No. 08-964

In The
Supreme Court of the United States

BERNARD L. BILSKI and RAND A. WARSAW,

Petitioners,

v.

JOHN DOLL, Acting Under Secretary of Commerce for Intellectual Property and Acting Director, Patent and Trademark Office,

Respondent.

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

BRIEF OF *AMICUS CURIAE* LAW PROFESSOR KEVIN EMERSON COLLINS IN SUPPORT OF NEITHER PARTY

KEVIN EMERSON COLLINS
INDIANA UNIVERSITY
MAURER SCHOOL OF LAW – BLOOMINGTON
211 S. Indiana Avenue
Bloomington, IN 47405
(812) 856-1841

August 6, 2009

COCKLE LAW BRIEF PRINTING CO. (800) 225-6964
OR CALL COLLECT (402) 342-2831

TABLE OF CONTENTS

TABLE OF CONTENTS – Continued

TABLE OF AUTHORITIES

Page

SUPREME COURT CASES:

TABLE OF AUTHORITIES – Continued

TABLE OF AUTHORITIES – Continued

TABLE OF AUTHORITIES – Continued

Page

CONSTITUTION AND STATUTES:

OTHER:

TABLE OF AUTHORITIES – Continued

INTEREST OF THE *AMICUS CURIAE*[1]

Amicus Curiae Kevin Emerson Collins teaches patent law and intellectual property law in the United States, and he has written extensively on the doctrine of patent eligibility. He has no financial interest in the outcome of this case. He is interested in the application of the patent statutes in a manner that most effectively promotes innovation and most accurately reflects the intent of Congress.

SUMMARY OF THE ARGUMENT

The doctrine of patent eligibility, lodged in 35 U.S.C. § 101 (2006), should forbid the issuance of a patent claim whenever the advance over the prior art resides entirely in the human mind. A claim should not be eligible for patent protection if the advance resides solely in mental states or processes, even if they are useful, novel, and nonobvious and even if the claim as a whole recites prior-art, extra-mental technologies as well.

A bar on any claim in which the advance resides solely in a mental process is a refinement of the historical mental steps doctrine, which the Court of

[1] No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *amicus curiae* made a monetary contribution to its preparation or submission.

Customs and Patent Appeals (CCPA) erroneously abandoned, and the printed matter doctrine, which the Court of Appeals for the Federal Circuit unfortunately treats as an afterthought in its section 101 jurisprudence. The decline of these doctrines follows from the conventional wisdom that they are not supported by the Patent Act. This conventional wisdom is inaccurate. An interpretation of section 101 that looks to the structure of the Patent Act as a whole, and its disclosure provisions in particular, demonstrates that Congress did intend to bar claims from the patent regime when the advance resides solely in a mental process. Such a bar is necessary to enforce patentees' disclosure obligations. But for the mental steps and printed matter doctrines, patentees could privatize acts of thinking about the very newly discovered information that they are required to publicize in their specifications.

The mental steps and printed matter doctrines employ a "point of novelty" or "patentable weight" analysis. *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (printed matter); *In re Abrams*, 188 F.2d 165, 166 (C.C.P.A. 1951) (mental steps). This approach concededly diverges from the claim as a whole analysis employed in *Diamond v. Diehr*, 450 U.S. 175 (1981). Nonetheless, the mental steps and printed matter doctrines are entirely consistent with this Court's precedents on section 101. This Court's precedents address only claims implicating newly discovered laws of nature. *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (en banc), presents this Court with a

case of first impression concerning claims describing mental processes.

This brief urges this Court to shore up the foundations of the doctrine of patent eligibility. It takes no position on either the machine-or-transformation test as a necessary condition for patent eligibility or any other restriction on patent eligibility that can be layered on top of a mental-process foundation. The mental steps and printed matter doctrines establish a basic, intuitive, and administrable limit on the reach of patent protection. A bar on claims when the advance resides solely in a mental process should be the cornerstone of patent eligibility, not a historical anomaly or inconsequential afterthought.

Bilski presents an excellent vehicle for this Court to engage in this foundational work. In *Bilski*, the Federal Circuit puts forward a sweeping reformulation of the doctrine of patent eligibility, announcing the machine-or-transformation test as a sufficient or "sole" test for patent eligibility. *Id.* at 955-56. The Federal Circuit errs in *Bilski* because the machine-or-transformation test improperly sanctions patent protection for mental-process inventions when claims recite prior-art, extra-mental steps that require a particular machine or transform an article to a different state or thing.

ARGUMENT

I. The Patent Act Supports a Bar on Patent Claims When the Advance Resides Solely in a Mental Process

A bar on patent claims when the only advance over the prior art resides in a mental process is easily defended as a matter of economic patent policy. Newly invented "mental processes" are frequently "the basic tools of technological and scientific work." *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972). The costs of slower future innovation that follow from allowing private rights to govern basic tools are likely to outweigh whatever incentives to produce basic tools patent protection might provide. *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124, 126-27 (2006) (Breyer, J., dissenting from the dismissal of the writ of certiorari as improvidently granted) (discussing the costs attendant to treating basic tools as property); Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 Colum. L. Rev. 257, 279-82 (2007) (discussing the costs of subjecting the inputs of productive processes to private property).

However, a bar on patent claims when the advance resides solely in a mental process is more than good patent policy. It is mandated by an interpretation of section 101 in light of the Patent Act as a whole and its disclosure provisions in particular. Importantly, this argument cuts across the grain of conventional wisdom about the mental steps and printed matter doctrines. One reason why these doctrines have failed to take root in the lower courts

is an erroneous belief that they are not anchored in the Patent Act. *In re Musgrave*, 431 F.2d 882, 890 (C.C.P.A. 1970) (mental steps); *Gulack*, 703 F.2d at 1385 n.8 (printed matter).

A. Section 101 Must Be Construed in Light of the Statutory Disclosure Provisions

The interpretation of section 101 discussed here differs from this Court's previous interpretations of section 101 in that it relies heavily on the canon of structural statutory interpretation. The plain meaning of a statute must be determined not by examining the statute in isolation but also by viewing a statute in light of "the structure and purpose of the Act in which it occurs." *New York State Conf. of Blue Cross & Blue Shield Plans*, 514 U.S. 645, 655 (1995).

This Court has repeatedly recognized the importance of patent law's disclosure provisions in the structure of the patent regime as a whole. 35 U.S.C. §§ 112, 122(b) (2006) (codifying the disclosure requirements). Patent protection is a "bargain" in which inventors and the public exchange valuable rights. *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150-51 (1989). The public grants an inventor limited rights to exclude from the claimed embodiments of an invention, and, as "*quid pro quo* of the right to exclude," the inventor discloses newly discovered information that she otherwise could have

kept secret. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 484 (1974); *see also J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124, 142 (2001); *Bonito Boats*, 489 U.S. at 150-51. One function of the disclosure is to encourage the public to use the disclosed knowledge to design around the patent and advance the art, even during the term of the patent. "When a patent is granted and the information contained in it is circulated to the general public and those especially skilled in the trade, such additions to the general store of knowledge . . . stimulate ideas and the eventual development of further significant advances in the art." *Kewanee Oil*, 416 U.S. at 481; *see also* Donald S. Chisum, *Chisum on Patents* § 7.01 (2009) ("[O]n issuance [] the patent immediately increases the storehouse of public information available for further research and innovation.").[2] The patentee's obligation to disclose information and make it free for all comers to use as information from the moment of publication is an obligation that runs against the inventor's self interest. Unlike in copyright law, "immediate disclosure" is a "price" that "is *exacted from*" the patentee in return for patent protection. *Eldred v. Ashcroft*, 537 U.S. 186, 216 (2003). In sum, the Patent Act is not only about rights to exclude. At a deep structural level, it is premised on a "duality of claiming and disclosing." Graeme B.

[2] A distinct function of the disclosure is to ensure that the public can practice the claimed invention after a patent expires. *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 247 (1832).

Dinwoodie & Rochelle Cooper Dreyfuss, *Patenting Science: Protecting the Domain of Accessible Knowledge*, *in The Future of the Public Domain: Identifying the Commons in Information Law* 191, 193 n.4 (2006). Each side of the duality promotes the "Progress of . . . useful Arts" through a different mechanism. U.S. Const. art. I, § 8, cl. 8. Claims create rights to exclude that provide an incentive for self-interested individuals to invest time and money in the inventive process. Disclosures create an immediately available public domain of newly discovered information and knowledge that greases the wheels of future progress.

Section 101 states that a "process, machine, manufacture, or composition of matter" may be patented. 35 U.S.C. § 101 (2006). An interpretation of section 101 in light of patent law's disclosure provisions demonstrates that Congress did not intend for newly discovered mental processes to be statutory subject matter. Patent claims in which the advance resides solely in a mental process are by definition inventions only because they include acts of thinking about the newly discovered information disclosed in a patent specification. Simply put, such claims describe the public's use of the disclosure as knowledge. Congress, however, intended specifications to contribute to "the general store of knowledge" and remain beyond patentees' private control. *Kewanee Oil*, 416 U.S. at 481. By negative implication, Congress therefore could not have intended to sanction patent claims in which the advance resides solely in an act of thinking about the information disclosed in a

specification. By erecting a bar on claims when an advance resides solely in a mental process, the mental steps and printed matter doctrines enforce patentees' statutory disclosure obligations and protect the public's side of the patent bargain. If claims to newly invented mental processes were to recite patent-eligible inventions, the disclosure side of the duality of claiming and disclosing would be fatally undermined. Disclosures would not be "exacted from" patentees. *Eldred*, 537 U.S. at 216. Patentees would be able to attain the absurd result of privatizing the value of the disclosed knowledge that the patent-law bargain requires them to publicize. *Clinton v. City of New York*, 524 U.S. 417, 429 (1998) (interpreting a statute to avoid an absurd result). When construed in light of the disclosure provisions, the term "process" in section 101 does not encompass claims in which the advance resides solely in a mental process, and the terms "manufacture" and "machine" do not encompass claims in which the advance resides entirely in the intelligibility of printed matter to the human mind.

Patent law's other validity doctrines do not serve this important structural role. Even standing alone, newly invented mental processes will frequently be useful, novel, nonobvious, and sufficiently described. 35 U.S.C. §§ 101, 102, 103, 112 (2006) (codifying the utility, novelty, nonobviousness and sufficient-description doctrines). If claims in which the advance resides solely in a mental process are to remain beyond the reach of patent protection, it is the section

101 doctrine of patent eligibility that must do the work.

B. The 1952 Patent Act Approved of the Mental Steps and Printed Matter Doctrines

The 1952 Patent Act supports an interpretation of section 101 under which the advance over the prior art cannot reside in a newly invented mental process. Section 101 should not categorically exclude technologies that were unforeseen in 1952 because "Congress intended statutory subject matter to 'include anything under the sun that is made by man.'" *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. Rep. No. 82-1979, at 5 (1952); H. R. Rep. No. 82-1923, 82d Cong., at 6 (1952)). Mental processes, however, are not unforeseen, post-1952 developments. Lower courts had considered and rejected the patentability of mental processes prior to the passage of the Patent Act: cases adopting both the mental steps and printed matter doctrines had already been decided and remained valid in 1952. *See, e.g.*, *In re Shao Wen Yuan*, 188 F.2d 377 (C.C.P.A. 1951) (mental steps); *Abrams*, 188 F.2d at 166 (same); *In re Russell*, 42 F.2d 668 (C.C.P.A. 1931) (printed matter); *U.S. Credit Sys. Co. v. Am. Credit Indem. Co.*, 59 F. 139, 143 (2d Cir. 1893) (same). "When Congress approved the addition of the term 'process' to the categories of patentable subject matter in 1952, it incorporated the definition of 'process' that had evolved in the courts." *In re Schrader*, 22 F.3d 290,

295 (Fed. Cir. 1994). "Analysis of the eligibility of a claim of patent protection for a 'process' did not change with the addition of that term to § 101." *Diehr*, 450 U.S. at 184. When Congress intended to change the judicial precedent prior to 1952 on patent eligibility, it did so expressly. For example, Congress altered the scope of statutory processes by expressly specifying that new uses for known compositions of matter are patent eligible. *Compare* 35 U.S.C. § 100(b) (2006), *with Old Town Ribbon & Carbon Co. v. Columbia Ribbon & Carbon Mfg. Co.*, 159 F.2d 379, 382 (2d Cir. 1947). Congress thus approved of the mental steps doctrine as a limit on the definition of a statutory "process" when it enacted the 1952 Patent Act without mentioning the mental steps doctrine, and it approved of the printed matter doctrine as a limit on the definition of a statutory "machine" or "manufacture" as well.

C. Serious First Amendment Problems Require a Narrow Construction of Section 101

The First Amendment protects not only freedom of speech but also freedom of thought. *Wooley v. Maynard*, 430 U.S. 705, 714 (1976) ("freedom of thought"); *Thomas v. Collins*, 323 U.S. 516, 531 (1945) ("freedom of mind"). Neither this Court nor any lower court has directly addressed whether a patent claim that grants a private citizen a right to exclude others from expressing or thinking about newly discovered, publicly accessible information

runs afoul of the First Amendment. *But cf. Bilski*, 545 F.3d at 1008 (Mayer, J., dissenting) ("By adopting overly expansive standards for patentability, the government enables private parties to impose broad and unwarranted burdens on speech and the free flow of ideas."). In the course of overruling the mental steps doctrine, the CCPA acknowledged, but never resolved, the First Amendment issue. *In re Prater*, 415 F.2d 1393, 1400 n.20 (C.C.P.A. 1969).

It is in part because the idea/expression dichotomy prevents copyrights from encompassing ideas that the copyright laws do not routinely run afoul of the First Amendment. *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 556 (1985). Without the mental steps and printed matter doctrines, patent law has no similar provision to head off a looming conflict with First Amendment rights.

Given the serious constitutional problems raised by patent claims in which the advance resides solely in a mental process, this Court should embrace the structural interpretation of section 101 discussed above in Section I.A that avoids the problems. *Edward J. DeBartolo Corp. v. Florida Gulf Coast Bldg. & Constr. Trades Council*, 485 U.S. 568, 575 (1988) ("[W]here an otherwise acceptable construction of a statute would raise serious constitutional problems, the Court will construe the statute to avoid such problems unless such construction is plainly contrary to the intent of Congress.").

II. The Mental Steps and Printed Matter Doctrines Are Both Administrable and Rooted in Historical Patent Practice

A bar on patent claims when the advance resides solely in a mental process is an administrable rule with strong roots in twentieth century patent practice. It is simply a refinement of the historical mental steps doctrine as articulated in *In re Abrams*, 188 F.2d 165 (C.C.P.A. 1951), and the contemporary printed matter doctrine.

A. The Historical Mental Steps Doctrine Restricted the Patent Eligibility of Method Claims

The historical mental steps doctrine prevented the issuance of any method claim in which the advance resided in a mental process. For example, the CCPA in *Abrams* applied the following rule to determine the patentability of a claim reciting a mental process under section 101:

> If a method claim embodies both positive and physical steps as well as so-called mental steps, yet the alleged novelty or advance over the art resides in one or more of the so-called mental steps, then the claim is considered unpatentable. . . .[3]

---

[3] This is only rule two of what became known as the three rules of *Abrams*. *Abrams*, 188 F.2d at 166. The CCPA subsequently characterized the discussion of the three rules in

(Continued on following page)

188 F.2d at 166; *see also In re Shao Wen Yuan*, 188 F.2d 377 (C.C.P.A. 1951). A court applying the mental steps doctrine as articulated in *Abrams* must divide a method claim into mental and extra-mental steps. If the extra-mental steps of a claim describe a novel, nonobvious, and useful invention, the claim is patent eligible even if it also recites mental steps. Here, any mental steps are harmless to the public's interests. They simply limit the scope of an otherwise valid claim. However, if the advance over the prior art resides solely in the mental steps, the claim is not eligible for patent protection under section 101. Here, the inventor has invented only the act of thinking about the newly discovered information revealed in the patent specification.[4] In the common parlance of patent law, *Abrams* employs a "point of novelty" analysis. *Musgrave*, 431 F.2d at 889.

Abrams as mere dicta intended to demonstrate that "even if, arguendo, the court had adopted [the rules], [the patent applicant] would still not have prevailed. . . ." *In re Prater*, 415 F.2d 1378, 1386 (C.C.P.A. 1968), *modified on rehearing*, 415 F.2d 1393 (C.C.P.A. 1969). However, it is difficult to read *Abrams* as not relying on rule two.

[4] Combination arguments must be carefully scrutinized so that they do not allow an end-run around the limits on patent eligibility imposed by the mental steps doctrine. For example, assume that a method claim in a patent application recites steps A and B, that A alone is a prior-art, extra-mental step, and that B alone is a novel mental step. The applicant may argue that it is the combination of A and B, not simply B, that is novel. To protect the public's interest in the public domain of the disclosure, this type of combination argument must not succeed.

Two decades after *Abrams*, a panel of the CCPA abandoned the mental steps doctrine in *In re Musgrave*, 431 F.2d 882, 889-93 (C.C.P.A. 1970). *Musgrave* replaced the mental steps doctrine with the technological arts test for patent eligibility. *Id.* Oddly, the Federal Circuit has since abandoned the technological arts test established in *Musgrave*, *Bilski*, 545 F.3d at 960, but it has not revisited *Musgrave* insofar as *Musgrave* overrules the mental steps doctrine.

If the section 101 doctrine of patent eligibility is to protect the public's side of the disclosure bargain, this Court must overrule *Musgrave* insofar as it stands broadly for the abandonment of the mental steps doctrine.[5] Disclosures must be additions to "the general store of knowledge" and must be free for all to use as knowledge from the moment they are published. *Kewanee Oil*, 416 U.S. at 481. An inventive mental step is by definition nothing more than the human act of thinking about the information disclosed in a patent specification. If inventors could patent inventive mental steps, they could shirk their

[5] *Musgrave* and other cases of its era were fundamentally about the patentability of claims to programmed computers and computer-executed processes. Insofar as *Musgrave* stands narrowly for the principle that steps limited to computer-executed processes are not *per se* mental steps, its holding is unobjectionable. *Cf. In re Benson*, 441 F.2d 682 (C.C.P.A. 1971), *rev'd on other grounds*, 409 U.S. 64 (1972) (upholding a claim under the mental steps doctrine because it was limited in scope to computer-execution of the claimed mathematical processes).

disclosure obligations: they could reveal information to the public but privatize its value by charging a fee for the public to think about it.

A structural theory of patent eligibility mandates the adoption of the mental steps doctrine and its point of novelty approach, not a narrow, formalistic bar on claims in which all steps can be performed in the human mind. *Cf. In re Comiskey*, 554 F.3d 967, 977-80 (Fed. Cir. 2009) (acknowledging that entirely mental claims are not patentable subject matter). A patent claim that describes a prior-art, extra-mental technology in conjunction with a newly invented mental process and a patent claim that describes only the newly invented mental process are equally detrimental to the public's ability to think freely about the information disclosed in a patent specification. Patent rights cannot interfere with the public's right to practice the unpatented prior art. Under the Copyright and Patent Clause of the Constitution, "Congress may not authorize the issuance of patents whose effects are . . . to restrict free access to materials already available." *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966). The doctrine of patent eligibility must therefore invalidate claims that privatize the public's ability to think about the information disclosed in the patent specification, even when that thinking occurs in conjunction with the use of a prior-art technology. To protect the public's side of the statutory disclosure bargain, section 101 must restrict patent eligibility whenever the point of novelty of the claimed method resides in the human

mind, even if the method recites prior-art, extra-mental steps as well.

Understanding the role of mental steps doctrine in protecting the public's side of the disclosure bargain also points the way to a more precise definition of mental step. One concern expressed by the CCPA in *Musgrave* was that an overly broad definition of a mental step could encompass any step that requires brain activity. *Musgrave*, 431 F.2d at 889-93; *cf. Lab. Corp.*, 548 U.S. at 134 (Breyer, J., dissenting from the dismissal of the writ of certiorari as improvidently granted) (implying that it is difficult to administer a "mental processes" limitation on patentable subject matter because "all conscious human action involves a mental process"). To implement a structural theory of patent eligibility and protect the public domain of knowledge created by the disclosure, the mental steps that are of concern under the mental steps doctrine should be limited to steps that occur entirely within the human mind. Mental steps should encompass only the human acts of reasoning and understanding that are necessary to the public's use of the "general store of knowledge" as knowledge that patent disclosures are supposed to support. *Kewanee Oil*, 416 U.S. at 481. Most significantly, steps reciting physical human interaction with the world outside of the mind, such as bodily motion (e.g., "pulling said lever" or "mixing chemicals A and B"), should not sound alarm bells

under the mental steps doctrine.[6] *Cf. Ex parte McNabb*, 127 U.S.P.Q. 456, 457-58 (Pat. Off. Bd. App. 1959) (declining to treat the brain activity required for motor control as a mental step).

However, if a step in a method claim is broad enough to encompass purely mental reasoning, the step must be labeled a mental step even if it encompasses extra-mental processes as well. A broad claim encompassing both mental and extra-mental performance of a method is equally detrimental to the public domain of the disclosure as a narrow claim encompassing only mental performance of the method. Confusion on this point unfortunately contributed to the lack of clarity in the historical mental steps doctrine and its abandonment by the CCPA. *Musgrave*, 431 F.2d at 889-90 n.4.

B. The Contemporary Printed Matter Doctrine Restricts the Patent Eligibility of Manufacture and Machine Claims

Although it is not always recognized as having this effect, the printed matter doctrine prevents patent protection for machines and manufactures

[6] Methods that simply add the verbal expression or tangible recording of the result of a mental process as a claim limitation are not eligible for patent protection under a combination of the mental steps and printed matter doctrines. Therefore, claims to thought and speech should usually be treated just like claims to thought. *But cf. infra* note 17.

from extending into the human mind. It bars the patenting of "claims defining as the invention certain novel arrangements of printed lines or characters, useful and intelligible only to the human mind." *In re Lowry*, 32 F.3d 1579, 1583 (Fed. Cir. 1994) (quoting *In re Bernhart*, 417 F.2d 1395, 1399 (C.C.P.A. 1969)). Inversely, "the printed matter cases have no factual relevance where 'the invention as defined by the claims *requires* that the information be processed not by the mind but by a machine, the computer.'" *Id.* In sum, machines and manufactures that are different from the prior art only because they mean something new to a human mind – i.e., only because of the mental processes that the mind performs when it attributes meanings to them – are not eligible for patent protection.[7]

[7] The default rule of the printed matter doctrine is sometimes described as barring the patenting of "information recorded in [a] substrate or medium" when it is the "content of the information" that is the invention. Chisum, *supra* at § 1.02[4]. This information-centric formulation of the printed matter doctrine is misleading. Many things are readily viewed as information and yet are patentable under the printed matter doctrine because they interface with devices and organisms through mechanical processes and the locus of the invention is therefore not in their comprehension by a human mind. *In re Fisher*, 421 F.3d 1365 (Fed. Cir. 2005) (addressing the patentability of DNA under the utility doctrine, not the doctrine of patent eligibility); *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995) (acquiescing to the PTO's decision that software-on-disk claims can be eligible for patent protection under section 101).

The printed matter doctrine employs a "patentable weight" analysis: the novelty and nonobviousness of the meaning that a worldly thing triggers in a human mind gets no weight in the determination of whether the claim is a patentable advance over the prior art.[8] *In re Miller*, 418 F.2d 1392, 1395-96 (C.C.P.A. 1969); *Gulack*, 703 F.2d at 1385. For example, in *In re Ngai*, 367 F.3d 1336, 1338-39 (Fed. Cir. 2004) (*per curiam*), the Federal Circuit held that "the *content* of the instructions" on how to use chemicals in a kit could not make the kit novel in relation to the prior art. It reaffirmed the rule that "the printed matter will not distinguish the invention from the prior art in terms of patentability." *Id.* at 1339 (quoting *Gulack*, 703 F.2d at 1385); *see also King Pharms., Inc. v. Eon Labs, Inc.*, 593 F.Supp.2d 501, 514 (E.D.N.Y. 2009) (invalidating method claims in which the advance resided in the placement of a printed label advertising the metabolic effect of a chemical). The patentable weight analysis of the printed matter doctrine mirrors the point of novelty analysis of the mental steps doctrine. Patentees can recite mental processes in method claims, but the

[8] The printed matter doctrine is commonly described as having an "exception" under which printed matter can be given patentable weight if the printed matter is functionally related to the substrate. *Gulack*, 703 F.2d at 1385; *Cincinnati Traction Co. v. Pope*, 210 F. 443, 446-47 (6th Cir. 1913). The functional-relation "exception" is not an exception: it simply captures one subset of cases in which the invention does not reside in the novelty and nonobviousness of the meaning that a human mind attributes to the printed matter.

locus of the invention cannot reside in a mental process. Similarly, patentees can recite printed matter as a limitation on a claim to manufacture or machine, but they cannot justify the patentability of the claim with reference to the inventive nature of the meaning that the printed matter has to a human mind.[9]

The limit on patent eligibility established by the printed matter doctrine is necessary to protect the disclosure side of the duality of claiming and disclosing on which the patent regime is premised. To protect the "general store of knowledge" created by disclosures from overreaching claims, *Kewanee Oil*, 416 U.S. at 481, the printed matter doctrine must prevent inventors from relying on the informational content of human-readable symbols to prove that a manufacture or machine represents an advance over the prior art. But for the printed matter doctrine, patentees could literally patent their disclosures: they could exclude the public from printed copies of their patent specifications. Furthermore, the patentable weight analysis of the printed matter doctrine is essential if the printed matter doctrine is to serve as this function. It is not enough to prevent the

[9] The patentable weight analysis of the printed matter doctrine was initially created by analogy to the point of novelty analysis of the mental steps doctrine. *Ex parte Jenny*, 130 U.S.P.Q. 318, 320 (Pat. Off. Bd. App. 1960). Today, ironically, the printed matter doctrine and its patentable weight analysis continue to limp along but the mental steps doctrine and its point of novelty analysis have been abandoned.

patenting of claims describing printed matter in isolation.

The statutory locus of the printed matter doctrine has become highly unstable. Historically, the printed matter doctrine was lodged exclusively in Section 101. *Russell*, 42 F.2d at 669. Today, the Federal Circuit applies the printed matter doctrine as a facet of the novelty doctrine of section 102 or the nonobviousness doctrine of section 103 when a claim describes printed matter in conjunction with things that are conventionally eligible for patent protection under section 101. *Ngai*, 367 F.3d at 1338-39 (a kit of chemicals plus instructions); *Gulack*, 703 F.2d at 1384-87 (writing on a circular band). Yet, in cases in which the claim describes printed matter *per se*, the Federal Circuit and the PTO continue to apply the printed matter doctrine as a component of the section 101 patent-eligibility analysis. *In re Ockman*, 833 F.2d 1023 (Fed. Cir. 1987) (unpublished opinion); *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, 1300 OG 142 (Nov. 22, 2005) (stating that "nonfunctional descriptive material" is not statutory subject matter under section 101, even when it is recorded on a computer-readable medium). This awkward straddling of distinct statutory provisions is pointless. *Cf. In re Nuijten*, 500 F.3d 1346, 1366 (Fed. Cir. 2007) (Linn, J., concurring-in-part and dissenting-in-part) ("As a doctrinal matter, the PTO [when it applies the printed matter doctrine] should not look to § 101 sometimes and § 103 at other times to accomplish

essentially the same end."). It is a byproduct of the lower courts' neglect of the printed matter doctrine.

C. The Mental Steps and Printed Matter Doctrines Are Two Sides of the Same Coin

Today, the Federal Circuit continues to apply the printed matter doctrine, but not the mental steps doctrine. This status quo is highly suspect as the mental steps and printed matter doctrines are two sides of the same coin: they both address the eligibility of mental processes for patent protection. It makes no sense to disregard the inventiveness of printed symbols when the advance resides entirely in their intelligibility to the human mind, yet to credit the inventiveness of the mental processes that are premised on human comprehension of that very printed matter. The two doctrines should rise and fall together. Patent eligibility should be uniformly construed so that the knowledge disclosed to the public in the patent specification cannot distinguish a claim from the prior art, whether the claim describes the knowledge directly in its mental form or indirectly in the form of signs that are semiotically meaningful to the human mind.

III. The Claim as a Whole Approach to Patent Eligibility Articulated in *Diehr* Does Not Apply to Claims to Mental Processes

In *Diehr*, this Court established a claim "as a whole" approach to patent eligibility for claims to programmed computers executing mathematical algorithms. *Diehr*, 450 U.S. at 192. At first glance, the claim as a whole approach articulated in *Diehr* may appear to pose an obstacle to the adoption of a bar on claims when the advance resides solely in a mental process. The point of novelty analysis of the mental steps doctrine and the patentable weight analysis of the printed matter doctrine require courts to, first, identify the mental processes described by a claim and, second, invalidate any claim in which the advance over the prior art resides solely in a mental process. In contrast, *Diehr* warns against performing a section 101 analysis by dividing a claimed method into its discrete steps, assuming that any step that recites a computer executing a mathematical algorithm is part of the prior art, and querying whether the remaining steps represent a patentable advance over the prior art. *Id.* at 188-91.[10] In *Bilski*, the Federal Circuit interpreted this Court's precedents on

[10] Some language in *Parker v. Flook*, 437 U.S. 584, 594 (1978), suggests that the claim as a whole and point of novelty approaches are compatible: "Respondent's process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention."

section 101 to mandate a blanket application of claim as a whole approach to questions of patent eligibility, leaving no space for the mental steps and printed matter doctrines.[11] *Bilski*, 545 F.3d at 958-59.

Contrary to the Federal Circuit's analysis in *Bilski*, *Diehr* does not preclude the adoption of the mental steps and printed matter doctrines. In *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972), this Court discussed three conceptually distinct categories of phenomena that are not eligible for patent protection: "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts." This Court's trilogy of cases addressing the eligibility of computer software for patent protection – *Benson*, *Parker v. Flook*, 437 U.S. 584 (1978), and *Diehr* – all dealt with claims to newly discovered phenomena of nature.[12] Not one of them addressed a

---

[11] *Bilski* addressed the statutory definition of a section 101 "process." *Bilski*, 545 F.3d at 951. It is therefore possible that the Federal Circuit did not intend for *Bilski*'s broad interpretation of the claim as a whole test for patent eligibility to affect the printed matter doctrine. However, section 101 does not recognize formalistic distinctions between product and process claims. *Benson*, 409 U.S. at 67-68. Furthermore, the printed matter doctrine does affect the scope of method claims that recite steps such as "reading printed matter" or "applying printed matter as a label." *Cf. King Pharms.*, 593 F.Supp.2d at 514 (invalidating method claims in which the advance resided in the placement of a printed label advertising the newly discovered metabolic effect of a chemical).

[12] Phenomena of nature are alternatively referred to in part or in whole as "principles of nature," *Diehr*, 450 U.S. at 189 n.12, "natural phenomena," "laws of nature," and "scientific

(Continued on following page)

claim to a mental process performed by a human mind. The claim as a whole approach developed in these cases and articulated in *Diehr* therefore governs the patent eligibility of natural phenomena but not mental processes.

Phenomena of nature and mental processes are distinct limits on the reach of patentable subject matter. *Cf. Bilski*, 545 F.3d at 952 (querying whether a claim describes either "a fundamental principle . . . or a mental process"). Phenomena of nature are "relationships that have always existed." *Flook*, 437 U.S. at 593 & n.15. They are "manifestations . . . of nature" simply discovered by humans, not invented by them. *Chakrabarty*, 447 U.S. at 309 (quoting *Funk Bros. Seed Co. v. Kalo Co.*, 333 U.S. 127, 130 (1948). Newton's law of gravity and Einstein's theory of relativity are canonical examples of laws of nature: they governed the physical workings of the world long before Newton and Einstein discovered them. *Chakrabarty*, 447 U.S. at 309. In contrast, mental processes are not simply discovered. They are products of human ingenuity: when someone performs a new act of thinking, she is not merely performing a process that has always been performed in nature. The things about which humans think may be natural phenomena or laws of nature. For example, mental processes based on Einstein's theory

---

principles," *Flook*, 437 U.S. at 593 & n.15. This brief uses these terms interchangeably.

of relativity or Newton's law of gravity are clearly thoughts about laws of nature.[13] However, mental processes may also pertain to relationships other than laws of nature, such as the properties of a human-made chemical compound or a social convention that describes human interaction in civil society.[14] Inversely, many claims that implicate newly discovered laws of nature do not describe mental processes. *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U.S. 86, 94-95 (1939) (holding a claim to an antenna patentable); *Funk Bros.*, 333 U.S. at 130 (holding a claim to a combination of bacteria unpatentable).

---

[13] When mental processes are thoughts about laws of nature, the section 101 doctrines applicable to both laws of nature and mental processes limit the scope of patent-eligible subject matter. However, because the mental steps and printed matter doctrines are the more restrictive of the doctrines, they will usually be dispositive at the margin.

[14] One reason to recognize a distinction between the section 101 doctrine that applies to principles of nature and the section 101 doctrine that applies to mental processes is that mental processes about principles of nature and mental processes about man-made or social phenomena should receive identical treatment. A structural theory of patent eligibility holds that thought about the information revealed in a patent specification is not statutory subject matter. Under such a theory, new and useful acts of thinking about the properties of newly discovered natural chemicals and newly discovered man-made chemicals are treated identically. *But see Prometheus Laboratories, Inc. v. Mayo Collaborative Services*, 2008 WL 878910, at *6-*9 (S.D. Cal. Mar. 28, 2008) (invalidating a claim reciting an inventive mental step under section 101 only because the claimed thought employed a "natural" correlation).

The mathematical algorithms or formulae at issue in *Flook* and *Diehr* are laws of nature or their equivalents, so *Flook* and *Diehr* clearly govern the eligibility of laws of nature for patent protection.[15] *Diehr*, 450 U.S. at 187, 191; *Flook*, 437 U.S. at 590. However, none of the claims at issue in *Benson*, *Flook* and *Diehr* encompassed mental processes in any meaningful way. At least some of the claims in *Benson* could in theory "be performed without a computer," *Benson*, 409 U.S. at 67, but they "had no substantial practical application except in connection with a digital computer." *Id.* at 71. In *Flook*, this Court noted that, "[a]lthough the [claimed] computations can be made by pencil and paper calculations, the abstract of disclosure makes it clear that the formula is primarily useful for computerized calculations producing automatic adjustments in alarm settings." *Flook*, 437 U.S. at 586. In *Diehr*, this Court granted certiorari only "to determine whether a process for curing synthetic rubber which includes in several of its steps the use of a mathematical formula and a programmed digital computer is patentable subject matter under 35 U.S.C. § 101." *Diehr*, 450 U.S. at 177. Furthermore, neither *Flook* nor *Diehr* even mentions "mental processes" as unpatentable subject matter. The claim as a whole approach to patent eligibility articulated in *Diehr* need not govern claims describing mental processes. *Bilski* presents

[15] In *Benson*, this Court referred to the mathematical algorithm as an "idea." *Benson*, 409 U.S. at 72.

this Court with a case of first impression concerning the eligibility of mental processes for patent protection.

There is nothing in the statutory logic of section 101 that requires the claim as a whole approach be extended from laws of nature to mental processes. *Diehr* supports the claim as a whole approach by noting that section 101 and section 102 are distinct provisions and that the word "new" in section 101 is not the statutory locus of the novelty doctrine. *Diehr*, 450 U.S. at 189-90. Viewed in this manner, the determination of what constitutes statutory subject matter under section 101 is "wholly apart from" the determination of what constitutes a novel claim under section 102. *Id.* at 190 (quoting *In re Bergy*, 596 F.2d 952, 961 (C.C.P.A. 1979)).[16] In contrast, because the mental steps and printed matter doctrines derive from a reading of the text of section 101 in light of the structure of the Patent Act as a whole, an approach that incorporates concepts from both section 101 and sections 102 and 103 is to be expected.

Practically speaking, some variant of the claim as a whole approach to patent eligibility articulated in

[16] The CCPA supported its statement in *Bergy* with citations to a number of patent treatises. *Bergy*, 596 F.2d at 960. Some of these treatises were written during the heyday of the mental steps doctrine, suggesting that the separate and distinct nature of the statutory subject matter and novelty requirements is perfectly consistent with a point of novelty for claims describing mental processes.

Diehr may be necessary when dealing with claims that implicate newly discovered laws of nature. As *Diehr* emphasized, if a point of novelty approach were to be "carried to its extreme" and if all claimed inventions were to be reduced to their "underlying principles of nature," it would "make all inventions unpatentable because all inventions can be reduced to underlying principles of nature which, once known, make their implementation obvious." *Diehr*, 450 U.S. at 189 n.12. However, a point of novelty or patentable weight analysis for claims implicating mental processes does not undermine claims that lie at the core of traditionally patentable subject matter. Traditional claims in the chemical and biological arts often implicate principles of nature (as do more recent claims in the software arts), but they rarely encompass mental processes. The mental steps and printed matter doctrines bring point of novelty and patentable weight approaches to bear on questions of patent eligibility only in the limited situations in which they are required to protect the deep structure of the Patent Act and prevent the privatization of patent disclosures.

IV. Bilski's Claim 1 May Violate the Mental Steps Doctrine

Whether Bilski's claim 1 violates the mental steps doctrine of *Abrams* cannot be determined based on the current record. Claim 1 recites three steps: (a) "initiating" a first series of transactions with the consumers of a commodity, (b) "identifying" entities

"having a counter-risk position to said consumers," and (c) "initiating" a second series of transactions with the entities identified in step (b) to balance the risk of the first series of transactions. *Bilski*, 545 F.3d at 949. The acts of "initiating" the transactions in steps (a) and (c) are presumptively not purely mental steps. Contracts cannot be created merely by thinking; they are legally binding obligations that come into existence only through the performance of extroverted, non-cognitive conduct.[17] If Bilski can prove that the web of interpersonal legal obligations made by steps (a) and (c) is a novel and nonobvious method in and of itself, then the mental steps doctrine should not stand in the way of patent protection for Bilski's claim. However, step (b) reads on an act of human reasoning, namely "identifying" parties "having a counter-risk position to said consumers." This purely cognitive act is nothing more than the public's use of the disclosure as knowledge:

---

[17] A contract can be created through speech or written expression. In most circumstances, claims combining inventive mental thought and extra-mental speech are not eligible for patent protection under a combination of the mental steps and printed matter doctrines. However, the speech that forms a contract is an unusual type of expression because it "does" something more than simply express beliefs: it creates legal obligations. Linguists refer to this unusual type of expression as a "performative utterance." J.L. Austin, *How to Do Things with Words* 5 (2nd ed. 1975). "I do" in a marriage ceremony is an intuitive example of a performative utterance. *Id.* This brief presumes that performative utterances should be treated like conventional extra-mental actions, not like ordinary expression.

Bilski's specification provides mathematical relationships that can be used to identify these parties mentally. *Br. for Appellee Director of the United States Patent and Trademark Office* at 7-8, *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (No.2007-1130). The prior art may include a transaction in which a party performs steps (a) and (c) without realizing that the transaction hedges consumption risk. If true, Bilski's claim 1 would violate the mental steps doctrine because the mental act of "identifying" would be the sole locus of the invention in the claim. Under the patent bargain, the public should have a privilege to use the unpatented prior art while engaging in this purely mental act of thinking about the information revealed in Bilski's specification.

V. This Court Should Seize this Opportunity to Address Patent Protection for Mental Processes

In *Bilski*, the Federal Circuit announced the machine-or-transformation test for patent eligibility. 545 F.3d at 961-63. If this Court agrees with the Federal Circuit that the machine-or-transformation test establishes the outer limit of patentable subject matter, this Court may not need to reach the mental steps doctrine to determine the patent eligibility of Bilski's claim 1.[18] Nonetheless, this Court should seize

[18] This brief takes no position on whether the Federal Circuit's machine-or-transformation test states a necessary

(Continued on following page)

this opportunity to address the ineligibility of mental processes for patent protection for four reasons.

First, many of the methods excluded from patent eligibility under the machine-or-transformation test describe business methods. Many business method claims are also mental process claims, so this Court has good reason to address the two topics at the same time.

Second, the machine-or-transformation test is conceptually bankrupt when brought to bear on claims in which the advance resides solely in a mental process. With respect to process claims, the machine-or-transformation test focuses on the tangibility of the claimed process as a whole, requiring the process to be either tied to a particular (tangible) machine or responsible for transforming a (tangible) article into a different state or thing.[19] *Id.* For policy reasons, human brains will not be considered particular machines, and mental processes will not be viewed as transforming articles. Thus, the patent eligibility of a method claim reciting mental processes will turn on the tangibility

---

condition for patent eligibility. It argues only that the test is not a sufficient or "sole" condition. *Bilski*, 545 F.3d at 955-56.

[19] The machine-or-transformation test is entirely nonsensical when brought to bear on claims to manufactures that describe printed matter. A manufacture – or even printed matter *per se* – is by default tangible. *But cf. Nuijten*, 500 F.3d at 1356-57 (holding that a "signal" is insufficiently tangible to be a manufacture).

of the extra-mental steps. This result makes no sense: if the advance over the prior art is simply an act of thinking about the information disclosed in a patent specification, the tangibility of the prior art recited in the claim along with the act of thinking should be irrelevant. *Cf. Lab. Corp.*, 548 U.S. at 136 (Breyer, J., dissenting from the dismissal of the writ of certiorari as improvidently granted) ("Claim 13's process instructs the user to (1) obtain test results and (2) think about them. Why should it matter if the test results themselves were obtained through an unpatented procedure that involved the transformation of blood?").

The machine-or-transformation test may incorporate the mental steps doctrine through a back door because it allows courts to disregard "insignificant" extra-mental steps and extra-mental steps that do not impose "meaningful limits on the claim's scope." *Bilski*, 545 F.3d at 961-62. Extra-mental steps could, in theory, be *per se* insignificant whenever the advance resides solely in mental steps, but the Federal Circuit has disavowed this rule. *Id.* at 960 (noting that Federal Circuit precedent does not follow a "§ 101 test that bars any claim reciting a mental process that lacks significant 'physical steps' "). A back-door adoption of the mental steps doctrine is problematic because it sanctions a game of hide-the-ball: it focuses courts on tangibility when tangibility is not the important issue. Furthermore, the mental steps doctrine offers a bright-line rule for determining patent eligibility, whereas the identification of

insignificant extra-mental steps leads to greater uncertainty.

Third, claims that violate the mental steps doctrine are problematic because the PTO and the courts must grapple with two unique problems in order to issue and enforce them. First, if the advance over the prior art is a mental process, then the mental processes of past thinkers define the relevant prior art. The PTO or an alleged infringer must somehow look into the minds of the practitioners of the prior art to prove the invalidity of a claim reciting a cognitive operation at the point of novelty under sections 102 and 103. The compilation of a prior art of subjective acts of thinking is fraught with difficulty. The mental steps and printed matter doctrines eliminate the need to compile a prior art comprised of acts of thinking. Second, claims that violate the mental steps doctrine may frequently be performed reflexively because the public cannot willfully control what it thinks when it practices the prior art. *Lab. Corp.*, 548 U.S. at 130-31 (Breyer, J., dissenting from the dismissal of the writ of certiorari as improvidently granted) (noting that doctors "automatically" performed the mental act of correlating recited in a method claim); Kevin Emerson Collins, *Constructive Nonvolition in Patent Law and the Problem of Insufficient Thought Control*, 2007 Wisc. L. Rev. 759, 760-61 (2007) (noting that a dentist must avoid looking in patients' mouths to avoid infringement of a test-and-correlate claim based on the correlation between gum inflammation and heart disease). The

reading of a patent specification is supposed to help the reader avoid infringement, but, with respect to a claim that violates the mental steps doctrine, it may cause infringement because the reader cannot help but think about the disclosed information after having read it. The fairness of patent protection is premised on the fact that a patented invention is an option above and beyond the prior art. However, if this Court does not recognize a bar on claims when the advance resides solely in a mental process, reflexive infringement of patents claiming novel cognitive acts will take away the public's ability to practice the prior art freely.

Fourth, the eligibility of mental processes for patent protection presents an urgent concern in contemporary patent practice. The PTO and the lower courts are sorely in need of guidance.

The PTO has issued many "test-and-correlate" claims that, upon cursory examination, appear to violate the mental steps doctrine because they recite inventive mental processes and prior-art, extra-mental processes. *See, e.g.*, U.S. Pat. No. 7,504,214 (March 17, 2009) (claim 1: method of determining likelihood of cancer recurrence); U.S. Pat. No. 7,504,211 (March 17, 2009) (claim 1: method of determining the degree of resistance of a cell to a drug); U.S. Pat. No. 7,501,248 (March 10, 2009) (claim 1: method of determining treatment efficacy). The Federal Circuit is currently considering *en banc* the status of a test-and-correlate claim under section 101. *Prometheus Labs., Inc. v. Mayo Collaborative*

Servs., 2008 WL 878910 (S.D. Cal. Mar. 28, 2008). For other examples of litigated test-and-correlate claims, see *Classen Immunotherapies, Inc. v. Biogen IDEC*, 2008 WL 5273107 (Fed. Cir. Dec. 19, 2008); *King Pharms.*, 593 F.Supp.2d at 512-14; Complaint at 15, *Ass'n for Molecular Pathology v. United States Patent & Trademark Office*, No.1:09-cv-04515-RWS (S.D.N.Y. filed May 12, 2009) (challenging the validity of test-and-correlate claims involving breast cancer genes). This Court granted certiorari in order to determine the status of a test-and-correlate claim under section 101 in *Laboratory Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124 (2006), but it dismissed the writ as improvidently granted after oral argument.

Although most issued test-and-correlate claims are in the medical and biotechnological arts, test-and-correlate claims can be drafted in all arts. Kevin Emerson Collins, *Propertizing Thought*, 60 S.M.U. L. Rev. 317, 342-44 (2007) (illustrating how test-and-correlate claims function as a template for inventions in all arts). If the patent bar receives a clear signal that test-and-correlate claims are eligible for patent protection, the flood gates will open. Patent prosecutors in all arts will use them to increase the density of patent protection available per dollar spent on research.

The printed matter doctrine, too, needs to be reaffirmed. It has survived only through the stop-gap measures, and its long-term viability is widely perceived to be in jeopardy. *See, e.g.*, Andrew F. Knight, *A Potentially New IP: Storyline Patents*, 86 J. Pat. &

Trademark Off. Soc'y 859, 863-64 (2004) (arguing that storyline patents are eligible for patent protection because the printed matter doctrine "rests on shaky legal authority and, in any event, has been whittled away to an archaic common law has-been").

CONCLUSION

This Court should not allow the fact that an expansive patent regime can generate property in the human mind to get lost in the business-method shuffle. This Court should seize this opportunity to shore up the foundations of section 101 and adopt a back-to-basics approach to patent eligibility. It should announce a bar on the patenting of any claim in which the advance resides solely in a mental process, revive the mental steps and printed matter doctrines, and safeguard the public's privilege to use the disclosure as knowledge under the *quid pro quo* of patent law.

Dated: August 6, 2009

Respectfully submitted,

KEVIN EMERSON COLLINS
INDIANA UNIVERSITY
MAURER SCHOOL OF LAW – BLOOMINGTON
211 S. Indiana Avenue
Bloomington, IN 47405
(812) 856-1841