

No. 10-1150

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IN THE  
*Supreme Court of the United States*

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MAYO COLLABORATIVE SERVICES (D/B/A MAYO  
MEDICAL LABORATORIES) AND MAYO CLINIC  
ROCHESTER,

*Petitioners,*

v.

PROMETHEUS LABORATORIES, INC.,

*Respondent.*

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**On Writ Of Certiorari  
To The United States Court Of Appeals  
For The Federal Circuit**

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**BRIEF OF MICROSOFT CORPORATION,  
EMC CORPORATION, AND  
INTEL CORPORATION AS *AMICI CURIAE*  
IN SUPPORT OF NEITHER PARTY**

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MATTHEW D. MCGILL

*Counsel of Record*

WILLIAM G. JENKS

GIBSON, DUNN & CRUTCHER LLP

1050 Connecticut Avenue, N.W.

Washington, D.C. 20036

(202) 955-8500

mmcgill@gibsondunn.com

*Counsel for Amici Curiae*

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**BRIEF OF MICROSOFT CORPORATION,  
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IN SUPPORT OF NEITHER PARTY**

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**INTEREST OF *AMICI CURIAE*<sup>1</sup>**

This case presents the question whether the diagnostic method claimed by respondent is eligible for patenting. More broadly, this case brings to the Court for the second time in three years—and the third time in six years—the question of when a process is eligible for patenting under Section 101 of the Patent Act.

*Amici curiae* have a substantial interest in the correct resolution of that issue. *Amici* are among the leading companies in their respective fields. *Amici* own, collectively, tens of thousands of patents, which they rely upon to protect their substantial investments in research and development. They are among the most innovative companies in America. But they also frequently are accused of infringing all manner of patents. *Amici* thus can offer a uniquely balanced viewpoint on questions surrounding patent eligibility under Section 101.

*Amici curiae* believe that rigid and technology-specific standards for patent eligibility, such as the

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<sup>1</sup> Pursuant to this Court’s Rule 37.3(a), letters of consent from all parties to the filing of this brief have been submitted to the Clerk. Pursuant to this Court’s Rule 37.6, *amici* state that this brief was not authored in whole or in part by counsel for any party, and that no person or entity other than *amici* or their counsel made a monetary contribution intended to fund the preparation or submission of this brief.

“machine-or-transformation test” adopted by the Federal Circuit in *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc) and addressed by this Court in *Bilski v. Kappos*, 130 S. Ct. 3218 (2010), hamper innovation by sharply limiting the availability of patents for emerging technologies. Yet *amici* also believe that the malleability and indeterminacy of post-*Bilski* administrative policy and judicial case law hamper innovation for new and old technologies alike. *Amici* experience first-hand—both in the patent application process and in patent litigation—the difficulty of assessing patent eligibility under Section 101 and suffer the costs of that uncertainty.

*Amici* urge this Court to confirm the broad sweep of inventions eligible for patenting by returning to its early case law and reaffirm the basic standard for patent eligibility that focuses on the use of certain means to create a useful practical result in the physical world. That historical standard is neither technology-specific, nor indeterminate; it respects Congress’s broad statutory language in Section 101; it is consistent with the “abstractness” standard articulated in *Bilski*; it does not usurp the role Congress assigned to Sections 102, 103, and 112 of the Patent Act; and it is sufficient to prevent an inventor from claiming a law of nature, natural phenomena, or abstract idea by limiting claims to what the inventor has actually invented and rendered of use to the world.<sup>2</sup>

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<sup>2</sup> *Amici* take no position on the patentability of the particular claims at issue here. *Amici*’s expertise includes the invention of new computer-implemented processes, which are patent eligible when properly claimed. See 35 U.S.C. § 100(b) (“The term process . . . includes a new use of a known . . . machine.”).

## SUMMARY OF ARGUMENT

Section 101 of the Patent Act polices patent eligibility and nothing more. The statute is crafted broadly to allow the inventor of any “new and useful process, machine, manufacture, or composition of matter” to seek a patent therefor and ultimately to “obtain a patent therefor” if the invention satisfies “the conditions and requirements” of the entire Patent Act. Unfortunately, as the case law and administrative practice have developed, Section 101 has been set to other tasks—tasks Congress assigned to other sections of the Patent Act. As a result, the property rights inherent in many patents—particularly patents that claim processes—have been unsettled—a state of affairs *amici* believe this Court can readily correct by reference to the text of the Patent Act and this Court’s early patent-eligibility decisions.

I. Congress set forth the patent eligibility of inventions in broad terms. Combining the statutory definition of process under Section 100(b) with Section 101 shows that “any process, art, or method” including the “new use of a known process” is patent eligible. The scope of this congressional decree ensures that patents are broadly available for diverse inventions in all fields of technology—even those fields as yet unknown.

The Court has recognized only appropriate limits on that scope. While one may patent a process, a principle—*i.e.*, a law of nature, natural phenomena, or abstract idea—remains free for all to use. But recent efforts by lower courts and the PTO to locate the boundary separating patent-eligible processes from abstract ideas have been unsuccessful.

II. In analyzing the eligibility of an invention for a patent, courts and the PTO today feel empowered to parse the claimed invention into the “underlying invention” and those aspects that are “conventional” or “obvious” or insignificant “extra- or post-solution activity.” The recited elements identified as “conventional” or “extra-solution activity” are then disregarded, and the “underlying invention” alone is analyzed to determine whether it is a statutory process or merely an abstract idea. This approach has no statutory basis and—due to its subjective nature—neither the lower courts nor the PTO has been able to articulate a principle that allows one to determine consistently what portions of a particular claim may be disregarded under Section 101.

Too often, courts and the PTO make a subjective judgment, labeling portions of a claim “extra-solution” or “conventional” on the basis of individual judgments regarding that portions relative significance to the “underlying invention.” The subjective nature of these judgments allows the decision maker to consider what parts of a claim may support the claim’s *patentability* under the Patent Act. But *amici* believe that such analysis is inappropriate for the threshold inquiry—whether the subject matter of the claim as a whole is *eligible* for patenting under Section 101.

III. *Amici* urge a return to the historical standards of patent eligibility developed in this Court’s decisions in *O’Reilly v. Morse*, 56 U.S. (15 How.) 62 (1853), *The Telephone Cases*, 126 U.S. 1 (1888), and *Tilghman v. Proctor*, 102 U.S. 707 (1881). These decisions—which themselves established the non-statutory exceptions to patent eligibility invoked by petitioners here—instruct courts to look to the claim

as a whole and determine whether the invention claims the use of *certain means* to produce a *certain useful result*. Under this standard, to be eligible for patenting, a claimed process invention includes both the means and the result, *i.e.*, one or more disclosed physical things used to produce a practical result or effect in the physical world. But that is all that is required to establish its patent eligibility. A return to this standard would, *amici* believe, result in better, more objective decisions by the lower courts and the PTO with respect to patent *eligibility* and assign other assertions of patent *invalidity* (such as the lack of novelty of which petitioners complain) for analysis under the provisions designated by Congress in the Patent Act: 35 U.S.C. §§ 102, 103, and 112. And it would ensure that the technologies of tomorrow, no less than the technologies of today, will have access to our patent system and the investments in innovation that system so effectively promotes.

## ARGUMENT

### I. SECTION 101 REFLECTS A CONGRESSIONAL JUDGMENT THAT INNOVATION SHOULD BE ENCOURAGED ACROSS TECHNOLOGIES KNOWN AND UNKNOWN.

[T]he very first official thing I did, in my administration—and it was on the very first day of it, too—was to start a patent office; for I knew that a country without a patent office and good patent laws was just a crab, and couldn't travel any way but sideways or backwards.

Mark Twain, *A Connecticut Yankee in King Arthur's Court* 64 (Harper & Brothers 1889).

Anticipating Twain by a century, the Founders established the constitutional and statutory bases for patentability and patent eligibility when the Nation was still in its infancy. *See Graham v. John Deere Co.*, 383 U.S. 1, 5-11 (1966).

Article I of the Constitution empowers Congress “[t]o promote the Progress of Science and useful Arts, by securing . . . to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” U.S. Const. art. I, § 8, cl. 8. The first Congress exercised this authority by enacting the Patent Act of 1790. That Act provided “[t]hat upon the petition of any person or persons . . . setting forth, that he, she, or they, hath or have invented or discovered any useful art, manufacture, engine, machine or device, or any improvement therein,” a patent could be granted to “such petitioner or petitioners.” Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 109, 109-10.

The law today remains substantially the same: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor.” 35 U.S.C. § 101.

This language is broad and encompassing; this Court has said it embraces “anything under the sun that is made by man.” *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. Rep. No. 82-1979, at 5 (1952)). Incorporating the definition of “process” provided in 35 U.S.C. § 100(b), it states that “any process, art, or method” is eligible for a patent so long as it is “new and useful.” *Id.* §§ 100(b), 101 (emphasis added). This Court has long recognized that, by using such expansive language in Section 101, including “the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be

given wide scope.” *Bilski v. Kappos*, 130 S. Ct. 3218, 3225 (2010) (quoting *Chakrabarty*, 447 U.S. at 308). That “wide scope” ensures that patents are broadly available for diverse inventions in all fields of technology—even those fields as yet unknown that will drive progress for future generations. *See ibid.* (“Congress took this permissive approach to patent eligibility to ensure that ‘ingenuity should receive a liberal encouragement.’”) (quoting *Chakrabarty*, 447 U.S. at 308-09, in turn quoting 5 Writings of Thomas Jefferson 75-76 (Washington ed. 1871)).

But this Court has long and no less certainly held that the language of Section 101 is not so broad as to allow one to patent “laws of nature, natural phenomena, and abstract ideas.” *Diamond v. Diehr*, 450 U.S. 175, 185 (1981). Recent judicial efforts to locate the boundary separating patent-eligible processes from abstract ideas have been unsatisfying as reflected in the fact that this Court has once again taken up the question. Indeed, commentators have observed that it has proven to be “one of the most confounding and potentially critical areas of patent law.” Peter S. Menell, *Forty Years of Wondering in the Wilderness and No Closer to the Promised Land: Bilski’s Superficial Textualism and the Missed Opportunity to Return Patent Law to Its Technology Mooring*, 63 *Stan. L. Rev.* 1289, 1290 (2011).

## **II. THE EXTRA-SOLUTION ACTIVITY ANALYSIS NOW EMPLOYED BY COURTS AND THE PTO IS SUBJECTIVE AND THEREFORE INDETERMINATE.**

A. Last year, this Court reviewed *In re Bilski*, the Federal Circuit’s attempt to create a universal standard for reviewing the eligibility of process and method claims under Section 101. 545 F.3d 943, 956-

58 (Fed. Cir. 2008) (en banc). While this Court affirmed the Federal Circuit’s holding that Bilski’s claimed invention was too abstract to be eligible for patenting, this Court also made clear that the Federal Circuit incorrectly treated the machine-or-transformation test as the sole test for statutory eligibility. *Bilski v. Kappos*, 130 S. Ct. at 3226. Instead, the “test” was, at most, “just an important and useful clue” as to whether the claimed invention was within the scope of statutory subject matter defined by Section 101. *Ibid.*

But, in truth, no lower court had treated the machine-or-transformation test as the *sole* determinant of patent eligibility. The courts and the PTO, following language in earlier court decisions, have recognized a “corollary to the machine-or-transformation test” that excludes from the eligibility analysis any claim element that the decision maker considers to be “extra-solution activity.” *In re Bilski*, 545 F.3d at 957 & n.14; *see also* Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of *Bilski v. Kappos*, 75 Fed. Reg. 43922, 43925 (July 27, 2010). Under that standard, “even if a claim recites a specific machine or a particular transformation of a specific article, the recited machine or transformation must not constitute mere ‘insignificant postsolution activity’” lest the claim be rendered ineligible. *In re Bilski*, 545 F.3d at 957. And this “corollary” has been broadly applied by the lower courts and the PTO and not limited merely to *post*-solution activity; it applies with equal force to “a pre-solution step,” a “step in the middle of the claimed process,” and “postsolution activity”—any claim elements the courts or the PTO determined to be “insignificant.” *Id.* at 957 & n.14 (internal quotation marks omitted).

The Federal Circuit has found that this extra-resolution-activity corollary encompasses claim elements that amount, in its judgment, only to “mere” data gathering. See *In re Bilski*, 545 F.3d at 963 (“This court and our predecessor court have frequently stated that adding a data-gathering step to an algorithm is insufficient to convert that algorithm into a patent-eligible process.”). And, indeed, the district court below, prior to either *Bilski* decision, found the claims here ineligible under this carve-out for “merely data-gathering.” *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, No. 04cv1200, 2008 WL 878910, at \*6 (S.D. Cal. Mar. 28, 2008).

But the Federal Circuit, reviewing this case after a remand from this Court in light of *Bilski v. Kappos*, disagreed. It found that the steps that the district court identified as mere data gathering instead implicated transformations of matter that were “central to the claims rather than merely insignificant extra-resolution activity.” Pet. App. 19a. Prometheus’s claim therefore satisfied the machine-or-transformation test, which, the court of appeals concluded, “le[d] to a clear and compelling conclusion” that Prometheus’s process was eligible for patenting. *Id.* at 14a.

The Federal Circuit’s most recent Section 101 decisions similarly turn on an analysis of the significance of physical elements to the claimed invention. Its recent decision in *CyberSource Corp. v. Retail Decisions, Inc.*, No. 2009-1358 (Fed. Cir. Aug. 16, 2011), put it in very stark terms: “Regardless of what statutory category (‘process, machine, manufacture, or composition of matter,’ 35 U.S.C. § 101) a claim’s language is crafted to literally invoke, we look to the

*underlying invention* for patent-eligibility purposes.” *CyberSource*, slip op. at 17 (emphasis added).

The claim in *CyberSource* recited “a computer readable medium,” which the court recognized meant “a disk, hard drive, or other data storage device.” *CyberSource*, slip op. at 14. But the court held that these objects were not sufficiently integral to the “underlying invention” to confer eligibility; the “underlying invention,” the Federal Circuit held, included only the “algorithm” stored on the device. *Id.* at 17-18. That algorithm, standing alone, the court ruled, was not a “machine,” “manufacture,” or “process” eligible for patenting. *Id.* at 16-17. So while blank disks, empty hard drives, and other storage devices all indisputably are machines or manufactures *eligible* for patent protection—claims to such inventions, of course, might be invalid for other reasons such as lack of novelty or obviousness—the court concluded that the addition of software instructions to the physical media may fundamentally compromise that eligibility.<sup>3</sup>

*CyberSource* also relied on the doctrine that a claim including elements “drawn to a mental pro-

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<sup>3</sup> Notably, the Federal Circuit sometimes has taken the precisely opposite approach after *Bilski v. Kappos*, reading physical elements *into* a method claim in order to hold it eligible for patenting. For example, in *Research Corp. Techs, Inc. v. Microsoft Corp.*, 627 F.3d 859 (Fed. Cir. 2010), the Federal Circuit ruled that claim 1 to a “method for the halftoning of gray scale images” that recited using a “comparison” of the image to a “mask . . . comprised of a random non-deterministic, non-white noise single valued function” was patent eligible because it concluded that the claimed method incorporated physical elements such as a “printer” and “a memory” that were recited in other claims. *Id.* at 865, 869.

cess” is ineligible. *CyberSource*, slip op. at 16. As do petitioners. Pet. Br. 19, 27. *Amici* do not disagree, that if *every* step of a process claim can be performed in the human mind, that process is unpatentable. But the *CyberSource* court extended that principle to apply to machines or manufactures that replicate mental steps—an untenable extension. *See generally Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) (finding claims that incorporated a mathematical formula readily calculable by the mind as patent eligible). For example, a new computer-implemented process may cause a machine to replicate steps, which could be performed—typically more slowly—in the human mind. But the use of that machine is statutorily eligible. *See* 35 U.S.C. § 100(b) (“The term ‘process’ . . . includes a new use of a known . . . machine.”). And petitioners seek an expansive application of the mental steps doctrine, such that claims that “culminate” with a “mental step” are ineligible. Pet. Br. 19.

B. This mode of analysis requiring judges and patent examiners to parse the significance of claim elements in order to locate the “underlying invention” encourages them to disregard tangible elements explicitly recited in the claims in order to find the claims “abstract” and has little to commend it. It has no connection to the text of Section 101; is irreconcilable with this Court’s admonition that “there is no legally recognizable or protected ‘essential’ element, ‘gist’ or ‘heart’ of the invention in a combination patent,” *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 345 (1961); and is utterly indeterminate, as the litigation of this case amply demonstrates. Whether an invention is eligible for a patent should not be made to depend upon the views of a judge, who likely has little expertise in the field of

use, as to whether recited physical elements are central or insignificant.

Yet, petitioners here argue that this indeterminacy on a question as basic as whether an invention is *eligible* for a patent is compelled by this Court's precedents—particularly *Parker v. Flook*, 437 U.S. 584 (1978). Pet. Br. 30-31. That contention places more weight on *Flook* than it can bear.

In *Flook*, the claim recited a “method for updating the value of at least one alarm limit on at least one process variable” involved in the “catalytic chemical conversion of hydrocarbons.” 437 U.S. at 596. One step of the claimed method included calculating a “new alarm base” using a mathematical formula. *Id.* at 597. The Court first assumed “that the formula is the only novel feature” of the claimed method. *Id.* at 588. Then, the Court asked whether the discovery of the formula “makes an otherwise conventional method [patent] eligible.” *Ibid.* The patent applicant, Flook, argued that the other steps of the claim, particularly the “post-solution” activity of adjusting the alarm limit, made the process eligible.

This Court disagreed: “The notion that post-solution activity, *no matter how conventional or obvious in itself*, can transform an unpatentable principle into a patentable process exalts form over substance.” *Flook*, 437 U.S. at 590 (emphasis added). The Court thus held that the claimed method was ineligible under Section 101 because once the claimed “algorithm is assumed to be *within the prior art*, the application, considered as a whole, contains no patentable invention.” *Id.* at 594 (emphasis added).

Justice Stewart criticized the *Flook* majority's analysis as confusing patent *eligibility* under Section

101 with patentable *novelty* under Section 102 and patentable *nonobviousness* under Section 103. See *Flook*, 437 U.S. at 600 (Stewart, J., dissenting) (“The Court today . . . strikes . . . [a] damaging blow at basic principles of patent law by importing into its inquiry under 35 U.S.C. § 101 the criteria of novelty and inventiveness.”). That criticism still has currency today. See, e.g., 1 Donald S. Chisum, *Chisum on Patents* § 1.03[6][e] (2010) (“[D]espite the Court’s protestations to the contrary, its analysis of statutory subject matter under Section 101 does in a sense import concepts of novelty and nonobviousness.”).<sup>4</sup>

C. In light of these issues, it is perhaps not surprising that this Court moved to clarify *Flook* shortly thereafter in *Diamond v. Diehr*. In *Diehr*, this Court rejected the government’s argument that *Flook* required a court to parse the claims to determine the novelty of each element *vel non*. 450 U.S. at 189 n.12. Relying on *Cochrane v. Deener*, 94 U.S. 780 (1877) and *Gottschalk v. Benson*, 409 U.S. 63 (1972), the Court held that, in analyzing patent eli-

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<sup>4</sup> Petitioners’ argument similarly seems to speak more in terms of novelty and obviousness than patent eligibility. Petitioners complain that the inventors “freely disclosed” their invention before filing the patents at issue, Pet. Br. 5; and that certain claim steps are “well known and have been used by physicians and researchers for decades,” *id.* at 24, or “obvious,” *id.* at 30 (internal quotation marks omitted). Even if true, these allegations ought to have no bearing upon the question of eligibility for patenting of respondent’s claimed process. Instead, they would bear only upon other defenses of patent invalidity that would remain open to the lower courts on remand should the Court hold one or more of respondent’s claims patent eligible.

gibility, it is “inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements.” *Id.* at 188.

Section 101, the Court observed, was not the only safeguard against inappropriately issued patents. *Diehr*, 450 U.S. at 191. Even if a claimed invention were patent eligible, “it may later be determined that the [claimed invention] is not deserving of patent protection because it fails to satisfy” Sections 102 (novelty) and 103 (nonobviousness). *Ibid.* In addition, an invention cannot be patented if the inventor’s patent fails to satisfy the many requirements of Section 112, including providing “a written description of the invention,” “enabl[ing]” those of skill in the art to make and use the invention, and “particularly pointing out and distinctly claiming” the invention. 35 U.S.C. § 112. Accordingly, novelty “is of no relevance in determining whether the subject matter of the claim falls within the § 101 categories of possibly patentable subject matter.” *Diehr*, 450 U.S. at 188-89. Indeed, “[t]he fact that one or more of the steps in respondents’ process may not, in isolation, be novel or independently eligible for patent protection is irrelevant to the question of whether the claims as a whole recite subject matter *eligible* for patent protection under § 101.” *Id.* at 193 n.15.

To reconcile this reasoning with that of *Flook*, *Diehr* cast *Flook* as a decision that involved only “token” post-solution activity. *Diehr*, 450 U.S. at 192 n.14 (“[A] mathematical formula does not become patentable subject matter merely by including in the claim for the formula token postsolution activity . . .”). Such “insignificant postsolution activity,”

*Diehr* observed, “will not transform an unpatentable principle into a patentable process.” *Id.* at 191-92.<sup>5</sup>

D. From *Diehr*’s reservation regarding the patent eligibility of a claim for which the only connection to the physical world was “token” or “insignificant post-solution activity,” the lower courts and the PTO now draw license to dissect claimed inventions into those portions that are “insignificant” or “extra-solution” and those that truly represent “the underlying invention.” Petitioners rely on the very same reservation, Pet. Br. 30-31, to argue that certain steps in the claims at issue are “data-gathering” steps using “ordinary means” that cannot weigh towards patentability, *id.* at 35.

Yet, this is precisely the type of “dissect[ion]” that *Diehr* found “inappropriate” for an analysis of “whether the claims *as a whole* recite subject matter eligible for patent protection.” *Diehr*, 450 U.S. at 188, 193 n.15 (first emphasis added). And predictably the “insignificance,” or not, of claim elements has proven to be only in the eye of the beholder, as pa-

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<sup>5</sup> Many commentators did not think *Flook* and *Diehr* could be reconciled so easily. See, e.g., James J. Myrick & James A. Sprowl, *Patent Law for Programmed Computers and Programmed Life Forms*, 68 A.B.A. J. 920, 923 (1982) (“*Flook* cannot be reconciled with *Diehr* and *Chakrabarty* on any but superficial grounds. Under *Flook* machines and methods realized by feeding new instructions into universal machines simply cannot be patented.”); Susan J. Marsnik & Robert E. Thomas, *Drawing a Line in the Patent Subject-Matter Sands: Does Europe Provide a Solution to the Software and Business Method Patent Problem?*, 34 B.C. Int’l & Comp. L. Rev. 227, 252 (2011), available at <http://lawdigitalcommons.bc.edu/iclr/vol34/iss2/1> (“It is hard to reconcile the different results in *Flook* and *Diehr* given the strong similarity between the two cases.”).

tent examiners and lower courts routinely reach inconsistent conclusions as to whether claim elements are adequately significant.

This type of indeterminacy hampers innovation. It drives up the cost and length of the patent application process and opens yet another front to be defended in patent litigation. Even more detrimentally, however, the continuing uncertainty over the classes of inventions that are eligible for patenting—and the specter that inventions that have been eligible for patenting for decades suddenly could become ineligible based on a newly minted assessment of “insignificance”—tends to discourage investment in potentially groundbreaking new technologies, which is exactly the “Progress of Science and the useful Arts” Section 101 is supposed to promote. *But see Bilski v. Kappos*, 130 S. Ct. at 3231 (inviting development of “limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text”).

If a proliferation of invalid patents is a problem, the solution is to be found in more robust enforcement of those provisions of the Patent Act that relate to patent invalidity—35 U.S.C. §§ 102, 103, 112. The solution is not to be found in constraining the subject matter eligible for patenting under Section 101. Unduly constraining the scope of patent-eligible subject matter—or leaving that scope subject to subjective analysis and the uncertainty that necessarily follows—risks hampering the development of new technologies in ways that are impossible to predict. That presents a threat to innovation and progress orders of magnitude greater than any threat that possibly could be occasioned by a decision that makes clear—as did *Diehr*—that concepts of novelty and nonobvi-

ousness have nothing whatsoever to do with patent eligibility under Section 101.

**III. THIS COURT’S EARLY PATENT-ELIGIBILITY DECISIONS ARE SUFFICIENT TO RESOLVE ANY QUESTION ARISING UNDER SECTION 101.**

A. *Amici* respectfully submit that any additional “limiting criteria” for patent eligibility should not be drawn from the concept of “token post-solution activity,” but instead return to this Court’s earlier patent-eligibility precedents, which are the foundation upon which *Flook*, *Diehr*, and *Bilski* all rest.

Those cases determined an invention’s eligibility for patenting by inquiring whether the claimed invention is a practical application of a new idea or a claim upon the idea itself. *See, e.g., Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948) (“He 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.”); *Mackay Radio*, 306 U.S. at 94 (“While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.”). Under this test, a process is eligible for patenting if it uses one or more disclosed physical things to produce a practical result or effect in the physical world; and is ineligible when it is untethered to a practical application. *See Cochrane*, 94 U.S. at 787-88 (“A process is a mode of treatment of certain materials to produce a given result.”).

B. This broad standard can be traced back at least to *O'Reilly v. Morse*, which stated: “Whoever discovers that a *certain useful result* will be produced, in any art, machine, manufacture, or composition of matter, by the use of *certain means*, is entitled to a patent for it, provided he specifies the means.” 56 U.S. (15 How.) 62, 119 (1854) (emphases added). In *Tilghman v. Proctor*, the Court repeated “this clear and exact summary of the law,” which “affords the key to almost every case that can arise.” 102 U.S. 707, 728 (1881).

Critically, this requirement that the claims be connected to the practical world has been effective in supporting the patent eligibility of new technologies, while preventing inventors from claiming the fundamental principles that underlie them, *i.e.*, from preempting a law of nature.

Thus, for example, when Samuel Morse claimed “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,” he went beyond the bounds of patent eligibility. *O'Reilly*, 56 U.S. (15 How.) at 112 (emphasis added). In this, his eighth claim, Morse attempted to claim a useful result he surely achieved, but he declined to limit himself to any mechanism or method. This was fatal to the claim. *Id.* at 117 (“[Morse] has [discovered] a method by which intelligible marks or signs may be printed at a distance. And for the method or process thus discovered, he is entitled to a patent. But he has not discovered that the electro-magnetic current, used as motive power, in any other method, and with any other combination, will do as well.”).

As the Court explained in *Tilghman*, the “eighth claim of Morse’s patent was held to be invalid, because it was regarded by the Court as being not for a process, but for a mere principle.” 102 U.S. at 726. The claim was ineligible because it sought to protect “the exclusive use of one of the powers of nature for a particular purpose.” *Ibid.* Morse did not claim “any particular process for utilizing the power,” but rather claim eight was “put forward on the ground that the patentee was the first to discover that it *could* be thus employed.” *Id.* at 726-27. Notably, the *O’Reilly* Court allowed a number of other claims, including the fifth. 56 U.S. (15 How.) at 112. That claim was for “the system of signs, consisting of dots and spaces, and of dots, spaces and horizontal lines.” *Id.* at 86. This system, an early version of Morse Code, was nothing other than a system for manipulating an on-off switch—the telegraph key—in a prescribed manner to produce the useful result of intelligible communications between two parties. And it was eligible for patenting as such.

C. A generation later this Court reaffirmed this distinction between useful process and principle in a case involving Alexander Graham Bell’s telephone patent. “[E]lectricity, left to itself, will not do what is wanted. The art consists in so controlling the force as to make it accomplish the purpose.” *The Telephone Cases*, 126 U.S. 1, 532 (1888). The Court drew the line even more finely than in *O’Reilly*, approving Bell’s patent not for a method tied to a working apparatus (indeed, Bell’s actual device did not yet work when he applied for the patent (*id.* at 535)), but instead on the manner of manipulating electricity to render it capable of transmitting voice. “[Bell] found out that, by changing the intensity of a continuous current so as to make it correspond exactly with the

changes in the density of air caused by sonorous vibrations, vocal and other sounds could be transmitted and heard at a distance. This was the thing to be done, and Bell discovered the way of doing it.” *Id.* at 538-39. “Bell’s patent is not alone for the particular apparatus he describes, but for the process that apparatus was designed to bring into use.” *Id.* at 540.

The telling difference between Morse’s ineligible eighth claim and Bell’s claim was that Bell’s patent claimed the process of altering a specified thing, an electrical current, to make it useful. Morse’s claim, on the other hand, purported to cover all uses of electro-magnetism to obtain the claimed result. It provided no physical implementation; it merely described the abstract principle of using electro-magnetism “however developed for marking or printing intelligible characters, signs, or letters, at any distances.” *O’Reilly*, 56 U.S. (15 How.) at 112. Bell’s claim consisted of an operative, specified process, while Morse’s described only the objective of an unspecified process.

D. The notion of practical application in the physical world remains the touchstone of patent eligibility today. As this Court has consistently explained, “while an abstract idea, law of nature, or mathematical formula could not be patented, ‘an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.’” *Bilski v. Kappos*, 130 S. Ct. at 3230 (quoting *Diehr*, 450 U.S. at 187) (emphasis added in *Bilski*).

It is important to recognize that the physical world includes much more than that which one can see or touch. It encompasses anything discernable or measurable, including (for example) electro-magnetic

signals propagated through the air, electric current transmitted by wire, electrostatic or magnetic charges encoded on computer media, or photonic impulses promulgated through a fiber optic cable. *See* John B. Anderson, *Digital Transmission Engineering* 1-5 (2d ed. 2005). Likewise, it includes the existence of a single molecule or chemical compound that is undetectable to the human eye but which when properly assayed could reveal practical information about the source of the molecule whether it be a chemical reaction or a human body. Even a process using a pair of atoms in a calculation by a quantum computer is a physical process used to produce a practical result or effect.

The implementation of a practical application to produce a “useful result” necessarily involves an alteration or manipulation of matter or energy. And claims directed to inventions possessing practical utility and producing useful results in the real world should be equally eligible for patenting whether or not they harness natural processes and forces to manipulate physical matter or physically embodied information. For centuries, machines and processes that have worked with or communicated physically embodied information or data have been considered patentable. Thus, for example, properly claimed computer-implemented processes use physical means to create useful results. Neither the Patent Act nor common sense suggests any reason why an analog filter—operating according to the principles of a mathematical algorithm—used to improve radio signals in a cellphone would be patent eligible and a

digital filter implemented on a general purpose processor using the same algorithm would not.<sup>6</sup>

A process that makes use of a disclosed thing, and produces a useful result in the physical world, does something more than describe an unpatentable principle—it is necessarily an application of that principle. Conversely, the more abstract a recited claim, the less likely it is a physical means or has a useful effect.

The dichotomy established in this Court’s nineteenth-century decisions between principles and their application through physical means used to produce a useful result in the real world thus provides a clear, intuitive, and workable approach to determining patent eligibility and effectively implements this Court’s prohibition on the patenting of abstract ideas. And it provides a more than adequate basis for assessing the eligibility of the claims at issue here.

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<sup>6</sup> In a computer-implemented process the physical means consists primarily of the rapid activation and deactivation of millions of transistors to perform some useful function, such as displaying images and solving problems. *See generally* David A. Patterson & John L. Hennessy, *Computer Organization and Design* (4th ed. 2009). Such functions, implemented and made real, physical, and useful by the activity of transistors, are the manifestation of the process.

## CONCLUSION

Subject-matter eligibility under 35 U.S.C. § 101 is the threshold inquiry for any applicant who seeks to patent his invention. Congress drafted that statute so that “anything under the sun that is made by man” would be eligible for a patent. The now-prevailing mode of Section 101 analysis that allows courts and the PTO to parse claims into the “underlying invention” and “extra-solution” elements based on inherently subjective evaluations of “significance,” misplaced assessments of novelty, or both, is incompatible both with the statutory text and Congress’s expressed intention. The Court, therefore, should reject that analytical framework. Instead, it should reaffirm the historical standard for patent eligibility of process inventions dating back to *O’Reilly v. Morse* and hold that a process invention is eligible for patenting if it uses “certain means” to create “a certain useful result.”

Respectfully submitted.

MATTHEW D. MCGILL  
*Counsel of Record*  
WILLIAM G. JENKS  
GIBSON, DUNN & CRUTCHER LLP  
1050 Connecticut Avenue, N.W.  
Washington, D.C. 20036  
(202) 955-8500  
mmcgill@gibsondunn.com

*Counsel for Amici Curiae*

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