, a patent “grants only the right to exclude others from making, using or selling the patented device.”²²⁷ Thus, a federal patent for an “illegal invention” — something that is expressly banned by a state or federal statute — is not prob-

217. *Id.* at 1367–68 (internal citations omitted).

218. Toupin Statement, *supra* note 42 (“The USPTO has issued patents to inventions that may arguably be illegal at least in certain jurisdictions . . .”).

219. U.S. Patent No. 1,785,447 (filed June 28, 1926).

220. *E.g.*, U.S. Patent No. 7,023,374 (filed Oct. 6, 2002).

221. U.S. Patent No. 6,928,960 (filed Sept. 6, 2001).

222. *See supra* note 40 and accompanying text.

223. *See, e.g.*, Va. Code Ann. § 46.2-1079 (2005) (banning radar detectors); N.Y. AGRIC. & MKTS. LAW § 351 (McKinney 2007) (declaring it a felony to cause a cock or other animal to fight); 21 U.S.C. § 863(a) (2000) (“[I]t is unlawful for any person . . . to sell or offer for sale drug paraphernalia.”).

224. *See* Indictment in *United States v. BetOnSports PLC*, No. 06 Cr. 337 (E.D. Mo. June 1, 2006) (indicting the operators of BetOnSports.com, a Costa Rican company that offered an Internet gambling service).

225. *See, e.g.*, Method of Participating in a Live Casino Game From a Remote Location, U.S. Patent No. 5,800,268 (filed Oct. 20, 1995); Remote Gaming Device, U.S. Patent No. 7,066,815 (filed Nov. 16, 2001).

226. *Little Mule Corp. v. Lug All Co.*, 254 F.2d 268, 272–73 (5th Cir. 1958).

227. *Id.*

lematic, because the patent does not grant the affirmative right to make, use, or sell the invention.

V. LEGAL METHODS ARE NOT “INVENTIONS”

So why does the term “invention” refer *only* to products or processes that utilize or harness a law of nature for human benefit, and thus excludes from its scope legal methods which, by definition, utilize or harness positive law?

First, the long line of Supreme Court cases defining invention in this way²²⁸ calls forth the basic canon of construction *expressio unius est exclusio alterius*. In other words, by repeating numerous times that an invention is something made by man that utilizes or harnesses laws of nature for human benefit, the Supreme Court has implied this to be an exclusive definition.

The rejection of the moral utility doctrine²²⁹ and the rise of the modern view that illegal inventions are patentable²³⁰ confirm this view, and show that non-patent positive law is ignored for purposes of patentability.²³¹ To be consistent with these related lines of doctrine, the term “invention” cannot be construed to include processes that employ positive law.

Second, legal methods differ in fundamental ways from the types of methods that have traditionally been considered patentable. Because of these differences, the economic justifications that underlie the patent system²³² do not apply to legal methods. Furthermore, regardless of what economic theory might predict, experience has shown that the United States produces more than enough legal innovation. There is no need to provide an extra incentive for attorneys to develop new and useful legal methods.

A. Doctrine

First and foremost, the Supreme Court has consistently construed the term “invention” to mean something that utilizes or harnesses laws of nature for human benefit.²³³ Nothing in the case law suggests that anything that fails to harness the laws of nature can also be an “invention” for purposes of patentability.²³⁴

228. See *supra* Part III.C.1.

229. See *supra* Part IV.C.

230. See *supra* Part IV.D.

231. See *supra* Part IV.

232. See *supra* Part I.B.

233. See *supra* Part III.C.1.

234. See Examination Guidelines for Computer-Related Inventions, 61 Fed. Reg. 7478, 7481 (Feb. 28, 1996) (“[S]ubject matter that is *not* a practical application or use of an idea, a law of nature or a natural phenomenon is *not* patentable.”) (emphasis added); cf. *In re Alap-*

Buttressing this conclusion is the fact that, since the moral utility doctrine fell by the wayside, positive law is to be ignored when determining whether something is “useful” within the meaning of § 101. The Patent Office routinely grants patents for devices that are expressly banned by federal or state law, because it properly takes no cognizance of non-patent positive law in examining applications for utility.²³⁵

To maintain doctrinal consistency, the term “invention” should likewise be construed without regard to positive law. The Federal Circuit has instructed patent examiners to be willfully blind to non-patent positive law when examining a patent application for compliance with the “utility” requirement. It would be inconsistent for examiners to take into account such positive law when examining a patent application for compliance with the “invention” requirement.

Hence, as a matter of statutory construction, the term “invention” should be construed under the Patent Act as referring only to those products or processes that utilize or harness one or more laws of nature to achieve their purpose. Processes that utilize positive law to achieve their purpose, i.e., legal methods, are thus excluded from the definition of “invention” for purposes of patent law.

However, the fact that the patent system ignores positive law does not mean that a product that becomes more valuable because of a legal regime ceases to be a patentable invention. For example, in 1998, at the behest of the California legislature, the California Air Resources Board adopted regulations governing the composition of low emissions, reformulated gasoline (“RFG”).²³⁶ The regulations required that gasoline sold in California meet certain standard requirements; these standards, it turned out, “substantially overlapped” with a patent held by Unocal, a private gas and oil company.²³⁷ Thus, in order to sell gasoline in California, other companies were obliged to license Unocal’s RFG patent.²³⁸

Part of the utility of Unocal’s RFG patent derived from the fact that oil companies needed to practice it in order to comply with California law. If that were its only use, the RFG patent would be nothing more than a legal method. However, even in the absence of the California regulation, the RFG patent would still demonstrate substantial utility in that it reduces emissions from automobiles, thereby improving the quality of the air we breathe. This use is beneficial, whether or

pat, 33 F.3d 1526, 1569 (Fed. Cir. 1994) (Newman, J., concurring) (“Most technologic inventions involve the application of scientific principles and phenomena of nature to specific purposes. It is these purposes that are the subject matter of 35 U.S.C. § 101 . . .”).

235. See *supra* Part IV.D.

236. See Complaint at ¶ 1, *In re Union Oil Co. of Cal.*, No. 9305 (F.T.C. Mar. 4, 2003), available at <http://www.ftc.gov/os/2003/03/unocalcmp.htm>.

237. See *id.* at ¶ 5.

238. See *id.* at ¶¶ 5–6.

not ordered by the state of California, and thus the RFG patent can properly be said to utilize or harness a law of nature for human benefit.

B. Policy

Monopolies are strongly disfavored in the United States; our robust antitrust law is a testament to that fact. By providing an exception for patent monopolies, the Constitution recognizes the wisdom of awarding limited monopolies to inventors in order to spur technological innovation. As the Supreme Court stated in *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, “[F]rom the outset, federal patent law has been about the difficult business ‘of drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not.’”²³⁹

The underlying policies of the patent system are to foster technological progress by providing an economic incentive to invention and to increase the public storehouse of knowledge by conditioning the patent grant on complete disclosure of the claimed invention.²⁴⁰ As is evident from the preamble of the Intellectual Property Clause, the Constitution expressly recognizes that, in order to achieve these policies, a patent system is needed to overcome the “free-rider” and secrecy problems discussed above.²⁴¹ If the government did not grant patents for new and useful products and processes, economic theory predicts that the pace of technological innovation would be intolerably slow.

But because monopolies are generally disallowed, the Supreme Court has made clear that the exception afforded to the patent system should be narrowly construed: “[I]mplicit in the Patent Clause itself [is the understanding] that free exploitation of ideas will be the rule, to which the protection of a federal patent is the exception.”²⁴² It follows that, unless a patent monopoly is truly needed to encourage an optimum level of innovation in a given field, such a monopoly should not be granted.²⁴³

In light of these policies — free exploitation of ideas, except where patent monopoly is needed — legal methods should clearly be excluded from the scope of patentable inventions. Legal methods differ in important ways from the products and processes that have always been considered “inventions,” and an examination of these differences makes plain that the historic, policy, and economic justifi-

239. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 148 (1989) (quoting THOMAS JEFFERSON, 13 WRITINGS OF THOMAS JEFFERSON 335 (Memorial ed. 1904)).

240. See *supra* Part I.B.

241. See *supra* Part I.B.

242. *Bonito Boats*, 489 U.S. at 151.

243. See generally *id.*

cations for the traditional patent system²⁴⁴ are simply not applicable to legal methods.

1. An Economic Incentive Is Unnecessary

As explained in Part I.B.1, there is a powerful economic justification for granting patents in the technological arts: patents are needed in order to foster innovation, due to the high costs of research and development and the problem of “free-riders.” This justification does not apply to legal innovation, however, because the R&D costs are much lower than in technological fields. There is no need to buy or build expensive machinery or run tests on prototypes. While researching precedents and spending time and energy conceiving of a new legal method are not free, these costs are relatively modest.

Furthermore, inventors in technological fields must invest time and money in the hope that the fruits of their labor will be successful inventions that they can patent and then sell or license. In other words, they make a significant upfront investment for a chance of a big payday down the line. This is a game of high risk and high reward; the patent system protects the latter, so that inventors will engage in the former.

Legal innovators, by contrast, are generally paid by their clients for every hour they spend conceiving and implementing legal methods. Moreover, they generally do not share in any of the pecuniary gains enjoyed by their clients. In other words, they are paid on a continuous basis regardless of their success, the exact opposite of the “high-risk, high-reward” business model of technological inventors. Hence, attorneys do not need the protection that patents provide.

But what about research employees that receive a regular salary as they try to develop new inventions? Salaried inventors are common at a variety of firms, including software firms such as Microsoft and biotech firms such as Genentech. These employees develop new technologies as part of their everyday paid work, just as attorneys develop new legal strategies and methods during time that they bill to clients. This parallel fails, however, when we recognize that the relevant “inventor” — for purposes of economic theory — at Microsoft or Genentech is not the individual engineer or scientist that develops new inventions, but rather the firm itself. The firm, not the employees, pays the upfront R&D costs of developing new technologies, and therefore it is the firm that assumes the economic risk. Thus, while an individual employee might rationally be indifferent to whether her inventions are patentable (because she receives a fixed salary), the

244. *See supra* Part I.B.

firm cares quite a bit, and the economic theory of patents responds to that latter concern.

In addition, while the patent system is designed, in large measure, to prevent latecomers from “free-riding” on another’s invention, thereby reducing the incentive to invent in the first place, the public has always been actively encouraged to free-ride on the legal methods created by others. Pursuant to *stare decisis*, precedents established by private litigants in past cases become part of the law that everyone must obey. Indeed, copyright protection is not available for judicial opinions.²⁴⁵ In other words, the “free-rider” problem simply has no relevance to legal innovation, because the public has a right to “free-ride” on legal methods successfully advanced by others.

Moreover, the experience of the past two centuries has confirmed that economic incentives are not needed to incentivize attorneys to innovate.²⁴⁶ From 1790 to 2003, innumerable legal innovations were developed, such as the principle of *res ipsa loquitur*,²⁴⁷ the reverse triangular merger,²⁴⁸ and, of course, the poison pill, without the extra incentive provided by the prospect of patent protection. This history shows that American lawyers are in no danger of producing too few legal innovations. If anything, the opposite is true. In the tax arena, for example, new types of tax strategies are developed all the time, and the IRS is kept busy analyzing and approving or rejecting them.

In short, economic theory predicts that an efficient level of legal innovation will come about in the absence of patent protection for legal methods, and experience suggests that this theory is correct.

2. Legal Methods Cannot Be Kept Secret

Recall from Part I.B.2 that a second rationale for a patent system is that, “in the absence of legal protection for an invention, the inventor will try to keep the invention secret,”²⁴⁹ rather than let others free-ride. Because invention is often a cumulative process, with each innovation building on the last, such secrecy can be expected to hinder technological progress. The patent system combats the incentive to keep inventions secret by requiring, as a condition of the patent grant,

245. See *Wheaton v. Peters*, 33 U.S. (8 Pet.) 591, 668 (1834) (“[N]o reporter has or can have any copyright in the written opinions delivered by this court; and that the judges thereof cannot confer on any reporter any such right.”).

246. Cf. Oliver Wendell Holmes, Jr., Lowell Lecture 1 (Nov. 23, 1880), http://www.law.harvard.edu/library/collections/special/online-collections/common_law/index.php (“The life of the law has not been logic; it has been experience.”).

247. See generally *Byrne v. Boadle*, 159 Eng. Rep. 299 (1863) (conceiving the tort theory of *res ipsa loquitur*).

248. See *Nash v. Farmers New World Life*, Nos. 72-475 & 73-398, 1976 WL 781, at *3 (S.D. Ohio Mar. 30, 1976) (mentioning “reverse triangular merger” in a case for the first time).

249. LANDES & POSNER, *supra* note 30, at 294.

that the inventor describe exactly how to make, use, or practice her invention.

In contrast, legal methods operate under a completely different regime. The American legal system reveres precedent, and novel legal structures or techniques are generally frowned on. Hence, by their nature, legal methods have only speculative value until they have been approved — in public — by a court or regulator. During any period in which a legal method is kept secret, it is, in a sense, inchoate and possibly worthless. A tax strategy that has never been tested in court or approved by the IRS, for example, may not be worth the paper on which it is printed, because at any moment the government could deem it invalid.

When the poison pill was first introduced, for example, its legality — and thus utility — under state (particularly Delaware) law was unclear, and few companies were willing to adopt it.²⁵⁰ After the Delaware Supreme Court upheld the poison pill as permissible under that state's corporate law,²⁵¹ however, its legitimacy was established, and it became widely used.²⁵²

As soon as a legal method is approved by the government, it becomes valuable. At that very moment the legal method also becomes part of the generally applicable law that everyone is expected to know and obliged to follow. It would therefore be most inappropriate, and possibly even violative of Due Process, to give a private party the power to exclude others from employing a legal method that she pioneered.²⁵³

In brief, legal methods cannot be kept secret, so there is no need to provide an incentive to encourage legal innovators to disclose their novel legal methods to the public.

VI. COMPARISON: BUSINESS METHODS ARE “INVENTIONS”

But what does this mean for “business method patents”? If legal methods are not “inventions” because they utilize positive law, rather than any laws of nature, for human benefit, can a method of doing business qualify as an “invention”? The short answer is yes, because most if not all novel business methods either save time or harness a law of nature for human benefit.

250. See, e.g., Lee A. Daniels, ‘Poison Pill’: A Court Test, N.Y. TIMES, Jan. 22, 1985, at D2.

251. Moran v. Household Int’l, Inc., 500 A.2d 1346 (Del. 1985).

252. See S.E.C. Faults ‘Poison Pill’, N.Y. TIMES, Oct. 29, 1986, at D4. (“Since the court ruling, 30 companies a month have adopted the poison pills . . .”).

253. To the extent that secrecy is appropriate for legal methods, there is already a robust body of law pertaining to attorney-client privilege and other grounds for maintaining secrecy.

First, many business method patents save time, which is an accepted concept of modern physics. Amazon.com's "1-click" method, for example, saves users' time, and is therefore just as patentable as a device that saves energy, such as a more efficient automobile engine.

Second, a fair number of business method patents are practical applications of algorithms or pure mathematics. Recall from Part III.B, *supra*, that the Supreme Court has held that "an algorithm, or mathematical formula, is like a law of nature" and, hence, is not patentable under the law of nature doctrine.²⁵⁴ So, while applications of laws of nature are not themselves patentable, something that utilizes or harnesses such laws of nature for human benefit qualifies as an "invention" within the meaning of the Patent Act. Business method patents that apply algorithms are therefore patentable.

The Black-Scholes options-pricing model, for instance, is a differential equation that provides a value for a stock option, premised on the assumption that the underlying stock price evolves according to Brownian Motion. The model is not itself patentable under the law of nature doctrine, because it is pure mathematics,²⁵⁵ but a patent could be issued for a novel and useful business method that employed Black-Scholes.²⁵⁶

Consider also the algorithm for continuously (as opposed to quarterly or annually) compounded interest, which is based on the equation $S = Pe^{rt}$.²⁵⁷ The law of nature doctrine holds that this equation is not itself patentable, but a business method that applied it in a practical manner would be.

In sum, *State Street* was correctly decided: business methods are patentable. But, as explained in Part V, *supra*, the Patent Office's extension of that case to encompass legal methods is not justified.

VII. CONCLUSION

"Invention," as used in § 101 of the Patent Act, means anything made by man that utilizes or harnesses a law of nature for human benefit. Technological innovations, from the telephone to Tylenol, satisfy this definition, as do most "business methods." But legal methods, such as the poison pill or a tax strategy, do not. Legal methods, no matter how novel or valuable, are not "inventions," and are therefore not eligible for patenting.

254. *Parker v. Flook*, 437 U.S. 584, 589 (1978).

255. See LANDES & POSNER, *supra* note 30, at 306.

256. See *id.*

257. S is the final value of an account, P is the original principle, r is the annual rate of return, t is the number of years the principal has been invested for, and e is a transcendental number defined as the limit of $(1 + 1/n)^n$ as n approaches infinity.