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Intellectual Property in the New Technological Age

2010

Case and Statutory Supplement

Robert P. Merges

Peter S. Menell

Mark A. Lemley



Wolters Kluwer
Law & Business

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ROBERT P. MERGES

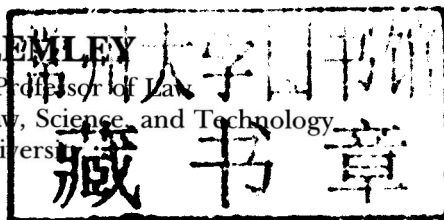
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AUSTIN BOSTON CHICAGO NEW YORK THE NETHERLANDS

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New York, NY 10011-5201

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Aspen Publishers
Attn: Order Department
PO Box 990
Frederick, MD 21705

Printed in the United States of America.

1 2 3 4 5 6 7 8 9 0

ISBN 978-0-7355-9061-8

ISSN 1540-2932

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PREFACE

The impetus for writing *Intellectual Property in the New Technological Age* was our desire to have a book that would encompass and keep pace with the rapid technological advances driving the U.S. economy and changes in intellectual property law. The rapid diffusion of new technology has continued since our book was released in 1997, and the goal of the revised fifth edition, released in 2010, was to fully integrate these developments.

This supplement includes all of the changes that were made to the intellectual property statutes up to May 31, 2010, as well as the Supreme Court decision in *Bilski* and the Federal Circuit's decision in *Ariad v. Lilly*.

As an additional way for professors and students to keep abreast of the myriad developments in the field of law and technology, we recommend the *Annual Review of Law & Technology*. Co-sponsored by the Berkeley Center for Law & Technology and the Berkeley Technology Law Journal, the *Annual Review* provides a compendium of case comments on important cases, new legislation, international treatises, and developments in foreign law over the prior year. The most recent *Annual Review* will be available in July 2010.

Robert P. Merges
Peter S. Menell
Mark A. Lemley

July 2010

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Part I
Cases and Notes

3 *Patent Law*

Insert at p. 147, replacing the Federal Circuit decision in Bilski:

===== ***Bilski v. Kappos*, 2010 WL 2555192,**
===== ***95 U.S.P.Q.2d 1001***
===== ***(U.S. Sup. Ct., June 28, 2010)***

Justice KENNEDY delivered the opinion of the Court, except as to Parts II-B-2 and II-C-2. [Justice SCALIA does not join 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.

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 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 (C.A. 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 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

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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. ___, 129 S.Ct. 2735 (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, 100 S.Ct. 2204 (quoting 5 Writings of Thomas 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.

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 (1981) (quoting *Chakrabarty*, *supra*, at 308, 100 S.Ct. 2204; 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. The Court has read the §101 term “manufacture” in accordance with dictionary definitions, see *Chakrabarty*, *supra*, at 308, and approved a construction of the term “composition of matter” consistent with common usage, see *Chakrabarty*, *supra*, at 308.

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 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

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associated.” *United States v. Stevens*, 559 U.S.—, 130 S.Ct. 1577, 1587 (2010) (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 patentability 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 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 invention, 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

In searching for a limiting principle, this Court's precedents on the unpatentability of abstract ideas provide useful tools. See *infra*, at _____. 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 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, 93 S. Ct. 253 (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, 93 S.Ct. 253. A contrary holding "would wholly preempt 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 *Benson*. The applicant there attempted to patent a procedure for monitoring the conditions during