

Eric E. Bensen on
Patent Eligibility of Software Claims
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The patent eligibility of “software” (or computer implemented) inventions continues to challenge courts in large part because of the difficulty that lies in concretely defining a patent eligible “process” and a patent ineligible “abstract idea.” However, often overlooked are a series of mid-19th century decisions from the Supreme Court holding that the *result* of a process is not eligible for patent protection. Those decisions could go a long way towards bringing consistency to software patent eligibility decisions.

Introduction

To ask whether a claimed invention is “eligible” for patent protection is to ask whether the invention is within one of the four categories of patent eligible subject matter enumerated in section § 101 of the Patent Act: processes, compositions of matter, manufactures and machines. [35 U.S.C. § 101](#). Where a patent is drawn to software (or, a “computer implemented invention”), the question is typically, if not universally, whether the claimed invention is a “process.” Unfortunately, processes pose some of the most challenging questions of eligibility because of the difficulty in defining “process.” In fact, courts typically evaluate the eligibility of a claimed process by asking whether the “process” is *ineligible* as falling into one of the commonly enumerated categories of ineligible matter, most notably, “abstract ideas.” And there’s the rub: “abstract idea” can be as difficult to define as “process.”

As it turns out, a long-recognized category of abstract ideas—one that goes back to a time when computers were not even part of the popular imagination—provides a far more concrete standard for determining the eligibility of software patents. As will be explained, drawing on the principle that a claim drawn to the *result* of a process (including the function of a machine) is not patent eligible, courts can readily determine the eligibility of a software claim by asking whether the claim is drawn to a process, or merely to the result of a process.

The Ineligibility of Results

An early lower court decision provides a particularly good illustration of the rule that a claim drawn to the result of a process is ineligible. The claim at issue provided: “It is claimed, as new, to cut ice of a uniform size, by means of an apparatus worked by any other power than human. The invention of this art, as well as the particular method of the application of the principle, are claimed by the subscriber.”¹ The court concluded that the claim was not patent eligible:

“It is plain, then, that here the patentee claims an exclusive title to the art of cutting ice by means of any power, other than human power. Such a claim is utterly

¹ Wyeth v. Stone, [30 F. Cas. 723, 727](#) (C.C.D. Mass. 1840).

unmaintainable in point of law. It is a claim for an art or principle in the abstract, and not for any particular method or machinery, by which ice is to be cut. No man can have a right to cut ice by all means or methods, or by all or any sort of apparatus, although he is not the inventor of any or all of such means, methods, or apparatus. A claim broader than the actual invention of the patentee is, for that very reason, upon the principles of the common law, utterly void, and the patent is a nullity.”²

That holding was later adopted and expanded upon by the Supreme Court. In an early decision, *Le Roy v. Tatham*, the Court held that patent eligible inventions do not include either the result of a process³ nor a new purpose for an old machine.⁴ Later, the Court, in an effort to distinguish patent eligible from patent ineligible “processes,” explained in *Corning v. Burden* that when it is said that “a board is undergoing the process of being planed, grain of being ground, iron of being hammered, or rolled,” the term “process” represents “the function of a machine, or the effect produced by it on the material subjected to the action of the machine[, b]ut it is well settled that a man cannot have a patent for the function or abstract effect of a machine, but only for the machine which produces it.”⁵

Still later, in *Risdon Iron & Locomotive Works v. Medart*, the Court addressed a claim concerning the manufacture of belt pulleys of an improved quality.⁶ It held the claim was ineligible because, in substance, it was drawn to nothing more than the adaption of existing machinery to produce the desired result.⁷ As the Court explained, “[i]t is equally clear ... that a valid patent cannot be obtained for a process which involves nothing more than the operation of a piece of mechanism, or, in other words, for the function of a machine.”⁸ Subsequently, in *Expanded Metal Co. v. Bradford*, the Court observed that “[i]t is undoubtedly true, and all the cases agree, that the mere function or effect of the operation of a machine cannot be the subject-matter of a lawful patent.”⁹

The rationales for excluding mere results including the functions of machines from patent eligibility were aptly set forth in *O'Reilly v. Morse*,¹⁰ one of the most noted of the Court’s nineteenth century eligibility decisions. The claim at issue was drawn to the use of the “motive power of the electric ... current,” to print intelligible characters, signs or letters at a distance, but expressly provided that it was not limited to any specific machinery or mechanism.¹¹ In holding that the claimed invention was not patent eligible, the Court identified two policy concerns. The first was that the claim

² 30 F. Cas. at 727.

³ 55 U.S. 156, 175 (1853).

⁴ 55 U.S. at 177.

⁵ 56 U.S. 252, 268 (1854).

⁶ 158 U.S. 68 (1895).

⁷ 158 U.S. at 77.

⁸ 158 U.S. at 77.

⁹ 214 U.S. 366, 283 (1909).

¹⁰ 56 U.S. at 112.

¹¹ 56 U.S. at 112 (“I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims; the essence of my invention being 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, being a new application of that power of which I claim to be the first inventor or discoverer.” (quoting the patent’s eighth claim)).

“shut[] the door” to inventions by others that would constitute improved modes of using the motive power of electric to print at a distance.¹² That is, were the claim given effect, other inventions used to apply the motive power of electricity to print at a distance would infringe the patent even though those inventions were not disclosed in the patent.¹³ That possibility ran counter to the fundamental rule that anyone may lawfully accomplish the same end as that achieved by a patented invention as long as that end is achieved by substantially different means.¹⁴ The second concern was that were the patent given effect, the patentee would have no incentive to disclose the new inventions that he might develop to achieve the same end.¹⁵ That is, because the patent would give the patentee the right to exclude others from using *any* means to achieve the specified result, there would be no need for the patentee to seek a patent on any means that he might develop.¹⁶ This, too, was contrary to patent law.¹⁷

Mayo & Alice

As things stand today, the Supreme Court’s test for eligibility is set forth in *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*¹⁸ (“*Mayo*”) and *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*¹⁹ (“*Alice*”). Essentially, those decisions establish that a “claim directed to (i) an abstract idea or a mere discovery (i.e., a natural law, product of nature or natural phenomenon) and (ii) familiar elements having the same functions that they are known to perform that (iii) does no more than yield predictable results, is ineligible for patent protection.”²⁰

The Court’s test has been met with frequent criticism, but it is correct. In fact, it flows naturally from the question presented. Think of it this way. A claim drawn solely to ineligible matter would be ineligible. But that self-evident. A claim drawn solely to eligible matter in the sense that no limitation is drawn to ineligible matter, is patent eligible. That, too, is self-evident. Where it gets more complicated is where a claim contains both limitations that, viewed in isolation, are drawn to eligible matter and others limitations that, viewed in isolation, are drawn to ineligible matter. However, it is settled that a claim with limitations drawn to both eligible and ineligible matter is not *necessarily* ineligible.²¹ So, what question is left? It is this: when is a claim with both limitations drawn to eligible matter and limitations drawn to ineligible matter *eligible*? It should be plain that the mere recitation of eligible matter in a claim cannot be dispositive. After all, how hard is it to claim, e.g., an abstract idea carried out on a computer? Thus, to avoid improperly giving the “draftsman’s art” dispositive effect,²² the answer must be that if a claim is *in substance* drawn to

¹² [56 U.S. at 113](#).

¹³ 56 U.S. at 113.

¹⁴ [56 U.S. at 119](#); see also *Le Roy*, [55 U.S. at 175](#) (“A patent is not good for an effect, or the result of a certain process, as that would prohibit all other persons from making the same thing by any means whatsoever. This, by creating monopolies, would discourage arts and manufactures, against the avowed policy of the patent laws.”).

¹⁵ [56 U.S. at 113](#).

¹⁶ 56 U.S. at 113.

¹⁷ 56 U.S. at 113.

¹⁸ [566 U.S. 66](#) (2012).

¹⁹ [134 S. Ct. 2347](#) (2014).

²⁰ 1 Eric E. Bensen, *Patent Law Perspectives* § 1.01[1][a] (Matthew Bender) (discussing *Mayo Collaborative Servs.*, [566 U.S. at 79-80](#), and *Alice Corp. Pty. Ltd.*, [134 S. Ct. at 2355](#)).

²¹ *Diamond v. Diehr*, [450 U.S. 175, 188](#) (1981).

²² E.g., *Mayo Collaborative Servs.*, [566 U.S. at 72](#).

ineligible subject matter when viewed as a whole, it is ineligible regardless of its inclusion of limitations drawn to eligible matter. That is the substance of what the Court said in *Mayo* and *Alice*.

There is no conflict between the *Mayo/Alice* approach to eligibility and the Court's precedent regarding the ineligibility of results: if a claim is in substance drawn to a result, it is ineligible for patent protection notwithstanding its inclusion of limitations drawn to what in isolation would be viewed as eligible subject matter.

The Federal Circuit's Software Eligibility Decisions

Post-*Alice*, the Federal Circuit seemingly struggled to adhere to a consistent approach for determining the eligibility of software patents. The following groups of claims, each of which reached the Federal Circuit in the years following *Alice*, will serve as illustrative examples.

1. *Eligible*: claims drawn to systems and methods respecting the generation of a composite webpage that included the content of a third-party merchant, but retained the "look and feel" of the host web site.²³
2. *Eligible*: claims drawn to a "self-referential" database, i.e., a database in which each type of entry is identified in a single table and the cross-references used to identify relationships between the entries are provided in a single column in that table.²⁴
3. *Ineligible*: claims drawn to maintaining information entered in one online application as the user navigates to other online applications.²⁵
4. *Ineligible*: claims drawn to a method and system for taking, transmitting and organizing digital images based on classification data such as date or time stamps.²⁶
5. *Ineligible*: claims drawn to "systems and methods for performing real-time performance monitoring of an electric power grid by collecting data from multiple data sources, analyzing the data, and displaying the results."²⁷

Each claim in the first group was held to be eligible because rather than reciting the execution of a long-standing commercial practice on the Internet, it recited a solution for a problem that arose only in the context of the Internet.²⁸ However, the same could have been said about the claims in the third group and, at least arguably, the claims in the fourth and fifth groups. Each claim in the second group was held to be eligible on the ground that it improved the function of a computer.²⁹ However, the same could have been said for each claim in the last three groups. Each claim in the last three groups, on the other hand, was held to be ineligible because it was in substance drawn to

²³ *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1248–1249 (Fed. Cir. 2014).

²⁴ *Enfish, LLC v. Microsoft Corp.*, [822 F.3d 1327, 1330-1331](#) (Fed. Cir. 2016).

²⁵ *Internet Patents Corp. v. Active Network, Inc.*, [790 F.3d 1343, 1344](#) (Fed. Cir. 2015).

²⁶ *TLI Communs. LLC v. AV Auto., L.L.C. (In re TLI Communs. LLC Patent Litig.)*, [823 F.3d 607, 613](#) (Fed. Cir. 2016).

²⁷ *Elec. Power Group, LLC v. Alstom S.A.*, [830 F.3d 1350, 1356](#) (Fed. Cir. 2016).

²⁸ *DDR Holdings, LLC*, 773 F.3d at 1248–1249.

²⁹ *Enfish, LLC*, [822 F.3d at 1336](#).

a result rather than a means for achieving the result.³⁰ The same could have been said for each claim in the first two groups.

It is worth noting that in the three examples where the Federal Circuit asked whether the claims at issue were drawn to a result rather than a means of achieving a result, the court rejected the claims on eligibility grounds. On the other hand, in the two examples where the Federal Circuit concluded that the claims at issue were eligible, it relied on principles—in the first, that the claimed invention addressed a problem unique to the Internet and, in the second, that the claimed invention improved a computer's functionality—that have no foundation in Supreme Court jurisprudence.

No doubt the inconsistency in the illustrative examples is in part attributable to the fact that when analyzing the eligibility of software patents, the Federal Circuit, following the Supreme Court's lead,³¹ has asked whether the patent claimed an "abstract idea."³² As discussed above, the notion of an "abstract idea" does not provide concrete guidance in this area. Had the Federal Circuit applied the principle that a claim drawn to the result of a process is excluded from eligibility in the first two examples, those claims would have almost certainly also been held to be ineligible. That is, consistent application of the principle that claims drawn to results are ineligible would have led to consistent results.

The question remains, however, whether that is the right rule for determining the eligibility of software patents.

Software Patents and the Exclusion of Results

Whether the exclusion from eligibility for results of processes provides proper guidance for determining the eligibility of a software patent can be determined by looking to the reasons for the exclusion. As discussed above, the first is that a claim drawn to a result "shuts the door" to inventions by others that would constitute an improved means of achieving that result.³³ That would run contrary to sound patent policy, which is intended to avoid discouraging innovation by others.³⁴ The second is that because the patentee would have the right to exclude others from using any means to achieve the specified result, the patentee would have no incentive to seek a patent on any means that it might develop to achieve the result.³⁵ That, too, would run contrary to sound patent policy, which is intended to encourage the disclosure of advances.³⁶

³⁰ *Group 3: Internet Patents Corp.*, [790 F.3d at 1344](#) (claims held to be ineligible because they were drawn to the goal of maintaining entered information rather than a means for doing so).

Group 4: TLI Communs. LLC, [823 F.3d at 613](#) (claims held to be ineligible because they were directed to the abstract idea of classifying and storing digital images in an organized manner).

Group 5: Elec. Power Group, LLC, [830 F.3d at 1356](#) (claims held to be ineligible because they were in substance drawn to effectively monitoring multiple sources on a power grid rather than a specific way of enabling such monitoring and, thus, drawn to a result rather than a means of achieving the result).

³¹ *Alice Corp. Pty. Ltd.*, 134 S. Ct. at 2358.

³² *Elec. Power Group*, [830 F.3d at 1353](#); *Enfish, LLC*, [822 F.3d at 1334](#); *TLI Communs. LLC*, [823 F.3d at 611-615](#); *Internet Patents Corp.*, [790 F.3d at 1345-1346](#); *DDR Holdings, LLC*, [773 F.3d at 1256](#).

³³ *O'Reilly*, [56 U.S. at 113](#).

³⁴ *Le Roy*, [55 U.S. at 175](#).

³⁵ *O'Reilly*, [56 U.S. at 113](#).

³⁶ *O'Reilly*, [56 U.S. at 113](#).

Those concerns are plainly present in software patents. In none of the illustrative examples provided above did the patentee actually claim a particular means of achieving the result to which the claims were drawn. That is, the patentees left to third parties the innovative work of developing the necessary software code. However, because the execution of such code would infringe the patent, third parties who were aware of the patent would have a substantially diminished incentive to engage in such innovation. Moreover, since any code used to achieve the patented result would infringe the patent, the patentee would have little incentive to create its own means for achieving the claimed result: all it would have to do is sit back and collect royalties on the work of others.

Accordingly, applying the rule excluding results from eligibility to each claim in the illustrative examples would have comported with longstanding Supreme Court precedent and sound patent policy.

Software is not categorically excluded from eligibility, but ...

As a threshold matter, if one views software as a means of manipulating electronic signals, then a claim drawn to software should—if not barred from eligibility by other rules—be patent eligible under the teaching of the *Telephone Cases*, where the Court held that Alexander Graham Bell's claim drawn to the use of electricity to transmit sounds was eligible because electricity, which was not suitable for the purpose in its natural state, had to be manipulated to achieve that end.³⁷ Accordingly, a software claim that in substance claims a *means* for achieving a result rather than the result itself would seem to be eligible for patent protection.

That said, truly patent eligible software claims may be more a matter of theory than practice. The inventor of a patent-eligible software process would have several options for intellectual property protection. The inventor could obtain protection against copying *and* independent development of the process by obtaining a patent. However, that protection would be for a limited time and, as a practical matter, it would likely be difficult to enforce the patent because it is often difficult to detect infringement of a process. On the other hand, to the extent the inventor could keep the software confidential, which is typically the case for source code and sometimes the case with object code, the inventor could protect the software process indefinitely both by way of actual secrecy and potentially under trade secret law.³⁸ Additionally, in the case of confidential software, and alternatively, in the case of disclosed software, the individual could obtain protection for a far greater period of time than that provided by patent law by relying on copyright protection.³⁹ Simply put, of the various forms of intellectual property protection, patent law may be least well suited for the protection of software.

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³⁷ [126 U.S. 1, 531](#) (1888).

³⁸ Roger M. Milgrim & Eric E. Bensen, *Milgrim on Trade Secrets* § 1.09[5][b] (Matthew Bender).

³⁹ The term of the protection offered by copyright is determined by reference to a complex set of factors, but, for example, a copyright generally expires 70 years after the death of the author. Melville B. Nimmer & David Nimmer, *Nimmer on Copyright* § 9.11 (Matthew Bender).

Note: As of the publication of this Analysis, the Federal Circuit continued to be divided on the proper standard for determining the eligibility of software patents. *Compare, e.g., Intellectual Ventures I LLC v. Erie Indem. Co.*, [850 F.3d 1315, 1331-1332](#) (Fed. Cir. 2017) (claim drawn to a mobile interface for a user's device that could access the users data stored on the users other devices claimed only the result or abstract idea of accessing such data, not a means of doing so and, thus, was not patent eligible), *with Visual Memory LLC v. NVIDIA Corp.*, [2017 U.S. App. LEXIS 15187, **11, 18-19](#) (Fed. Cir. 2017) (claim drawn to a computer memory system with programmable operational characteristics was patent eligible because it was drawn to an improvement to a computer system even though the claim was not limited to any particular means for achieving that improvement).

For comprehensive coverage of patent eligibility issues, see 1 Eric E. Bensen, *Patent Law Perspectives*, ch. 1 (Matthew Bender).

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