

Opinion of the Court

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SUPREME COURT OF THE UNITED STATES

No. 08–964

BERNARD L. BILSKI AND RAND A. WARSAW,
PETITIONERS *v.* DAVID J. KAPPOS, UNDER
SECRETARY OF COMMERCE FOR INTEL-
LECTUAL PROPERTY AND DIRECTOR,
PATENT AND TRADEMARK OFFICE

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF
APPEALS FOR THE FEDERAL CIRCUIT

[June 28, 2010]

JUSTICE KENNEDY delivered the opinion of the Court, except as to Parts II–B–2 and II–C–2.*

The question in this case turns on whether a patent can be issued for a claimed invention designed for the business world. The patent application claims a procedure for instructing buyers and sellers how to protect against the risk of price fluctuations in a discrete section of the economy. Three arguments are advanced for the proposition that the claimed invention is outside the scope of patent law: (1) it is not tied to a machine and does not transform an article; (2) it involves a method of conducting business; and (3) it is merely an abstract idea. The Court of Appeals ruled that the first mentioned of these, the so-called machine-or-transformation test, was the sole test to be used for determining the patentability of a “process” under the Patent Act, 35 U. S. C. §101.

* JUSTICE SCALIA does not join Parts II–B–2 and II–C–2.

Opinion of the Court

I

Petitioners' application seeks patent protection for a claimed invention that explains how buyers and sellers of commodities in the energy market can protect, or hedge, against the risk of price changes. The key claims are claims 1 and 4. Claim 1 describes a series of steps instructing how to hedge risk. Claim 4 puts the concept articulated in claim 1 into a simple mathematical formula. Claim 1 consists of the following steps:

“(a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumers;

“(b) identifying market participants for said commodity having a counter-risk position to said consumers; and

“(c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.” App. 19–20.

The remaining claims explain how claims 1 and 4 can be applied to allow energy suppliers and consumers to minimize the risks resulting from fluctuations in market demand for energy. For example, claim 2 claims “[t]he method of claim 1 wherein said commodity is energy and said market participants are transmission distributors.” *Id.*, at 20. Some of these claims also suggest familiar statistical approaches to determine the inputs to use in claim 4's equation. For example, claim 7 advises using well-known random analysis techniques to determine how much a seller will gain “from each transaction under each

Opinion of the Court

historical weather pattern.” *Id.*, at 21.

The patent examiner rejected petitioners’ application, explaining that it “is not implemented on a specific apparatus and merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application, therefore, the invention is not directed to the technological arts.” App. to Pet. for Cert. 148a. The Board of Patent Appeals and Interferences affirmed, concluding that the application involved only mental steps that do not transform physical matter and was directed to an abstract idea. *Id.*, at 181a–186a.

The United States Court of Appeals for the Federal Circuit heard the case en banc and affirmed. The case produced five different opinions. Students of patent law would be well advised to study these scholarly opinions.

Chief Judge Michel wrote the opinion of the court. The court rejected its prior test for determining whether a claimed invention was a patentable “process” under §101—whether it produces a “useful, concrete, and tangible result”—as articulated in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (1998), and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1357 (1999). See *In re Bilski*, 545 F.3d 943, 959–960, and n. 19 (CA Fed. 2008) (en banc). The court held that “[a] claimed process is surely patent-eligible under §101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.” *Id.*, at 954. The court concluded this “machine-or-transformation test” is “the sole test governing §101 analyses,” *id.*, at 955, and thus the “test for determining patent eligibility of a process under §101,” *id.*, at 956. Applying the machine-or-transformation test, the court held that petitioners’ application was not patent eligible. *Id.*, at 963–966. Judge Dyk wrote a separate concurring opinion, providing historical support for the

Opinion of the Court

court's approach. *Id.*, at 966–976.

Three judges wrote dissenting opinions. Judge Mayer argued that petitioners' application was "not eligible for patent protection because it is directed to a method of conducting business." *Id.*, at 998. He urged the adoption of a "technological standard for patentability." *Id.*, at 1010. Judge Rader would have found petitioners' claims were an unpatentable abstract idea. *Id.*, at 1011. Only Judge Newman disagreed with the court's conclusion that petitioners' application was outside of the reach of §101. She did not say that the application should have been granted but only that the issue should be remanded for further proceedings to determine whether the application qualified as patentable under other provisions. *Id.*, at 997.

This Court granted certiorari. 556 U. S. ___ (2009).

II

A

Section 101 defines the subject matter that may be patented under the Patent Act:

"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, subject to the conditions and requirements of this title."

Section 101 thus specifies four independent categories of inventions or discoveries that are eligible for protection: processes, machines, manufactures, and compositions of matter. "In choosing such expansive terms . . . modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope." *Diamond v. Chakrabarty*, 447 U. S. 303, 308 (1980). Congress took this permissive approach to patent eligibility to ensure that "ingenuity should receive a liberal encouragement." *Id.*, at 308–309 (quoting 5 Writings of Thomas

Opinion of the Court

Jefferson 75–76 (H. Washington ed. 1871)).

The Court’s precedents provide three specific exceptions to §101’s broad patent-eligibility principles: “laws of nature, physical phenomena, and abstract ideas.” *Chakrabarty, supra*, at 309. While these exceptions are not required by the statutory text, they are consistent with the notion that a patentable process must be “new and useful.” And, in any case, these exceptions have defined the reach of the statute as a matter of statutory *stare decisis* going back 150 years. See *Le Roy v. Tatham*, 14 How. 156, 174–175 (1853). The concepts covered by these exceptions are “part of the storehouse of knowledge of all men . . . free to all men and reserved exclusively to none.” *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U. S. 127, 130 (1948).

The §101 patent-eligibility inquiry is only a threshold test. Even if an invention qualifies as a process, machine, manufacture, or composition of matter, in order to receive the Patent Act’s protection the claimed invention must also satisfy “the conditions and requirements of this title.” §101. Those requirements include that the invention be novel, see §102, nonobvious, see §103, and fully and particularly described, see §112.

The present case involves an invention that is claimed to be a “process” under §101. Section 100(b) defines “process” as:

“process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.”

The Court first considers two proposed categorical limitations on “process” patents under §101 that would, if adopted, bar petitioners’ application in the present case: the machine-or-transformation test and the categorical exclusion of business method patents.

Opinion of the Court

B

1

Under the Court of Appeals' formulation, an invention is a "process" only if: "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." 545 F. 3d, at 954. This Court has "more than once cautioned that courts 'should not read into the patent laws limitations and conditions which the legislature has not expressed.'" *Diamond v. Diehr*, 450 U. S. 175, 182 (1981) (quoting *Chakrabarty, supra*, at 308; some internal quotation marks omitted). In patent law, as in all statutory construction, "[u]nless otherwise defined, 'words will be interpreted as taking their ordinary, contemporary, common meaning.'" *Diehr, supra*, at 182 (quoting *Perrin v. United States*, 444 U. S. 37, 42 (1979)). The Court has read the §101 term "manufacture" in accordance with dictionary definitions, see *Chakrabarty, supra*, at 308 (citing *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U. S. 1, 11 (1931)), and approved a construction of the term "composition of matter" consistent with common usage, see *Chakrabarty, supra*, at 308 (citing *Shell Development Co. v. Watson*, 149 F. Supp. 279, 280 (DC 1957)).

Any suggestion in this Court's case law that the Patent Act's terms deviate from their ordinary meaning has only been an explanation for the exceptions for laws of nature, physical phenomena, and abstract ideas. See *Parker v. Flook*, 437 U. S. 584, 588–589 (1978). This Court has not indicated that the existence of these well-established exceptions gives the Judiciary *carte blanche* to impose other limitations that are inconsistent with the text and the statute's purpose and design. Concerns about attempts to call any form of human activity a "process" can be met by making sure the claim meets the requirements of §101.

Adopting the machine-or-transformation test as the sole

Opinion of the Court

test for what constitutes a “process” (as opposed to just an important and useful clue) violates these statutory interpretation principles. Section 100(b) provides that “[t]he term ‘process’ means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.” The Court is unaware of any “ordinary, contemporary, common meaning,” *Diehr, supra*, at 182, of the definitional terms “process, art or method” that would require these terms to be tied to a machine or to transform an article. Respondent urges the Court to look to the other patentable categories in §101—machines, manufactures, and compositions of matter—to confine the meaning of “process” to a machine or transformation, under the doctrine of *noscitur a sociis*. Under this canon, “an ambiguous term may be given more precise content by the neighboring words with which it is associated.” *United States v. Stevens*, 559 U. S. ___, ___ (2010) (slip op., at 12) (internal quotation marks omitted). This canon is inapplicable here, for §100(b) already explicitly defines the term “process.” See *Burgess v. United States*, 553 U. S. 124, 130 (2008) (“When a statute includes an explicit definition, we must follow that definition” (internal quotation marks omitted)).

The Court of Appeals incorrectly concluded that this Court has endorsed the machine-or-transformation test as the exclusive test. It is true that *Cochrane v. Deener*, 94 U. S. 780, 788 (1877), explained that a “process” is “an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.” More recent cases, however, have rejected the broad implications of this dictum; and, in all events, later authority shows that it was not intended to be an exhaustive or exclusive test. *Gottschalk v. Benson*, 409 U. S. 63, 70 (1972), noted that “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue to the pat-

Opinion of KENNEDY, J.

entability of a process claim that does not include particular machines.” At the same time, it explicitly declined to “hold that no process patent could ever qualify if it did not meet [machine or transformation] requirements.” *Id.*, at 71. *Flook* took a similar approach, “assum[ing] that a valid process patent may issue even if it does not meet [the machine-or-transformation test].” 437 U. S., at 588, n. 9.

This Court’s precedents establish that the machine-or-transformation test is a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under §101. The machine-or-transformation test is not the sole test for deciding whether an invention is a patent-eligible “process.”

2

It is true that patents for inventions that did not satisfy the machine-or-transformation test were rarely granted in earlier eras, especially in the Industrial Age, as explained by Judge Dyk’s thoughtful historical review. See 545 F. 3d, at 966–976 (concurring opinion). But times change. Technology and other innovations progress in unexpected ways. For example, it was once forcefully argued that until recent times, “well-established principles of patent law probably would have prevented the issuance of a valid patent on almost any conceivable computer program.” *Diehr*, 450 U. S., at 195 (STEVENS, J., dissenting). But this fact does not mean that unforeseen innovations such as computer programs are always unpatentable. See *id.*, at 192–193 (majority opinion) (holding a procedure for molding rubber that included a computer program is within patentable subject matter). Section 101 is a “dynamic provision designed to encompass new and unforeseen inventions.” *J. E. M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U. S. 124, 135 (2001). A categorical rule denying patent protection for “inventions in areas not

Opinion of KENNEDY, J.

contemplated by Congress . . . would frustrate the purposes of the patent law.” *Chakrabarty*, 447 U. S., at 315.

The machine-or-transformation test may well provide a sufficient basis for evaluating processes similar to those in the Industrial Age—for example, inventions grounded in a physical or other tangible form. But there are reasons to doubt whether the test should be the sole criterion for determining the patentability of inventions in the Information Age. As numerous *amicus* briefs argue, the machine-or-transformation test would create uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals. See, *e.g.*, Brief for Business Software Alliance 24–25; Brief for Biotechnology Industry Organization et al. 14–27; Brief for Boston Patent Law Association 8–15; Brief for Houston Intellectual Property Law Association 17–22; Brief for Dolby Labs., Inc., et al. 9–10.

In the course of applying the machine-or-transformation test to emerging technologies, courts may pose questions of such intricacy and refinement that they risk obscuring the larger object of securing patents for valuable inventions without transgressing the public domain. The dissent by Judge Rader refers to some of these difficulties. 545 F. 3d, at 1015. As a result, in deciding whether previously unforeseen inventions qualify as patentable “process[es],” it may not make sense to require courts to confine themselves to asking the questions posed by the machine-or-transformation test. Section 101’s terms suggest that new technologies may call for new inquiries. See *Benson*, *supra*, at 71 (to “freeze process patents to old technologies, leaving no room for the revelations of the new, onrushing technology[,] . . . is not our purpose”).

It is important to emphasize that the Court today is not commenting on the patentability of any particular inven-

Opinion of the Court

tion, let alone holding that any of the above-mentioned technologies from the Information Age should or should not receive patent protection. This Age puts the possibility of innovation in the hands of more people and raises new difficulties for the patent law. With ever more people trying to innovate and thus seeking patent protections for their inventions, the patent law faces a great challenge in striking the balance between protecting inventors and not granting monopolies over procedures that others would discover by independent, creative application of general principles. Nothing in this opinion should be read to take a position on where that balance ought to be struck.

C
1

Section 101 similarly precludes the broad contention that the term “process” categorically excludes business methods. The term “method,” which is within §100(b)’s definition of “process,” at least as a textual matter and before consulting other limitations in the Patent Act and this Court’s precedents, may include at least some methods of doing business. See, *e.g.*, Webster’s New International Dictionary 1548 (2d ed. 1954) (defining “method” as “[a]n orderly procedure or process . . . regular way or manner of doing anything; hence, a set form of procedure adopted in investigation or instruction”). The Court is unaware of any argument that the “ordinary, contemporary, common meaning,” *Diehr, supra*, at 182, of “method” excludes business methods. Nor is it clear how far a prohibition on business method patents would reach, and whether it would exclude technologies for conducting a business more efficiently. See, *e.g.*, Hall, Business and Financial Method Patents, Innovation, and Policy, 56 *Scottish J. Pol. Econ.* 443, 445 (2009) (“There is no precise definition of . . . business method patents”).

The argument that business methods are categorically

Opinion of KENNEDY, J.

outside of §101's scope is further undermined by the fact that federal law explicitly contemplates the existence of at least some business method patents. Under 35 U. S. C. §273(b)(1), if a patent-holder claims infringement based on "a method in [a] patent," the alleged infringer can assert a defense of prior use. For purposes of this defense alone, "method" is defined as "a method of doing or conducting business." §273(a)(3). In other words, by allowing this defense the statute itself acknowledges that there may be business method patents. Section 273's definition of "method," to be sure, cannot change the meaning of a prior-enacted statute. But what §273 does is clarify the understanding that a business method is simply one kind of "method" that is, at least in some circumstances, eligible for patenting under §101.

A conclusion that business methods are not patentable in any circumstances would render §273 meaningless. This would violate the canon against interpreting any statutory provision in a manner that would render another provision superfluous. See *Corley v. United States*, 556 U. S. ___, ___ (2009) (slip op., at 9). This principle, of course, applies to interpreting any two provisions in the U. S. Code, even when Congress enacted the provisions at different times. See, e.g., *Hague v. Committee for Industrial Organization*, 307 U. S. 496, 529–530 (1939) (opinion of Stone, J.). This established rule of statutory interpretation cannot be overcome by judicial speculation as to the subjective intent of various legislators in enacting the subsequent provision. Finally, while §273 appears to leave open the possibility of some business method patents, it does not suggest broad patentability of such claimed inventions.

2

Interpreting §101 to exclude all business methods simply because business method patents were rarely issued

Opinion of KENNEDY, J.

until modern times revives many of the previously discussed difficulties. See *supra*, at 8–9. At the same time, some business method patents raise special problems in terms of vagueness and suspect validity. See *eBay Inc. v. MercExchange, L. L. C.*, 547 U.S. 388, 397 (2006) (KENNEDY, J., concurring). The Information Age empowers people with new capacities to perform statistical analyses and mathematical calculations with a speed and sophistication that enable the design of protocols for more efficient performance of a vast number of business tasks. If a high enough bar is not set when considering patent applications of this sort, patent examiners and courts could be flooded with claims that would put a chill on creative endeavor and dynamic change.

In searching for a limiting principle, this Court’s precedents on the unpatentability of abstract ideas provide useful tools. See *infra*, at 12–15. Indeed, if the Court of Appeals were to succeed in defining a narrower category or class of patent applications that claim to instruct how business should be conducted, and then rule that the category is unpatentable because, for instance, it represents an attempt to patent abstract ideas, this conclusion might well be in accord with controlling precedent. See *ibid.* But beyond this or some other limitation consistent with the statutory text, the Patent Act leaves open the possibility that there are at least some processes that can be fairly described as business methods that are within patentable subject matter under §101.

Finally, even if a particular business method fits into the statutory definition of a “process,” that does not mean that the application claiming that method should be granted. In order to receive patent protection, any claimed invention must be novel, §102, nonobvious, §103, and fully and particularly described, §112. These limitations serve a critical role in adjusting the tension, ever

Opinion of the Court

present in patent law, between stimulating innovation by protecting inventors and impeding progress by granting patents when not justified by the statutory design.

III

Even though petitioners' application is not categorically outside of §101 under the two broad and atextual approaches the Court rejects today, that does not mean it is a "process" under §101. Petitioners seek to patent both the concept of hedging risk and the application of that concept to energy markets. App. 19–20. Rather than adopting categorical rules that might have wide-ranging and unforeseen impacts, the Court resolves this case narrowly on the basis of this Court's decisions in *Benson*, *Flook*, and *Diehr*, which show that petitioners' claims are not patentable processes because they are attempts to patent abstract ideas. Indeed, all members of the Court agree that the patent application at issue here falls outside of §101 because it claims an abstract idea.

In *Benson*, the Court considered whether a patent application for an algorithm to convert binary-coded decimal numerals into pure binary code was a "process" under §101. 409 U. S., at 64–67. The Court first explained that "[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." *Id.*, at 67 (quoting *Le Roy*, 14 How., at 175). The Court then held the application at issue was not a "process," but an unpatentable abstract idea. "It is conceded that one may not patent an idea. But in practical effect that would be the result if the formula for converting . . . numerals to pure binary numerals were patented in this case." 409 U. S., at 71. A contrary holding "would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself." *Id.*, at 72.

In *Flook*, the Court considered the next logical step after

Opinion of the Court

Benson. The applicant there attempted to patent a procedure for monitoring the conditions during the catalytic conversion process in the petrochemical and oil-refining industries. The application's only innovation was reliance on a mathematical algorithm. 437 U. S., at 585–586. *Flook* held the invention was not a patentable “process.” The Court conceded the invention at issue, unlike the algorithm in *Benson*, had been limited so that it could still be freely used outside the petrochemical and oil-refining industries. 437 U. S., at 589–590. Nevertheless, *Flook* rejected “[t]he notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process.” *Id.*, at 590. The Court concluded that the process at issue there was “unpatentable under §101, not because it contain[ed] a mathematical algorithm as one component, but because once that algorithm [wa]s assumed to be within the prior art, the application, considered as a whole, contain[ed] no patentable invention.” *Id.*, at 594. As the Court later explained, *Flook* stands for the proposition that the prohibition against patenting abstract ideas “cannot be circumvented by attempting to limit the use of the formula to a particular technological environment” or adding “insignificant postsolution activity.” *Diehr*, 450 U. S., at 191–192.

Finally, in *Diehr*, the Court established a limitation on the principles articulated in *Benson* and *Flook*. The application in *Diehr* claimed a previously unknown method for “molding raw, uncured synthetic rubber into cured precision products,” using a mathematical formula to complete some of its several steps by way of a computer. 450 U. S., at 177. *Diehr* explained that 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.” *Id.*, at 187. *Diehr* emphasized

Opinion of the Court

the need to consider the invention as a whole, rather than “dissect[ing] the claims into old and new elements and then . . . ignor[ing] the presence of the old elements in the analysis.” *Id.*, at 188. Finally, the Court concluded that because the claim was not “an attempt to patent a mathematical formula, but rather [was] an industrial process for the molding of rubber products,” it fell within §101’s patentable subject matter. *Id.*, at 192–193.

In light of these precedents, it is clear that petitioners’ application is not a patentable “process.” Claims 1 and 4 in petitioners’ application explain the basic concept of hedging, or protecting against risk: “Hedging is a fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.” 545 F. 3d, at 1013 (Rader, J., dissenting); see, e.g., D. Chorafas, *Introduction to Derivative Financial Instruments* 75–94 (2008); C. Stickney, R. Weil, K. Schipper, & J. Francis, *Financial Accounting: An Introduction to Concepts, Methods, and Uses* 581–582 (13th ed. 2010); S. Ross, R. Westerfield, & B. Jordan, *Fundamentals of Corporate Finance* 743–744 (8th ed. 2008). The concept of hedging, described in claim 1 and reduced to a mathematical formula in claim 4, is an unpatentable abstract idea, just like the algorithms at issue in *Benson* and *Flook*. Allowing petitioners to patent risk hedging would preempt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea.

Petitioners’ remaining claims are broad examples of how hedging can be used in commodities and energy markets. *Flook* established that limiting an abstract idea to one field of use or adding token postsolution components did not make the concept patentable. That is exactly what the remaining claims in petitioners’ application do. These claims attempt to patent the use of the abstract idea of hedging risk in the energy market and then instruct the

Opinion of the Court

use of well-known random analysis techniques to help establish some of the inputs into the equation. Indeed, these claims add even less to the underlying abstract principle than the invention in *Flook* did, for the *Flook* invention was at least directed to the narrower domain of signaling dangers in operating a catalytic converter.

* * *

Today, the Court once again declines to impose limitations on the Patent Act that are inconsistent with the Act's text. The patent application here can be rejected under our precedents on the unpatentability of abstract ideas. The Court, therefore, need not define further what constitutes a patentable "process," beyond pointing to the definition of that term provided in §100(b) and looking to the guideposts in *Benson*, *Flook*, and *Diehr*.

And nothing in today's opinion should be read as endorsing interpretations of §101 that the Court of Appeals for the Federal Circuit has used in the past. See, e.g., *State Street*, 149 F. 3d, at 1373; *AT&T Corp.*, 172 F. 3d, at 1357. It may be that the Court of Appeals thought it needed to make the machine-or-transformation test exclusive precisely because its case law had not adequately identified less extreme means of restricting business method patents, including (but not limited to) application of our opinions in *Benson*, *Flook*, and *Diehr*. In disapproving an exclusive machine-or-transformation test, we by no means foreclose the Federal Circuit's development of other limiting criteria that further the purposes of the Patent Act and are not inconsistent with its text.

The judgment of the Court of Appeals is affirmed.

It is so ordered.