

NOTHING IS PATENTABLE

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INTRODUCTION: INVENTIVE APPLICATION

It is a bedrock principle of patent law that abstract ideas and natural phenomena are not patentable. This idea is hardly controversial, because purely abstract and natural discoveries will not satisfy one of the explicit categories of patentable inventions: machines, methods, compositions of matter, or manufactures.¹ Just above the bedrock, however, and controversy abounds when inventors claim the application of abstract ideas and laws of nature. Determining whether a simple application of an idea or phenomenon should be eligible for patenting is no easy task.

A straightforward solution is to consider all such applications eligible, and allow the remaining patentability rules to weed out undeserving patent applications.² But the Supreme Court rejected this proposal, ruling that the other rules were not sufficient—at least as currently applied—to police the outer penumbra of abstract ideas and natural phenomena.³ The alternative—but still straightforward—solution, barring all patents of a particular type, was also rejected,⁴ and the Court has cautioned that the subject-matter exceptions should not be so broad as to swallow all patents.⁵ What remains between these two extremes is a foggy standard cloaked as a rule: If the inventor does not do *something inventive* beyond the unpatentable abstraction, then no patent should issue. This rule has been alternatively called the insignificant pre-/post-solution activity test and (more recently) the inventive application test.

I. THE HISTORY OF A TEST

Where did the inventive application test come from? This is where Professor Jeffrey Lefstin's outstanding article, *Inventive Application: A History*,⁶ comes in. Recent Supreme Court opinions imply that it is as old as the abstract idea exception itself, but Professor Lefstin shows that the exact opposite is true. In doing so, he takes on the conventional wisdom.

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1. Mark A. Lemley et al., *Life After Bilski*, 63 STAN. L. REV. 1315, 1328 (2011).

2. See generally Michael Risch, *Everything is Patentable*, 75 TENN. L. REV. 591 (2008).

3. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1303–04 (2012).

4. *Bilski v. Kappos*, 130 S. Ct. 3218, 3228–29 (2010).

5. *Mayo*, 132 S. Ct. at 1293 (“The Court has recognized, however, that too broad an interpretation of this exclusionary principle could eviscerate patent law. For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.”); *Alice Corp. Prop. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (“At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law.”).

6. 67 FLA. L. REV. 565 (2015).

In one direction, *Inventive Application* shows how the case usually cited as the source of the test, *Neilson v. Hartford*,⁷ stands for the exact opposite principal: that only the barest application of an abstract idea is sufficient to justify a patent. In *Neilson*, the patentee discovered that hot air blown into a furnace was better than cold air, and simply claimed a receptacle to heat air before it entered the furnace. Professor Lefstin examines the history of the discovery in *Neilson*, the *Neilson* case itself, the historical context of *Neilson*, and treatment of *Neilson* in both British and United States case law. He shows that no inventive application was required by law, and the court simply looked to ensure that there more than just an idea patented, even if the idea was claimed very broadly. The analysis is a remarkably thorough historical analysis. Through the culling of contemporaneous sources, the article debunks any possible notion that an inventive-application test could have come from *Neilson* or any other 19th century case. The support is simply not there.

In the other direction, *Inventive Application* shows where the test originated: *Funk Brothers*,⁸ a case that denied patentability to a combination of pre-existing bacteria. Many who favor broader subject matter rules view *Funk Brothers* as an obviousness case,⁹ but the article uses the same historical context and analysis to show why the case instead spawned the inventive-application test. More compelling support for this argument comes from several cases decided after *Funk Brothers* that explicitly read it as requiring an inventive application. This train of precedent continues through *Parker v. Flook*.¹⁰

While *Inventive Application* is persuasive that *Funk Brothers* is the first inventive-application case, the article is less convincing that the case was not *also* an obviousness type rejection. Before 1952, the courts had no set language to describe whether a patent was obvious, because “obviousness” was defined for the first time in the 1952 Patent Act. But it is obvious (to pardon the pun) that Justice Douglas described the combination as lacking “invention,” which was a trigger-word for obviousness before 1952. Given how novelty and obviousness are now wrapped into the inventive-application analysis,¹¹ it is possible that *Funk Brothers* required an

7. (1841) 151 Eng. Rep. 1266 (Ex.).

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

9. My own work is included among these, though my theory is different than the one Professor Lefstin rejects. I have argued that the combination of preexisting materials might be viewed as inherently obvious, which is different than asking whether someone else would have independently arrived at the same combination. Risch, *supra* note 2, at 599, quoting *Great At. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 152–53 (1950) (“A patent for a combination which only unites old elements with no change in their respective functions, such as is presented here, obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men.”).

10. 437 U.S. 584 (1978).

11. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1304 (2012).

inventive application, and that the court construed the combination as obvious, and therefore lacking such an inventive application. The conundrum Professor Lefstin points out is the same one that faces courts today: There is no evidence that the combination was obvious or otherwise non-inventive; we must take it on faith, without the analysis that might ordinarily apply to such determinations under 35 U.S.C. § 103.

Inventive Application has two implicit normative thrusts. First, we should get history right in our law. As Professor Lefstin notes, *Funk Brothers*, “broke radically with a century of English and American precedent, under which practical application was sufficient to confer patent eligibility.”¹² If we can’t get the historical precedent right, then the supposed tests that fall from it will make no sense in light of precedent. Second, a break from precedent might be acceptable if history is not a concern. Given that the inventive-application test appears here to stay, the article explains how inventive application should apply to modern inventions and how cases following *Funk Brothers* may guide us today. That is, we might be skeptical of inventive application because it is new, but that does not excuse us from considering whether a change in the law made it better.

II. NOTHING IS PATENTABLE

These two normative strands combine into a single interesting and important patentable subject matter question: How might historic inventions be considered under the new rule, and why does it matter? While a new test need not conform to history, to the extent it would deny patentability to historically important patents, the test should give some pause.¹³ The following three tables discuss some cases applying the inventive application test to recently challenged and historic patents.

The first table presents a few patents ruled on by the Federal Circuit. Note that the “claim” is not really a particular patent claim, but rather a simplified summary of a representative claim. On the one hand, this simplifies the analysis in a way that tends to lean toward unpatentability. On the other hand, this is the type of simplification that most opinions are doing when determining if the claim is to an abstract idea or law of nature. If it seems uncomfortably glib to patent experts, it should.

12. Lefstin, *supra* note 6, at 645.

13. Michael Risch, *Forward to the Past*, 2009–10 CATO SUP. CT. REV. 333, 345–46 (2010) [hereinafter Risch, *Forward to the Past*]. See also Michael Risch, *America’s First Patents*, 64 FLA. L. REV. 1279 (2012).

Table I: Recent Cases

Patent/Case	Claim	Unpatentable Because	Comment
Versata v. SAP ¹⁴	Method for pricing based on organizational groupings.	Hierarchical organizations are an abstract idea, and the method could be implemented by pen and paper.	Functional claim. Storing, retrieving, sorting, and processing data are not inventive.
Content Extraction v. Wells Fargo ¹⁵	Recognizing data on differently formatted documents.	“CET’s claims are drawn to the basic concept of data recognition and storage.” ¹⁶ Scanners and OCR in prior art, so non-inventive.	Broad, functionally claimed. Rejected specific limitations, such as defining special fields to examine (e.g. the dollar amount on a check).
OIP v. Amazon ¹⁷	Automated A/B pricing method.	Idea of “offer-based price optimization” is made inventive by specific methods or automation steps.	Broad, functionally claimed.
Intellectual Ventures v. Capital One ¹⁸	Tailoring web interfaces based on combination of user navigation and user characteristics.	“There is no dispute that newspaper inserts had often been tailored based on information known about the customer.” A computer that does it is non-inventive.	Broad, functionally claimed.

For the most part, the Federal Circuit has so far invalidated several broad patents that claim only what the invention will do, without limiting how to achieve the goal—called functional claiming. Many of these were weak patents, likely destined to be invalidated anyway.

But the courts have not stopped there. Several recent opinions, mostly

14. *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, No. 2014-1194, 2015 WL 4113722 (Fed. Cir. July 9, 2015).

15. *Content Extraction and Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343 (Fed. Cir. 2014).

16. *Id.* at 1347.

17. *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015).

18. *Intellectual Ventures I LLC v. Capital One Bank (USA)*, No. 2014-1506, 2015 WL 4068798 (Fed. Cir. July 6, 2015).

in district courts, have expanded the notion of abstract ideas while raising the bar for inventiveness. The following table shows four examples, three from district courts and one from the Federal Circuit.

Table II: Aggressive Application

Patent/Case	Claim	Unpatentable Because	Comment
McRo, Inc. v. Naughty Dog ¹⁹	Method for animating mouth motion to match words spoken.	“[I]t would be fair to characterize the claims as drawn to the idea of automated rules-based use of morph targets and delta sets for lip-synchronized three-dimensional animation.” ²⁰ Manual synchronization is in the prior art, so application of discovery of automated method is non-inventive.	Pure method claim – series of steps, with some detail provided in the patent about how to implement the steps. Court rules that broad claim to implementation of automated rules is abstract at point of novelty.
Thales Visionix v. U.S. ²¹	System to track an object (pilot’s head) in reference to a moving object (a jet).	Abstract idea of tracking two objects combined with natural principles of physics. Once the formula for tracking all the components is discovered, all the parts are in the prior art.	Functional claim, but algorithmic steps provided in specification. “[T]he first tactical fighter jet in 50 years without a heads-up display system.”

19. McRO, Inc. v. Naughty Dog, Inc., 49 F. Supp. 3d 669 (C.D. Cal. 2014).

20. *Id.* at 680.

21. Thales Visionix, Inc. v. United States, No. 14-513C, 2015 WL 4396610 (Fed. Cl. July 20, 2015).

Intellectual Ventures v. Symantec ²²	Use of digital signatures to identify spam email.	Comparing IDs is abstract, adding a computer to do the comparing is non-inventive.	Patent describes a way to generate unique ID, but is not limited to that method. Court disregards automated signature generation based on data content when comparing to “conventional” IDs like license plates. ²³
Ariosa Diag. v. Sequenom ²⁴	Method for diagnosing fetal DNA by amplifying paternally inherited cffDNA in maternal plasma.	The cffDNA is natural, and the extraction and amplifying techniques are in the prior art once you know the discovery to use paternally inherited cffDNA in maternal plasma.	Breakthrough procedure reduces need for risky amniocentesis and chorionic villus sampling (CVS) tests.

The challenges do not stop there. In the first ten days of July 2015, there were twelve invalidation decisions. In total, 60% of challenged patents comprising almost 75% of challenged claims have been invalidated since *Alice v. CLS* issued. The results are worse on appeal (so far): 14 out of 15 opinions invalidate patents in the Federal Circuit.²⁵ In the Patent & Trademark Office, rejections also abound. In the ecommerce category, more than 90% of rejections include subject-matter rejections, but other categories, such as cryptography, vehicle control, and computer networks see 20% or more rejections for patentable subject matter.²⁶ To be sure, not

22. *Intellectual Ventures I LLC v. Symantec Corp.*, No. 10–1067–LPS, 2015 WL 1843528 (D. Del. April 22, 2015).

23. The court notes: “The PTO’s example is necessarily rooted in computer technology because malicious code or ‘viruses’ have no significance outside the realm of computer technology. The [claim here], by contrast, is directed to abstract steps that could generally be performed outside of a computing context.” *Id.* at *10. This is patently wrong; unique identifier hashes are more like virus segments than license plates.

24. *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015).

25. Robert R. Sachs, *#AliceStorm: July is Smoking Hot, Hot, Hot...and Versata is Not, Not, Not*, BILSKI BLOG (Jul. 13, 2015), <http://www.bilskiblog.com/blog/2015/07/alicestorm-july-is-hot-hot-hotand-versata-is-not-not-not.html>.

26. Robert R. Sachs, *#AliceStorm In June: A Deeper Dive into Court Trends, and New Data On Alice inside the USPTO*, BILSKI BLOG (Jul. 1, 2015), <http://www.bilskiblog.com/blog/2015/06/alicestorm-a-deeper-dive-into-court-trends-and-new-data-on-alice-inside-the-uspto.html>.

every patent has been invalidated, either by the courts or by the Patent & Trademark Office. But there can be no question that patents are now being aggressively tested and that the penumbra around pure abstract ideas and natural phenomena is growing larger.

Given these results, we might aggressively apply the rationale of the cases above to some of history's most famous patented inventions, as well as lesser inventions that were specifically upheld over a subject-matter challenge. The following table selects several historic court cases in which a patent survived an eligibility challenge, along with a few patents in currently challenged technologies appearing on a list of famous historic patents.²⁷ It turns out that two of the patents I selected—the cotton gin and the light bulb—survived lower court challenges.

Table III: Historic Patents

Patent/Case	Claim	Unpatentable Because	Comment
Whitney v. Carter ²⁸	Cotton Gin ²⁹	The gear shape that maximized effectiveness was a product of nature: the composition of cotton. Other gins were known; once one discovers the natural gear shape, it is obvious to put it in device.	Other gins offered as prior art in trial; court considered whether Whitney was applying principle, ³⁰ but the patent may not have survived higher scrutiny.
Davenport ³¹	Electric Motor— “Applying magnetic and electro-magnetic power as a moving principle for machinery in the manner above described, or in any other substantially the same in principle.” ³²	Once you discover electro-magnetism and alternating current (natural laws), creating a motor used standard parts and merely applied the principle of electromagnetism and alternating current. ³³	Functionally claimed method, not limited to specific equipment. Others all around the world independently developed similar motors before Davenport using the same principles. ³⁴

27. Jim Bieberich, *Significant Historical Patents of the United States*, USPAT, <http://www.uspat.com/historical/> (last visited Sept. 25, 2015).

28. *Whitney v. Carter*, 29 F. Cas. 1070 (C.C.D. Ga. 1810).

29. U.S. Patent No. X72 (issued Mar. 14, 1794).

30. *See Whitney*, 29 F. Cas. at 1071–72.

31. U.S. Patent No. 132 (issued Feb. 25, 1837).

32. *Id.* at 2.

O'Reilly v. Morse ³⁵	Morse Code	System of symbols is abstract; it can be written down. Nothing inventive about tapping them.	Business method, explicitly upheld by the court. ³⁶
Edison Elec. Light Co. v. United States Elec. Lighting Co. ³⁷	Light bulb ³⁸	Natural principle of high resistance was discovered, and claim adds nothing to that principle.	Both patent specification and court acknowledged that entire bulb was in prior art except for principle of high resistance. ³⁹
Telephone Cases ⁴⁰	Method of communicating via closed circuit	Once you know the closed circuit discovery (which is both natural and abstract), non-inventive to apply it.	Functional claim not limited to any particular hardware, and Bell never made it work prior to filing. ⁴¹
Wright Co. v. Paulhan ⁴²	Wing warping	The rest was in the prior art – simple to implement once you know the discovery.	Infringed by a human doing it manually. ⁴³

33. To be fair, this particular invention likely took some work. Dylan Tweney, *Feb. 25, 1837: Davenport Electric Motor Gets Plugged In*, WIRED (Feb. 25, 2010), <http://www.wired.com/2010/02/0225davenport-electric-motor-patent/>. But that's the point of the abstraction problem: if the discovery is assumed to be after all the work needed to discover it, then the rest is simple.

34. Martin Doppelbauer, *The Invention of the Electric Motor 1800–1854*, ELEKTROTECHNISCHES INSTITUT, <http://www.eti.kit.edu/english/1376.php> (last updated Sept. 25, 2014) (“Often the inventors knew nothing about each other and developed similar solutions independently. National histories are shaped accordingly until present day.”).

35. *O'Reilly v. Morse*, 56 U.S. 62, 101, 124 (1853) (Affirming sign system from challenge: “Neither is the substitution of marks and signs, differing from those invented by Professor Morse, any defence to this action.”).

36. *Id.* at 124.

37. *Edison Elec. Light Co. v. United States Elec. Lighting Co.*, 52 F. 300 (2d Cir. 1892), *decision modified sub nom.* *Edison Elec. Light Co. v. Sawyer-Man Elec. Co.*, 53 F. 592 (2d Cir. 1892).

38. U.S. Patent No. 223,898 (issued Jan 27, 1880).

39. *See* *Edison Elec. Light Co.*, 52 F. at 302–03, 310.

40. *Tel. Cases*, 126 U.S. 1 (1888).

41. *Id.* at 535.

42. *Wright Co. v. Paulhan*, 177 F. 261 (C.C.S.D.N.Y. 1910), *rev'd*, *Wright Co v. Paulhan*, 180 F. 112 (2d Cir. 1910).

43. *Id.* at 265–66.

Mackay Radio & Tel. Co. v. Radio Corp. of Am. ⁴⁴	Antenna based on formula	Antenna based on formula—and no more.	Court held patentable. ⁴⁵
Diamond v. Diehr ⁴⁶	Adjusting synthetic rubber cure time according to formula	Once you know the formula, the rest is in prior art and easy to set up.	Court explicitly rejected subject matter challenge. ⁴⁷

Practically speaking, the above patents are all level of abstraction concerns.⁴⁸ Every invention will look like an abstract idea or natural phenomenon at some level. With the right definition, everything is non-inventive: just implement the novel idea once you discover it.

Thus, perhaps the list above seems unreasonable. Perhaps it is simplifying the patents to forward a rhetorical argument. But that's the entire point. Every patentable subject matter decision simplifies and caricatures the invention in some way; once that caricature is known, everything looks non-inventive because people are smart.⁴⁹ In many modern inventions, the discovery is the hard part. But, the direction of patentable subject matter risks limiting patents to only those patents where the “a-ha!” moment occurs just as the final physical piece is connected.

But even under a less aggressive reading of current cases, it is hard to see how the simple antenna of *Mackay* radio⁵⁰ or even the very heat receptacle touted in *Neilson* would survive today. Professor Lefstin's article reminds us that we should not lose sight of history when we make new law. This brief essay is intended to show that by doing so, we apply a standard so vague that it would invalidate patents throughout history and, by extension, many otherwise meritorious patents today.

44. *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86 (1939).

45. *Id.* at 434.

46. *Diamond v. Diehr*, 450 U.S. 175 (1981).

47. *Id.* at 191–92.

48. See Tun-Jen Chiang, *The Rules and Standards of Patentable Subject Matter*, 2010 WIS. L. REV. 1353, 1369–71 (2010).

49. Risch, *Forward to the Past*, *supra* note 13, at 345–46 (predicting that the inventive application test will be over-used: “although the test is supposedly bright-line, renewed emphasis on ‘insignificant post-solution activity’ makes the patentability determination indefinite—any computer software could be invalidated if the computer were considered ‘insignificant.’”).

50. *Id.* at 346 (“[T]here is no principled way to separate the antenna from the formula under the insignificant post-solution activity rule. One could easily argue that the antenna was simply an insignificant ‘post-solution’ part of the claim because the ‘real’ solution was the mathematical formula, which is a process.”).