The Jurisprudence of Justice John Paul Stevens: Selected Opinions on Intellectual Property Law

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Summary

This report briefly surveys decisions of retiring Justice John Paul Stevens in intellectual property cases. An examination of Justice Stevens' written opinions relating to intellectual property law reveals a strong desire to ensure that the rights of intellectual property creators are balanced with the rights of the public to access creative and innovative works. No decision embodies this interest more than Justice Stevens' majority opinion in *Sony Corporation of America v. Universal City Studios, Inc.*, a landmark copyright case issued in 1984 that paved the way for the development and sale of popular consumer electronics, such as the video recorder (VCR, DVR, TiVo), portable music and video players (iPod), personal computers, and other devices that permit the recording and playback of copyrighted content.

In addition, Justice Stevens issued a lengthy dissent in the 2003 case *Eldred v. Ashcroft*, in which he asserted that Congress lacked the power to pass a law that extended the term of existing copyrights by 20 years. Such a retroactive extension delays the entrance of copyrighted works into the public domain and, in Justice Stevens' opinion, is a violation of the Constitution's Copyright Clause that authorizes Congress to grant exclusive intellectual property rights to authors and artists for "limited Times."

In the area of patent law, Justice Stevens authored the majority opinion in the 1978 case *Parker v. Flook* that sought to severely restrict the availability of patent protection on inventions relating to computer software programs. Yet just three years later, the Supreme Court's decision in *Diamond v. Diehr* effectively opened the door to the allowance of patents on some computer programs. Justice Stevens wrote a strongly worded dissent in *Diehr* in which he suggested that Congress would be better suited than the Court to address the policy considerations of allowing patent protection for computer programs. His written opinions in both of these cases reveal an interest in judicial restraint, not wanting to extend patent rights into areas that Congress had not contemplated.

Justice Stevens dissented from the 1999 opinion, *Florida Prepaid v. College Savings Bank*, in which a majority of the Court invalidated Congress's attempt to abrogate state sovereign immunity and authorize patent holders to file suits for monetary damages against states and state instrumentalities that infringe their patent rights. Justice Stevens believed that the 1992 Patent and Plant Variety Protection Remedy Clarification Act was a proper exercise of Congress's authority under §5 of the Fourteenth Amendment to prevent state deprivations of property without due process of law, and he expressed his disagreement with the majority opinion's expansive protection of states' rights.

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Introduction

Retiring Justice John Paul Stevens has not authored many opinions relating to intellectual property law, but those he has written reflect his interest in striking an appropriate balance between the protection of intellectual property rights and public access to the products of creative and inventive minds. His intellectual property opinions seek to serve the central purposes of the Copyright and Patent Clause of the Constitution—(1) encourage and reward the creativity of authors and inventors by offering them exclusive legal rights to their respective writings and discoveries, and (2) promote the progress of science and useful arts by requiring that the monopoly privileges last only for a limited period, after which the public gains free access to such work. This report examines Justice Stevens' opinions involving copyright law, patent law, and state sovereign immunity and patent infringement lawsuits. A brief summary of the basic principles and provisions of copyright and patent law precedes each section describing these opinions.

Copyright Law Opinions

Copyright is a federal grant of legal protection for certain original works of creative expression, including books, movies, photography, art, and music.[1] The Copyright Act refers to the creator of such works as an "author;" ownership of a copyright initially vests in the author,[2] but the author may transfer ownership of the copyright to another person or company.[3] A copyright holder possesses several exclusive legal entitlements under the Copyright Act, which together provide the holder with the right to determine whether and under what circumstances the protected work may be used by third parties. The grant of copyright permits the copyright holder to exercise, or authorize others to exercise, the following exclusive rights:

- the reproduction of the copyrighted work;
- the preparation of derivative works based on the copyrighted work;
- the distribution of copies of the copyrighted work;
- the public performance of the copyrighted work; and
- the public display of the copyrighted work, including the individual images of a motion picture.[4]

Therefore, a party desiring to reproduce, adapt, distribute, publicly display, or publicly perform a copyrighted work must ordinarily obtain the permission of the copyright holder, which is usually granted in the form of a voluntarily negotiated license agreement that establishes conditions of use and an amount of monetary compensation known as a royalty fee. There are, however, other ways a third party may legally use a copyrighted work in the absence of affirmative permission from the copyright holder, including the use of statutory licenses or reliance upon the "fair use" doctrine.

[1] 17 U.S.C. § 102(a).

[2] 17 U.S.C. § 201(a).

[3] 17 U.S.C. § 201(d).

[4] 17 U.S.C. § 106.

The doctrine of "fair use" recognizes the right of the public to make reasonable use of copyrighted material, under particular circumstances, without the copyright holder's consent. For example, a teacher may be able to use reasonable excerpts of copyrighted works in preparing a scholarly lecture or commentary, without obtaining permission to do so. The Copyright Act mentions fair use "for purposes such as criticism, comment, news reporting, teaching, scholarship, or research."[5] However, a determination of fair use by a court considers four factors:

- the purpose and character of the use including whether such use is of a commercial nature or is for nonprofit educational purposes,
- the nature of the copyrighted work,
- the amount and substantiality of the portion used in relation to the copyrighted work as a whole, and
- the effect of the use upon the potential market for or value of the copyrighted work.[6]

Because the language of the fair use statute is illustrative, determining what constitutes a fair use of a copyrighted work is often difficult to make in advance—according to the U.S. Supreme Court, such a determination requires a federal court to engage in "case-by-case" analysis.[7]

Violation of one of the exclusive rights of the copyright holder constitutes infringement, and the copyright holder may bring a civil lawsuit against the alleged infringer to collect monetary damages and/or to obtain an injunction to prevent further infringement.[8] The direct infringer is not the only party potentially liable for infringement; the federal courts have recognized two forms of secondary copyright infringement liability: contributory and vicarious. The concept of contributory infringement has its roots in tort law and the notion that one should be held accountable for directly contributing to another's infringement.[9] For contributory infringement liability to exist, a court must find that the secondary infringer "with knowledge of the infringing activity, induces, causes or materially contributes to the infringing conduct of another."[10] Vicarious infringement liability is possible where a defendant "has the right and ability to supervise the infringing activity and also has a direct financial interest in such activities."[11]

Fair Use and Consumer Electronics

For manufacturers of consumer electronics and personal computers, the Supreme Court's 1984 decision in *Sony Corporation of America v. Universal City Studios*[12] is considered the "Magna Carta" of product innovation and the technology age.[13] The *Sony* decision held that the sale of the

[5] 17 U.S.C. § 107.

[6] *Id.*

[7] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577 (1994).

[8] 17 U.S.C. § 501.

[9] Fonovisa, Inc. v. Cherry Auction, Inc., 76 F.3d 259, 264 (9th Cir. 1996).

[10] A & M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1019 (9th Cir. 2001).

[11] Gershwin Publ'g Corp. v. Columbia Artists Mgmt, Inc., 443 F2d. 1159, 1162 (2d. Cir. 1971).

[12] 464 U.S. 417 (1984).

[13] Randal C. Picker, *Rewinding Sony: The Evolving Product, Phoning Home, and the Duty of Ongoing Design*, 55 CASE W. RES. L. REV. 749, 753 (2005); Jessica Litman, *The Sony Paradox*, 55 CASE W. RES. L. REV. 917, 951-60 (2005).

home video cassette recorder (VCR) did not constitute contributory infringement of the copyrights on television programs, because such a "staple article of commerce" is capable of "substantial noninfringing uses"[14] that include "time-shifting"—recording a television program to view it once at a later time, and thereafter erasing it.[15] *Sony's* embrace of time-shifting as a "fair use" of copyrighted works has created a safe harbor from copyright infringement liability for developers and sellers of electronic devices that facilitate the recording, storage, and playback of copyrighted media, such as the digital video recorder (DVR and TiVo), portable music and video players (iPod), and personal computers.[16] Some commentators consider the *Sony* decision to be the "legal foundation of the Digital Age."[17] The outcome of *Sony* "meant that companies could invest in the development of new digital technologies without incurring the risk of enormous liability for the potential misuses of those technologies by some of their consumers."[18]

The *Sony* case concerned a lawsuit in which owners of copyrights on broadcast television programs sought to hold Sony Corporation liable for contributory copyright infringement due to its manufacture and sale of the Betamax VCR that Betamax customers used to record some of the broadcasts.[19] The district court ruled in favor of Sony because the court concluded that noncommercial home recording of material broadcast over public airwaves was a fair use of copyrighted works.[20] The U.S. Court of Appeals for the Ninth Circuit disagreed, believing that the home use of a video tape recorder was not a fair use because it allowed for mass copying of copyrighted television programming.[21] The appellate court held that the copyright owners were entitled to appropriate relief, including an injunction against the manufacture and marketing of the Betamax video recorder or royalties on the sale of the equipment.[22]

The Supreme Court reversed the Ninth Circuit. Justice Stevens authored the majority opinion that garnered the support of four other justices. He was concerned that the Ninth Circuit's ruling, "if affirmed, would enlarge the scope of respondents' statutory monopolies to encompass control over an article of commerce that is not the subject of copyright protection. Such an expansion of the copyright privilege is beyond the limits of the grants authorized by Congress."[23] He explained that defining the scope of the copyright monopoly grant "involves a difficult balance between the interests of authors ... in the control and exploitation of their writings ... on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand." Justice Stevens also noted that historically, Congress has been primarily responsible for amending copyright law in response to changes in technology.[24] He elaborated:

> The judiciary's reluctance to expand the protections afforded by the copyright without explicit legislative guidance is a recurring theme. Sound policy, as well as history, supports

[14] *Sony*, 464 U.S. at 442, 456.

[15] *Id.* at 423.

[16] Peter Menell & David Nimmer, *Unwinding Sony*, 95 CAL. L. REV. 941, 943 (2007).

[17] Matt Schruers and Jonathan Band, *Justice Stevens Invented the Internet*, CCIA Innovation Policy Post, April 20, 2010, *at* http://www.ccianet.org/index.asp?bid=89&BlogEntryID=67&FormID=300&catid=0.

[18] *Id.*

[19] *Sony*, 464 U.S. at 419.

[20] *Id.* at 425.

[21] *Id.* at 427-28.

[22] *Id.* at 421.

[23] *Id.*

[24] *Id.* at 430-31.

> our consistent deference to Congress when major technological innovations alter the market for copyrighted materials. Congress has the constitutional authority and the institutional ability to accommodate fully the varied permutations of competing interests that are inevitably implicated by such new technology.[25]

While Justice Stevens observed that the "Copyright Act does not expressly render anyone liable for infringement committed by another,"[26] he nevertheless acknowledged that the lack of such statutory authorization does not preclude the imposition of vicarious liability on parties who have not themselves engaged in infringing activity.[27] He observed that the only contact between Sony and its customers occurs at the moment of sale of the Betamax video recorder. The video equipment may be used for both infringing and noninfringing purposes, as it is "generally capable of copying the entire range of programs that may be televised: those that are uncopyrighted, those that are copyrighted but may be copied without objection from the copyright holder, and those that the copyright holder would prefer not to have copied."[28]

As there was no precedent in copyright law for imposing vicarious liability on Sony because it sold the video recording equipment with constructive knowledge that its customers might use it to make unauthorized copies of copyrighted programming, Justice Stevens sought guidance from patent law, defending the appropriateness of such reference "because of the historic kinship between patent law and copyright law."[29] He first found that the Patent Act contained an express provision that prohibits contributory infringement liability in the case of the sale of a "staple article or commodity of commerce suitable for substantial noninfringing use."[30] He then quoted from an earlier Supreme Court case involving contributory patent infringement that had said "a sale of an article which though adapted to an infringing use is also adapted to other and lawful uses, is not enough to make the seller a contributory infringer. Such a rule would block the wheels of commerce."[31] While recognizing that there are differences between copyright and patent laws, Justice Stevens believed that the contributory infringement doctrine as it is used in patent law should also be applied to copyright law.[32] Therefore, he "imported" the "staple article of commerce doctrine" from patent law into copyright law,[33] in the passage below:

> The staple article of commerce doctrine must strike a balance between a copyright holder's legitimate demand for effective – not merely symbolic – protection of the statutory monopoly, and the rights of others freely to engage in substantially unrelated areas of commerce. Accordingly, the sale of copying equipment, like the sale of other articles of commerce, does not constitute contributory infringement if the product is widely used for legitimate, unobjectionable purposes. Indeed, it need merely be capable of substantial noninfringing uses.[34]

[25] *Id.* at 431 (citations omitted).

[26] *Id.* at 434.

[27] *Id.* at 435.

[28] *Id.* at 436-37.

[29] *Id.* at 439.

[30] *Id.* at 440 (citing 35 U.S.C. § 271(c)).

[31] Henry v. A. B. Dick Co., 224 U.S. 1, 48 (1912).

[32] *Sony*, 464 U.S. at 442.

[33] Menell & Nimmer, *supra* note 17, at 993.

[34] *Sony*, 464 U.S. at 442.

With this test articulated, Justice Stevens analyzed whether the Betamax was capable of commercially significant noninfringing uses. He identified one potential use that met this standard: "private, noncommercial time-shifting in the home."[35] Such time-shifting could be "authorized" time-shifting (recording noncopyrighted programs or material whose owners did not object to the copying) as well as unauthorized time-shifting (where the copyright holders did not consent to the practice). However, in his view, even unauthorized time-shifting is not infringing because such activity falls within the scope of the Copyright Act's "fair use" doctrine.[36] Because the Betamax is capable of substantial noninfringing uses, Sony's manufacture and sale of such equipment to the public did not constitute contributory copyright infringement.[37] Justice Stevens concluded the Court's majority opinion as follows:

> One may search the Copyright Act in vain for any sign that the elected representatives of the millions of people who watch television every day have made it unlawful to copy a program for later viewing at home, or have enacted a flat prohibition against the sale of machines that make such copying possible.
>
> It may well be that Congress will take a fresh look at this new technology, just as it so often has examined other innovations in the past. But it is not our job to apply laws that have not yet been written. Applying the copyright statute, as it now reads, to the facts as they have been developed in this case, the judgment of the Court of Appeals must be reversed.[38]

Extension of Copyright Terms

The Copyright Clause of the Constitution[39] authorizes Congress: "To promote the Progress of Science[40] ... by securing for limited Times to Authors ... the exclusive Right to their respective Writings…." Therefore, this constitutional provision indicates that the rights conferred by a copyright cannot last forever; rather, a copyright holder may exercise his/her exclusive rights only for "limited Times." At the expiration of that period of time, the copyrighted work becomes part of the public domain, available for anyone to use without payment of royalties or permission.

In 1790, the First Congress created a copyright term of 14 years for existing and future works, subject to renewal for a total of 28 years. By 1909, both the original and the renewal term had been extended to 28 years, for a combined term of 56 years. Additional extensions were enacted between 1962 and 1974. When the current Copyright Act was enacted in 1976, Congress revised the format of copyright terms to conform with the Berne Convention and international practice. Instead of a fixed-year term, the duration of copyright was established as the life of the author plus 50 years.

In 1998, Congress passed the Copyright Term Extension Act (CTEA)[41] that added 20 years to the term of copyright for both subsisting and future copyrights to bring U.S. copyright terms more

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[35] *Id.*

[36] *Id.* at 454-55.

[37] *Id.* at 456.

[38] *Id.*

[39] U.S. CONST., art. I, § 8, cl. 8.

[40] The Framers of the Constitution used the word "Science" to mean "learning or knowledge." Eldred v. Ashcroft, 537 U.S. 186, 243 (2003) (Breyer, J., dissenting).

[41] P.L. 105-298.

closely into conformance with those governed by the European Union. Hence, the law currently provides that an author of a creative work may enjoy copyright protection for the work for a term lasting the entirety of his/her life plus 70 additional years.[42]

Plaintiffs representing individuals and businesses that rely upon and utilize materials in the public domain filed a lawsuit against the U.S. Attorney General to obtain a declaration that the CTEA is unconstitutional. Among other things, plaintiffs argued that in extending the term of subsisting copyrights, the CTEA violated the "limited Times" requirement of the Copyright Clause. The lower court held in favor of the Attorney General, finding no constitutional problems.[43] The U.S. Court of Appeals for the District of Columbia Circuit affirmed the district court.[44]

Justice Ginsburg wrote the majority opinion in *Eldred v. Ashcroft*,[45] in which the Court upheld the CTEA by a vote of 7-2.[46] She stated that "[h]istory reveals an unbroken congressional practice of granting to authors the benefit of term extensions so that all under copyright protection will be governed evenhandedly under the same regime."[47] She rejected the plaintiffs' argument that the "limited Times" requirement requires a forever "fixed" or "inalterable" copyright term.[48] Ultimately, the Court found that the unbroken congressional practice for more than two centuries of applying adjustments to copyright term to both existing and future works "is almost conclusive."[49]

Justice Stevens wrote a vigorous dissent in *Eldred*; Justice Breyer filed a separate dissenting opinion. Justice Stevens concluded that *any* extension of the life of an existing copyright beyond its expiration date exceeds Congress's authority under the Copyright Clause.[50] He noted that the Copyright Clause was "both a grant of power and a limitation," and that the "limited Times" requirement serves the purpose of promoting the progress of science by ensuring that authors' creative works will enter the public domain once the period of exclusivity expires.[51] He criticized the majority opinion's reliance on the history of Congress's "unbroken pattern" of applying copyright extensions retroactively, arguing that "the fact that Congress has repeatedly acted on a mistaken interpretation of the Constitution does not qualify our duty to invalidate an unconstitutional practice when it is finally challenged in an appropriate case."[52] Justice Stevens opined that "[e]x post facto extensions of copyrights result in a gratuitous transfer of wealth from the public to authors, publishers, and their successors in interest. Such retroactive extensions do

[42] 17 U.S.C. § 302. Other terms have been established for different works and different periods of time. For a concise chart explaining the different terms, *see* http://www.copyright.cornell.edu/resources/publicdomain.cfm.

[43] Eldred v. Reno, 74 F. Supp.2d 1 (D.D.C. 1999).

[44] Eldred v. Reno, 239 F.3d 372, 373 (D.C.Cir. 2001).

[45] 537 U.S. 186 (2003).

[46] For a more thorough analysis of this case, *see* CRS Report RS21179, *Copyright Term Extension: Eldred v. Ashcroft*, by Robin Jeweler.

[47] *Eldred*, 537 U.S. at 200.

[48] *Id.* at 199.

[49] *Id.* (citation omitted).

[50] *Id.* at 222-23 (Stevens, J., dissenting).

[51] *Id.* at 223.

[52] *Id.* at 235.

not even arguably serve ... the purpose[] of the Copyright ... Clause."[53] He concluded his dissent by making this observation:

> By failing to protect the public interest in free access to the products of inventive and artistic genius – indeed, by virtually ignoring the central purpose of the Copyright... Clause – the Court has quitclaimed to Congress its principal responsibility in this area of the law. Fairly read, the Court has stated that Congress' actions under the Copyright ... Clause are, for all intents and purposes, judicially unreviewable. That result cannot be squared with the basic tenets of our constitutional structure.[54]

Patent Law Opinions

According to section 101 of the Patent Act, one who "invents or discovers any new and useful process, machine, manufacture, or any composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title."[55] Thus, the subject matter that is eligible for patent protection may be divided into four categories: processes, machines, manufactures, and compositions of matter. The statutory scope of patentable subject matter under § 101 of the Patent Act is quite expansive—the U.S. Supreme Court once observed that the legislative history describing the intent of § 101 was to make patent protection available to "anything under the sun that is made by man."[56]

Notwithstanding the breadth of patentable subject matter, the Supreme Court has articulated certain limits to § 101, stating that "laws of nature, natural phenomena, and abstract ideas" may not be patented.[57] The Court has elaborated on this restriction in several cases, including the following explanation:

> [A] new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are "manifestations of ... nature, free to all men and reserved exclusively to none."[58]

Process patents (also called method patents) involve an act, or series of steps, that may be performed to achieve a given result.[59] The Patent Act defines a "process" to mean a "process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material."[60] However, this statutory definition is not particularly illuminating "given

[53] *Id.* at 227.

[54] *Id.* at 242.

[55] 35 U.S.C. § 101.

[56] Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980).

[57] Diamond v. Diehr, 450 U.S. 175, 185 (1981).

[58] *Chakrabarty*, 447 U.S. at 309 (quoting Funk Brothers Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 130 (1948)).

[59] *See* Cochrane v. Deener, 94 U.S. 780, 788 (1877) ("A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.").

[60] 35 U.S.C. § 100(b).

that the definition itself uses the term 'process.'"[61] It has thus been up to the courts to interpret the scope of patentable processes under § 101 of the Patent Act.

Computer Software Patents

Software-related inventions may be patented if they meet the statutory requirements of the Patent Act.[62] Today more than 20,000 software patents are granted each year. While software patents comprised approximately 2% of all patents awarded in the early 1980s, they now account for approximately 15% of the total number of U.S. patent issued each year.[63]

At the dawn of the computer age in the 1970s, however, inventions relating to computer software were ineligible for patent protection due to a 1972 Supreme Court case, *Gottschalk v. Benson.* The *Benson* Court held that mathematical algorithms, though they may be novel and useful, may not be patented.[64] The Court rejected patent claims for an algorithm used to convert binary code decimal numbers to equivalent pure binary numbers (in order to program a computer), because such claims "were not limited to any particular art or technology, to any particular apparatus or machinery, or to any particular end use."[65] A patent on such claims, according to the Court, "would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself."[66] The *Benson* Court then pronounced that "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."[67]

After *Benson*, patent applicants tried to obtain patents on mechanical devices and processes that included the use of a computer program to run the machine or implement the process.[68] In a 1978 case, *Parker v. Flook,*[69] Justice Stevens wrote the majority opinion, joined by five other justices, in which the Court rejected this attempt to runaround *Benson*. In *Flook,* the patent application described a method for computing an "alarm limit," which is a number that may signal the presence of an abnormal condition in temperature, pressure, and flow rates during catalytic conversion processes.[70] Justice Stevens criticized the patent claims, as follows:

> The patent application does not purport to explain how to select the appropriate margin of safety, the weighting factor, or any of the other variables. Nor does it purport to contain any

[61] In re Bilski, 545 F.3d 943, 951 n.3 (Fed. Cir. 2008).

[62] Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry,* 89 CAL. L. REV. 1, 8 (2001).

[63] James Bessen and Robert M. Hunt, *An Empirical Look at Software Patents, Working Paper No. 03-17/R, available at* http://www.researchoninnovation.org/swpat.pdf; Robert Hunt and James Bessen, *The Software Patent Experiment, available at* http://www.researchoninnovation.org/softpat.pdf. For more information on software patents, *see* CRS Report RL33367, *Patent Reform: Issues in the Biomedical and Software Industries*, by Wendy H. Schacht.

[64] 409 U.S. 63 (1972). For an extensive discussion of this case as well as software patents generally, *see* Pamela Samuelson, Benson *Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions,* 39 EMORY L.J. 1025 (1990).

[65] *Id.* at 64.

[66] *Id.* at 72.

[67] *Id.* at 67.

[68] Cohen & Lemley, *supra* note 52, at 9.

[69] 437 U.S. 584 (1978).

[70] *Id.* at 585.

> disclosure relating to the chemical processes at work, the monitoring of process variables, or the means of setting off an alarm or adjusting an alarm system. All that it provides is a formula for computing an updated alarm limit. Although the computations can be made by pencil and paper calculations, ... the formula is primarily useful for computerized calculations producing automatic adjustments in alarm settings.[71]

Although the patent applicant attempted to distinguish the case from *Benson* by pointing out that his application called for "post-solution" activity—the adjustment of the alarm limit to the figure computed according to the formula—Justice Stevens rejected this argument:

> 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. A competent draftsman could attach some form of post-solution activity to almost any mathematical formula; the Pythagorean theorem would not have been patentable, or partially patentable, because a patent application contained a final step indicating that the formula, when solved, could be usefully applied to existing surveying techniques.[72]

While he allowed that an "inventive application" of a mathematical formula may be patented, he determined that the Flook's application contained no claim of patentable invention.[73] Rather, the application "simply provides a new and presumably better method for calculating alarm limit values."[74] He then concluded that "a claim for an improved method of calculation, even when tied to a specific end use, is unpatentable subject matter under § 101."[75] However, Justice Stevens commented at the end of his opinion:

> To a large extent our conclusion is based on reasoning derived from opinions written before the modern business of developing programs for computers was conceived. The youth of the industry may explain the complete absence of precedent supporting patentability. Neither the dearth of precedent, nor this decision, should therefore be interpreted as reflecting a judgment that patent protection of certain novel and useful computer programs will not promote the progress of science and the useful arts, or that such protection is undesirable as a matter of policy. Difficult questions of policy concerning the kinds of programs that may be appropriate for patent protection and the form and duration of such protection can be answered by Congress on the basis of current empirical data not equally available to this tribunal.
>
> It is our duty to construe the patent statutes as they now read, in light of our prior precedents, and we must proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress.[76]

Only three years after *Flook*, the Supreme Court issued a 5-4 decision that appears to conflict with *Flook*. The opinion of the Court in *Diamond v. Diehr*[77] was written by Justice Rehnquist,

[71] *Id.* at 586.

[72] *Id.* at 590.

[73] *Id.* at 594.

[74] *Id.*

[75] *Id.* at 595 n.18.

[76] *Id.* at 595.

[77] 450 U.S. 175 (1981).

who had dissented in *Flook*.[78] The *Diehr* Court upheld the patentability of a computer program-controlled process for producing cured synthetic rubber products, stating:

> [A] physical and chemical process for molding precision synthetic rubber products falls within the § 101 categories of possibly patentable subject matter. That respondents' claims involve the transformation of an article, in this case raw, uncured synthetic rubber, into a different state or thing cannot be disputed. The respondents' claims describe in detail a step-by-step method for accomplishing such, beginning with the loading of a mold with raw, uncured rubber and ending with the eventual opening of the press at the conclusion of the cure. Industrial processes such as this are the types which have historically been eligible to receive the protection of our patent laws.[79]

The fact that several of the process's steps involved the use of a mathematical formula and a programmed digital computer did *not* pose a barrier to patent eligibility, according to the *Diehr* Court:

> [T]he respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber. Their process admittedly employs a well-known mathematical equation, but they do not seek to pre-empt the use of that equation. Rather, they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process.[80]

Finally, the Court concluded that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer."[81]

Justice Stevens wrote a lengthy dissent in *Diehr*, joined by three other justices who were in the *Flook* majority. He noted that the *Benson* decision in 1972 had "clearly held that new mathematical procedures that can be conducted in old computers, like mental processes and abstract intellectual concepts ... are not patentable processes within the meaning of § 101."[82] In Justice Stevens' view, Diehr's patent claim concerning a method of using a computer to determine the amount of time a rubber molding press should remain closed during the synthetic rubber-curing process "is strikingly reminiscent" of the method of updating alarm limits that the Court had held unpatentable in *Flook*.[83] He argued that "[t]he broad question whether computer programs should be given patent protection involves policy considerations that this Court is not authorized to address."[84] Justice Stevens would have preferred that the Court's opinion contained the following:

> (1) an unequivocal holding that no program-related invention is a patentable process under §101 unless it makes a contribution to the art that is not dependent entirely on the utilization

[78] Justices Powell and White, after siding with Justice Stevens' in *Flook*, joined Justice Rehnquist's majority opinion in *Diehr*.

[79] *Id.* at 184.

[80] *Id.* at 187.

[81] *Id.*

[82] *Id.* at 201 (Stevens, J., dissenting) (citation omitted).

[83] *Id.* at 209.

[84] *Id.* at 217.

> of a computer, and (2) an unequivocal explanation that the term "algorithm" as used in this case, as in *Benson* and *Flook*, is synonymous with the term "computer program."[85]

The *Diehr* decision and its appellate progeny encouraged software patent applicants to follow "the doctrine of the magic words," whereby the applicant could obtain a patent on software inventions "only if the applicant recited the magic words and pretended that she was patenting something else entirely," such as hardware devices, some sort of apparatus, or other machines.[86] However, in 1994 the U.S. Court of Appeals for the Federal Circuit, which has exclusive appellate jurisdiction in patent cases,[87] did away with this charade. The Federal Circuit issued an en banc decision, *In re Alappat*, in which it concluded that "a computer operating pursuant to software may represent patentable subject matter."[88]

State Sovereign Immunity and Patent Infringement

The Patent Act grants patent holders the right to exclude others from making, using, offering for sale, or selling their patented invention throughout the United States, or importing the invention into the United States.[89] Whoever performs any one of these five acts during the term of the invention's patent, without the patent holder's authorization, is liable for infringement.[90] Defendants who may be sued for patent infringement include private individuals, companies, and also the federal government.[91]

Yet when state governments and state institutions (such as state-owned universities) infringe patents, the patent holder currently has very limited legal recourse because of the U.S. Supreme Court's jurisprudence concerning the Eleventh Amendment to the U.S. Constitution.[92] The Eleventh Amendment, with limited exceptions, bars an individual from suing a state under federal law without the state's consent. While states may consent to suit by waiving the privilege of sovereign immunity, in limited circumstances Congress may also abrogate, or overrule, that immunity by passing a statute pursuant to the enforcement power under § 5 of the Fourteenth Amendment.[93]

[85] *Id.* at 219.

[86] Cohen & Lemley, *supra* note 52, at 9.

[87] 28 U.S.C. § 1295(a)(1).

[88] 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc).

[89] 35 U.S.C. §§ 154(a)(1), 271(a).

[90] 35 U.S.C. §§ 271, 281.

[91] The "federal government" referred to in this section includes not only agencies and instrumentalities of the federal government, but also a corporation owned or controlled by the United States, or a contractor, subcontractor, or any person, firm, or corporation acting for and with the authorization or consent of the federal government. *See* 28 U.S.C. § 1498(b); 15 U.S.C. § 1114(1).

[92] For detailed information regarding this topic, *see* CRS Report RL34593, *Infringement of Intellectual Property Rights and State Sovereign Immunity*, by Brian T. Yeh.

[93] Seminole Tribe of Florida v. Florida, 517 U.S. 44 (1996).

Patent Remedy Act

Congress passed the Patent and Plant Variety Protection Remedy Clarification Act (Patent Remedy Act) in 1992.[94] The language of the statute specifically and unequivocally abrogated state sovereign immunity and subjected the states to suits for monetary damages brought by individuals for violation of federal patent law. The validity of this statute was challenged in *Florida Prepaid v. College Savings Bank*.[95]

College Savings Bank held a patent for its financing methodology, based on certificates of deposit and annuity contracts, designed to guarantee investors funds for future college expenses. The state of Florida soon adopted College Savings Bank's methodology and created the Florida Prepaid Postsecondary Education Expense Board (the Board) to issue similar financing options to its own residents. Consequently, College Savings Bank filed a claim for patent infringement against the Board under the Patent Remedy Act. The principal issue in *Florida Prepaid* was whether the Patent Remedy Act had legitimately abrogated state sovereign immunity from suit for patent infringement. College Savings Bank argued that Congress had lawfully done so pursuant to the due process clause by ensuring an individual an adequate remedy in the case of a deprivation of property perpetrated by the state in the form of patent infringement.

The district court agreed with College Savings Bank, and the Federal Circuit Court affirmed. However, the Supreme Court, in a 5-4 decision, overturned the Federal Circuit decision, holding that the PRCA was *not* a valid use of the § 5 enforcement power of the Fourteenth Amendment and therefore *not* a legitimate abrogation of state sovereign immunity.[96]

Justice Stevens filed a dissenting opinion, joined by three other justices. He first observed that the Constitution vested Congress with plenary authority over patents, and that Congress had passed laws providing federal courts with exclusive jurisdiction of patent infringement litigation.[97] He noted that there is "a strong federal interest in an interpretation of the patent statutes that is ... uniform," and that such federal interest is "threatened ... by inadequate protection for patentees."[98] In Justice Stevens' view, it was "appropriate for Congress to abrogate state sovereign immunity in patent infringement cases in order to close a potential loophole in the uniform federal scheme, which, if undermined, would necessarily decrease the efficacy of the process afforded to patent holders."[99] He believed that the Patent Remedy Act was a proper exercise of Congress's power under §5 of the Fourteenth Amendment to prevent state deprivations of property without due process of law.[100] Supporting the concern for potential due process violations, he referred to the legislative history of the Patent Remedy Act that included congressional findings that state remedies would be insufficient to compensate inventors whose patents had been infringed, and also that state infringement of patents was likely to increase.[101] Justice Stevens argued that the Patent Remedy Act "merely puts" states in the same position as

[94] P.L. 102-560, 106 Stat. 4230 (1992) (codified at 35 U.S.C. §§ 271(h), 296(a)).

[95] 527 U.S. 627 (1999).

[96] *Id.* at 647.

[97] *Id.* at 648 (Stevens, J., dissenting).

[98] *Id.* at 650.

[99] *Id.* at 652.

[100] *Id.* at 649.

[101] *Id.* at 656.

the federal government and private users of the patent system when it comes to the possibility of being held accountable for patent infringement.[102]

At the conclusion of his dissent, Justice Stevens criticized the majority opinion's "aggressive sovereign immunity jurisprudence" that "demonstrates itself to be the champion of States' rights."[103]

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[102] *Id.* at 663.

[103] *Id.* at 664.