No. 08-964

In the Supreme Court of the United States

BERNARD L. BILSKI AND RAND A. WARSAW,
Petitioners,

v.

DAVID J. KAPPOS, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

AMICUS CURIAE BRIEF OF CENTER FOR ADVANCED STUDY AND RESEARCH IN INTELLECTUAL PROPERTY (CASRIP) OF THE UNIVERSITY OF WASHINGTON SCHOOL OF LAW, AND OF CASRIP RESEARCH AFFILIATE SCHOLARS, IN SUPPORT OF AFFIRMANCE OF THE JUDGMENT IN FAVOR OF RESPONDENT

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INTEREST OF *AMICI CURIAE*[1]

The Center for Advanced Study and Research on Intellectual Property ("CASRIP") is an independent research and policy development institute affiliated with the University of Washington School of Law.[2] CASRIP focuses on problems involving patents and other intellectual property rights in technology. The UN's World Intellectual Property Organization recognizes CASRIP as an observing non-governmental organization.

CASRIP promotes discussion among intellectual property scholars and professionals, particularly those from countries with mature intellectual property systems, such as Japan, Europe, and the United States. CASRIP fosters discussion of differences in the intellectual property regimes of various countries and studies the impact of those differences on technological innovation and international trade.

CASRIP believes that an unlimited scope of patent eligibility for any human activity that can be described or claimed as a "process" both goes against the history, purposes, and common understandings of the U.S. patent system and is unconstitutional. CASRIP endorses the understanding that the words of 35 U.S.C. § 101 must be interpreted in light of the Constitution and that, accordingly, patent-eligible subject matter includes only those (i) processes and

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[1] Pursuant to Supreme Court Rule 37.6, counsel for *amici* represents that it entirely authored this brief and no party, its counsel, or any other entity but *amici* and their counsel made a monetary contribution to fund the brief's preparation or submission. All parties have consented to the filing of this brief. Letters reflecting their consent are filed with the Clerk.

[2] The CASRIP Research Affiliate Scholars are described and listed *infra* App. B.

devices that fall within the "useful Arts," as the Constitution uses that term, and (ii) new practical applications of technological or artisanal activities that are of the same kind as and have evolved from the "useful Arts" as they were understood when the Constitution was drafted.

STATEMENT

The claimed invention

Petitioners ("Bilski") applied for a patent on a "process" for hedging financial risks attending the purchase or sale of commodities. Pet. 2a-3a. Such patents are commonly termed "business-method patents."

Representative claim 1 is for a three-step method for a broker to hedge risks for purchaser-users of a commodity input.[3] For example, an electric power plant might purchase coal from coal-mining companies and use it to make electricity. The power plant might seek to insulate itself from upward changes in coal prices by engaging in hedging transactions. The risk to the power plant can be quantified in terms of dollars (a "risk position"). Thus, if the purchaser needs 1,000 tons of coal in a given period, and the potential price spike is $10 per ton, the purchaser's total risk position for that period is 1,000 × $10, or $10,000.

The claimed process has, in substance, these steps:

> (1) initiating a series of sales or options transactions between a broker and purchaser by which the purchaser buys the commodity at a first rate based on historical prices;

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[3] Claim 1 is the only claim in this appeal, because Bilski elected below to have all claims "stand or fall" with independent claim 1. Pet. 203a-204a.

(2) identifying producers of the commodity; and

(3) initiating a series of sales or options transactions between the broker and producers, at a second rate, such that the purchaser's and sellers' respective risk positions balance out.

In terms of the coal-using-power-plant example, the broker would enter into transactions for purchases and sales, each respective set deviating oppositely from historical levels approximately $10,000 in total over the relevant period, thus hedging the risk of price spikes. The broker presumably would negotiate prices that have a "spread" that provides the broker with a profit.

Proceedings below

The patent examiner, the PTO's appellate board, and the court of appeals (*en banc*) determined that the claims were not patent-eligible.[4]

The Federal Circuit, 11-1, sustained the PTO's rejection of the patent application. Nine judges concurred in the majority opinion, based on the "machine-or-transformation test."

The majority opinion characterized the issue as whether the claimed method is a patent-eligible *process*, as the patent statute (35 U.S.C. § 101) uses that term. While any series of actions is a *process* in

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[4] Following the modern convention of courts and academic commentators, this brief uses the terms "patent-eligible" and "patent-ineligible" to refer to whether an item qualifies as potentially patentable subject matter under 35 U.S.C. § 101 and the U.S. Constitution. This brief reserves the term "patentable" and "unpatentable" to refer to whether a patent-eligible item meets the statutory requirements for patentability other than those in § 101—for example, the novelty requirement of § 102, the nonobviousness requirement of § 103, and the various formal requirements of § 112.

the dictionary sense, the court of appeals explained, the statutory meaning is narrower. That "forecloses a purely literal reading." Pet. 7a.

Patent-eligible processes do not include "laws of nature, natural phenomena, [or] abstract ideas." *Id.* That limiting legal rule applies not just to processes, but to anything on which a patent is sought.[5] As the trilogy of Supreme Court decisions on patent-eligibility from some three decades ago—*Gottschalk v. Benson*, 409 U.S. 63 (1972); *Parker v. Flook*, 437 U.S. 584 (1978); and *Diamond v. Diehr*, 450 U.S. 175 (1981)—had taught, this rule is necessary to prevent patents on abstract basic principles from tying up the basic tools of scientific and technological progress, and thus preempting technological advance. The Federal Circuit therefore saw its task as formulating a legal test that would prevent undesirable preemption and yet permit the rewards of the patent system to be extended to concrete, deserving technical advances. Pet. 8a-12a.

The Federal Circuit concluded that the prior decisions of this Court were of "limited usefulness" as guides, because they addressed polar cases on the abstraction and concreteness spectrum or involved "plainly corporeal industrial manufacturing process[es]." Pet. 12a. Nonetheless, a legal test could be distilled from them: "A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *Id.* Not only did the patent-eligibility trilogy support this

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[5] *See AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1357 (Fed. Cir. 1999) ("we consider the scope of § 101 to be the same regardless of the form—machine or process—in which a particular claim is drafted").

test, the Federal Circuit explained, but so too did earlier Supreme Court precedents dating back well into the Nineteenth Century. Pet. 13a-14a.

The court of appeals then concluded that this two-branch test, which it termed the "machine-or-transformation test," should be considered all-inclusive, that is, as stating indispensable conditions of patent-eligibility. It insisted that "the machine-or-transformation test is the only applicable test and must be applied, in light of the guidance provided by the Supreme Court and this court, when evaluating the patent-eligibility of process claims," even though the court of appeals recognized that much of the language in this Court's patent-eligibility trilogy was less sweeping. Pet. 15a-17a, 34a. The Federal Circuit placed no weight on the fact that the *Benson* Court had not accepted the Government's argument for an all-encompassing rule based on the machine-or-transformation test because the case law "cannot be rationalized otherwise."[6]

Applying the machine-or-transformation test to Bilski's claim, the Federal Circuit held it patent-ineligible. Bilski did not argue that the rejected claim recited any "particular machine," so that the court found it unnecessary to decide any issues relating to the machine-implementation branch of the test. "We leave to future cases the elaboration of the precise contours of machine implementation, as well as the answers to particular questions, such as whether or when recitation of a computer suffices to tie a process claim to a particular machine." Pet. 28a. The court then turned to transformation of articles from one thing or state to another, and to determining what is

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[6] *See* Petitioner's Reply Brief at 9, *Gottschalk v. Benson*, *supra* (No. 71-485).

an "article." Options, futures contracts, and business risks were not articles, as the case law had understood that concept, and accordingly Bilski's claim entirely failed the machine-or-transformation test. Pet. 32a.

Judge Mayer agreed with the judgment of patent-ineligibility but "dissented," primarily on the ground that business-method patents are unconstitutional, or the patent statute must be interpreted not to extend to them in order to avoid constitutionality problems. He maintained (Pet. 106a):

> The patent system is intended to protect and promote advances in science and technology, not ideas about how to structure commercial transactions. Claim 1 of the application … is not eligible for patent protection because it is directed to a method of conducting business. Affording patent protection to business methods lacks constitutional and statutory support, serves to hinder rather than promote innovation and usurps that which rightfully belongs in the public domain.

Pointing to the Statute of Monopolies and the public hostility to the English "odious monopolies," Judge Mayer concluded that, when Congress enacted the first patent statute (in language substantially unchanged to this day in regard to patent-eligibility), it specifically opposed allowing patents on methods of conducting trade. Pet. 106a-107a.

Judge Dyk, joined by Judge Linn, concurred in the majority opinion upholding the PTO's rejection of Bilski's patent, but concurred also in Judge Mayer's historical analysis that the framers of the Constitution intended to exclude from the U.S. patent system "methods for organizing human activity that do not

involve manufactures, machines, or compositions of matter." Pet. 54a.

Finally, Judge Rader agreed that Bilski's claim was patent-ineligible but "dissented" on the ground that the majority should simply have said that "Bilski claims merely an abstract idea," while Judge Newman dissented on the ground that Bilski's claim should have been allowed. Pet. 134a, 60a.

SUMMARY OF ARGUMENT

I. A. The Constitution's Patent Clause limits congressional power to issue patents to Discoveries of Inventors that are within the useful Arts. Therefore, this Court must find a way to determine whether given human activities are within (or without) the useful Arts and thus what are (or are not) the useful Arts.

B. The common understanding of what the useful Arts were, at the time of adoption of the Patent Clause, is highly material, and contemporary dictionaries and literary usage aid in discerning that. The colonial patents provide another important clue to what were considered useful Arts in the Eighteenth Century. The monopolies "backdrop" of the Patent Clause also provides a clue, illuminating what the drafters of the Patent Clause were opposed to having patented.

These sources equate the useful Arts with the activities of artisans. They exclude those arts and activities that in the Eighteenth Century were considered not within the useful Arts—for example, the liberal arts, literary arts, and non-arts activities, such as engaging in a profession or, notably, engaging in commerce or business—for those in trade are not artisans.

II. The machine-or-transformation test permits some machine-implemented processes to be patented, even though they are not within the useful Arts—for example, laser-implemented cat-exercise and mechanized slapstick. The machine-or-transformation test therefore cannot be complete, even though needed to prevent preemption of basic principles.

Moreover, some processes (typically low-technology) are historically considered in the useful Arts but do not pass the machine-or-transformation test. Yet, they need not do so because they are purely empirical—non-theoretical—lacking any known underlying basic principle that they implement and therefore could preempt. The machine-or-transformation test should be reserved for excluding expedients that implement basic principles and thus risk preempting them.

Some processes fail the machine-or-transformation test because, although now technologically infeasible, future advances in technology may change that. Therefore, as *Benson* suggests, a less absolute rule is preferable—a rebuttable presumption of patent-ineligibility. It is more prudent to follow *Benson* and leave the door open to rebutting that presumption for advances that fail the machine-or-transformation test.

III. Proposed tests other than the machine-or-transformation test are even more problematic as tools for filtering out patents preempting basic principles. Despite its incompleteness, the machine-or-transformation test is superior to its competitors in this regard. It merely needs to be supplemented.

IV. Congress did not endorse business-method patents by enacting the "prior user" personal-defense statute. In any case, as part of the Constitution, the

Patent Clause is the supreme law of the land, and it does not authorize patents on business expedients.

V. Bilski's claim is patent-ineligible because it fails both the useful Arts and machine-or-transformation tests. The judgment in this case can properly be rested solely on the useful-Arts requirement, however, and cannot as effectively be rested solely on the machine-or-transformation requirement. Arguably, Bilski did not receive sufficient notice below that he must rebut the presumption of patent-ineligibility arising from noncompliance with the machine-or-transformation test. If so, fairness requires a remand to provide that opportunity. But no remand is needed to justify rejecting Bilski's claim under the useful-Arts requirement, for the Constitution and therefore the statute, properly interpreted, will not permit grant of a patent monopoly outside the useful Arts.

ARGUMENT

I. THE CONSTITUTION'S PATENT CLAUSE GUIDES INTERPRETATION OF § 101

A. The Constitution Limits the Patent Power

As Judges Mayer, Dyk, and Linn insisted below, the word "process" in § 101 must be interpreted in the light of its use in the Constitution. That the Patent Clause—Article I, § 8, clause 8—acts as a limitation on, as well as a grant of, congressional power to legislate about patents is settled since *Graham v. John Deere Co.*, 383 U.S. 1, 5-6 (1966) ("The Congress in the exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose.… This is the standard expressed in the Constitution and it may not be ignored."); *accord Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989).

The Constitution's Patent Clause states, in pertinent part, that Congress shall have Power to promote the Progress of useful Arts, by securing to Inventors the exclusive Right to their respective Discoveries. Accordingly, just as *Graham* instructs that "obvious" in § 103 must be interpreted with "reference to a standard written into the Constitution," 383 U.S. at 6,[7] so too must "process" in § 101 be interpreted with reference to the Constitution's congressional-power limitation to patenting "Discoveries of Inventors" that are within the "useful Arts."[8]

Congress may no more authorize patents on things that are not Discoveries of Inventors, within the useful Arts, than it can enact non-uniform bankruptcy laws under the Bankruptcy Clause, *see Railway Labor Executives' Ass'n v. Gibbons*, 455 U.S. 457 (1982) (striking down non-uniform bankruptcy law); or use its power under the Copyright Clause to protect material not "the fruits of intellectual labor," *The Trademark Cases*, 100 U.S. 82, 94 (1879), or "raw facts," *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 344-45, 350 (1991).[9] Thus, a patent on a

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[7] The *Graham* Court held that the Constitution's limitation of patent protection to *Discoveries* (i.e., *inventions*) of *Inventors*—thereby excluding slight technological advances resulting from merely routine artisanship—dictated the meaning of the patent statute's "non-obviousness" requirement. *See also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007) ("[T]he results of ordinary innovation are not the subject of exclusive rights under the patent laws. Were it otherwise patents might stifle, rather than promote, the progress of useful arts. These premises led to the bar on patents claiming obvious subject matter[.]").

[8] Moreover, § 101 authorizes patent grants only to those who "invent" something. Section 1 of the Patent Act of 1790, ch. 7, 1 Stat. 109, used similar language.

[9] The legal principle can be expressed in terms of the phrase "Discoveries of Inventors" or the phrase "useful Arts," or both.

process for making or doing something not within the useful Arts exceeds Congress's enumerated powers,[10] and § 101 should be interpreted to avoid that result.

The machine-or-transformation test adequately performs its intended function—to filter out and reject claims to "laws of nature, natural phenomena, [or] abstract ideas"[11] (collectively, hereinafter, "basic principles"). But that is not enough. Other things besides basic principles are patent-ineligible, because they are outside the useful Arts,[12] and a proper legal rule must exclude them too, even when they are machine-implemented. Because the Federal Circuit has not taken that requirement into account, its insistence that the machine-or-transformation test is the "only applicable test"[13] has led it into an errone-

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The two phrases are different ways of describing essentially the same limitation: any Discovery of an Inventor that is not within the useful Arts is not the kind of Discovery that the Patent Clause registers. *See Flook*, 437 U.S. at 593 ("The rule that the discovery of a law of nature cannot be patented rests not on the notion that natural phenomena are not processes, but rather on the more fundamental understanding that they are not the kind of 'discoveries' that the statute was enacted to protect."). For brevity and to avoid repetition, the term "useful-Arts limitation" will hereinafter refer collectively to these terms of limitation in the Patent Clause.

[10] *See United States v. Morrison*, 529 U.S. 598, 607 (2000).

[11] *See Benson*, 409 U.S. at 67; *Flook*, 437 U.S. at 589; *Diehr*, 450 U.S. at 185.

[12] Arguably, basic principles are not Discoveries within the useful Arts, *see Flook*, *supra* note 9, but the machine-or-transformation test is nonetheless incomplete because still other things are outside the useful Arts. *See infra* Part II.

[13] *See also In re Ferguson*, 558 F.3d 1359, 1364-65 (Fed. Cir. 2009) (machine-or-transformation test is "the 'sole,' 'definitive,' 'applicable,' 'governing,' and 'proper' test … under § 101").

ous, or at least incomplete, statement of the law, which this Court should correct.

To ensure faithfulness to the constitutional mandate, this Court must find a way to determine whether given human activities are within (or without) the useful Arts and therefore what are (or are not) the useful Arts. The term is *not* self-defining.[14]

B. Determining What Are the Useful Arts Can Best Be Accomplished by Looking, in the First Instance, to What Were Considered Useful Arts in the Eighteenth Century and Also to the Monopolies "Backdrop" of the Patent Clause

The clues to ascertaining what is within the useful Arts, and thus to properly interpreting § 101, are found by examining usage in Eighteenth Century texts, the "monopolies backdrop" of the Patent Clause,[15] and the kind of patents issued under the pre-Constitution colonial patent systems. Those are the most reliable pointers to the framers' understanding of the constitutional term "useful Arts."

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[14] Thus, "useful Arts" is not simply the combination or sum of "useful" plus "arts," any more than "due process" is simply the sum of "due" and "process" or "blue sky law" is the sum of its parts. The useful Arts are only a subset of arts that are useful. (As used hereinafter, "useful" when not followed by "Arts" refers to the contemporary dictionary sense of the word.)

Although a useful Art must be useful, many things are useful that are not within the useful Arts. The art of fencing is useful, for example, but the Eighteenth Century classified it among the martial arts, *not* the useful Arts. Ovid's *Ars Amatoria* provides another example of an art that is useful but is not within the useful Arts.

[15] *See Graham*, 383 U.S. at 6.

1. Usage in Texts Around 1789

To make a proper textual analysis, one must ascertain what the Constitution's phrase "useful Arts" meant in and around 1789.[16] Only those dictionaries published in the Eighteenth Century or perhaps shortly later are useful.[17] They speak very tersely, however, particularly in regard to the distinction between useful Arts and other arts. Neither Samuel Johnson nor Noah Webster explicitly defined "useful arts," but both give processes as examples when defining *art*: Johnson mentions "making sugar"; Webster, "building or engraving" and "making clothes and utensils."[18] Moreover, in defining *art*, Webster distinguishes *useful* (also termed *mechanic*) arts from *liberal* (also termed *polite*) arts:

> Arts are divided into useful or mechanic, and liberal or polite. The mechanic arts are those in which the hands and body are more concerned than the mind; as in making clothes and utensils. These arts are called trades. The liberal or polite arts are those in which the mind or imagination is chiefly concerned; as poetry, music and painting.

Webster's "mechanic" concept clearly excludes engaging in buying, selling, and other business and commerce.

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[16] For a similar approach in another patent context, see *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 376-82 (1996) (looking to practice in and preceding Eighteenth Century to determine whether judge or jury should interpret claims).

[17] *See Smiley v. Citibank (S.D.), N.A.*, 517 U.S. 735, 745 (1996) (using dictionaries from time of statutory enactment).

[18] SAMUEL JOHNSON, A DICTIONARY OF THE ENGLISH LANGUAGE (6th ed. 1785); NOAH WEBSTER, AMERICAN DICTIONARY OF THE ENGLISH LANGUAGE (1st ed. 1828).

Contemporary literary sources are to the same effect. George Washington, for example, explicitly distinguished commerce from useful arts.[19] Other contemporaneous literary sources describe the useful arts in terms of manufactures, consistently with Johnson's and Webster's definitions.[20] Eighteenth Century usage clearly does *not* include engaging in commerce or business as within the useful Arts.

2. Patents Issued in the Eighteenth Century

Examination of the kinds of patents issued near and preceding 1789 provides a practical understanding of how contemporaries of the drafters of the Patent Clause viewed patent-eligibility. The first two patents that issued under the first federal patent statute[21] were on manufacturing processes—potash-making and candle-making.[22] Earlier colonial pat-

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[19] In a January 29, 1789 letter to Lafayette, Washington distinguished commerce from useful Arts, stating, "While our commerce has been considerably curtailed …; the useful arts have been almost imperceptibly pushed to a considerable degree of perfection." 30 THE WRITINGS OF GEORGE WASHINGTON FROM THE ORIGINAL MANUSCRIPT SOURCES, 1745-1799 (Fitzpatrick ed., 1939).

[20] *See* Kenrick, *An Address to the Artists and Manufacturers of Great Britain* (1774) (contrasting the "useful Arts" with the "polite arts"); Coxe, *An Address to an Assembly of the Friends of American Manufactures, in Calling for More Domestic Manufacturing* 17-18 (1787) (describing useful Arts in terms of manufactures); Logan, *A Letter to the Citizens of Pennsylvania, on the Necessity of Promoting Agriculture, Manufactures, and the Useful Arts* 12-13 (1800) (describing useful Arts in terms of manufacturing processes).

[21] Patent Act of 1790, ch. 7, § 1, 1 Stat. 109 (authorizing patents on "any useful art, manufacture, engine, machine, or device, or any improvement therein").

[22] The first United States patent, granted to Samuel Hopkins (No. X1, issued July 31, 1790), was on a method of making potash. The next patent (No. X2, Aug. 6, 1790) issued to Joseph

ents were for similar processes, e.g., methods of salt-making and iron-to-steel conversion; and for processing and manufacturing machines, e.g., rice-cleaning and scythe-making.[23] Yet, it is not clear that the useful Arts were strictly limited to manufacturing processes, for related processes also appear to have been recognized—for example, ways to sharpen a knife, scissors, scythe, or plow.[24]

But methods of doing business were not patented, federally or colonially,[25] although the Eighteenth

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Sampson on a method of making candles. The only other 1790 patent (No. X3, Dec. 18) issued to Oliver Evans for flour-milling machinery. *See* THOMPSON, AGE OF INVENTION 28-29 (1921). No early patents were on business methods.

[23] *See* CLARK, HISTORY OF MANUFACTURES IN THE UNITED STATES 48-50 (1916); 1 BISHOP, HISTORY OF AMERICAN MANUFACTURES 476 (3d ed. 1868).

[24] *See*, *e.g.*, *Hovey v. Stevens*, 12 F. Cas. 615 (C.C.D. Mass. 1846) (suit for infringement of 1845 patent on sharpening knives). Petitioners misstate history, however, when they insist that "the U.S. patent system has long embraced nonmanufacturing methods" and suggest that Congress granted a patent on "methods by which the principles of magnetic variation are … explained" (Pet. Br. 50-51). Despite the kind words, Congress did *not* grant Churchman a patent or even a subsidy. DUPREE, SCIENCE IN THE FEDERAL GOVERNMENT: A HISTORY OF POLICIES AND ACTIVITIES 9-11 (1980). Moreover, the Statute of Monopolies authorized patents only for the "working or making of any manner of new manufactures."

[25] *See In re Comiskey*, 554 F.3d 967, 976-77 (Fed. Cir. 2009) (the framers "consciously acted to bar Congress from granting letters patent in particular types of business"); *id.* at 980 ("It is thus clear that the present statute does not allow patents to be issued on particular business systems … a field of endeavor that both the framers and Congress intended to be beyond the reach of patentable subject matter."); Pollack, *The Multiple Unconstitutionality of Business Method Patents: Common Sense, Congressional Consideration, and Constitutional History*, 28 RUTGERS COMPUTER & TECH. L.J. 61, 90 (2002); Ochoa & Rose,

Century did not lack innovative business schemes.[26] That they were not patented evidences a common understanding that they were patent-ineligible.

3. The Monopolies "Backdrop"

The "backdrop of the practices" that led to the passage of the Statute of Monopolies and ultimately to the Patent Clause itself and its built-in restraints on power further aids understanding what the drafters of the Patent Clause meant to be patent-eligible. *See Graham*, 383 U.S. at 5-6. The monopolies "backdrop" illuminates what the framers believed should *not* be the subject of exclusive patent rights. *Id.* The East India Company's tea monopoly, which had led to the Boston Tea Party a few years earlier, is one example of what is not within the patent-eligible useful Arts. The Company did not invent or discover an improved way to *process* tea, for which it was awarded a patent monopoly; the Crown simply favored the Company with a royal monopoly grant over *trading* with the American Colonies—a franchise to mulct the colonists by extracting monopoly rent from them, to enrich Company shareholders.

The Anti-Monopoly Origins of the Patent & Copyright Clause, 49 J. COPYRIGHT SOC'Y 675, 693-95 (2002).

[26] *See* Pet. 107a-108a (Mayer, J., dissenting); Pollack, *supra*, at 106-08. Innovative Eighteenth Century business schemes included the 1719 South Sea Bubble (transformation of high-interest but difficult-to-trade debt into low-interest, readily marketable debt and shares of South Sea Company); the 1720 Mississippi Company Bubble (similar debt-for-shares scheme, with shares collateralized by expected gains from monopoly on trading rights with French colonies); the Scottish Presbyterian Church's 1744 introduction of actuarially-based, premium-life insurance; and Benjamin Franklin's 1752 founding of a property-insurance company.

Darcy v. Allen, 11 Co. Rep. 84b, 77 Eng. Rep. 1260 (K.B. 1603), provides another negative illustration. Darcy did not receive a patent for inventing an improved way to *manufacture* playing cards; his patent gave him the exclusive right to *sell* playing cards, as a royal favor from the Queen,[27] again a franchise to mulct the public by extracting monopoly rent from it. Neither engaging in trading with the Colonies nor the exclusive right to sell playing cards is a useful Art; both are paradigmatic examples of things *not* useful Arts—things the framers intended to exclude from any federal system granting exclusionary rights. Just as the catalog of artisanal arts informs us what are useful Arts, the catalog of odious monopolies helps inform us what are not useful Arts.[28] Legal history thus informs courts of practices that should be considered outside the useful Arts and patent-ineligible.

Accordingly, the monopolies backdrop of the Patent Clause indicates the framers' disfavor toward any state grant of a monopoly on a kind of trading, as contrasted with a way to make the articles that become the subject of trading—*selling* playing cards,

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[27] *See Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 229 (1964).

[28] An extensive list of odious monopolies is found in DAVID HUME, HISTORY OF ENGLAND Ch. 44, at 458 (1810 ed.). Another part of the *Graham* "backdrop" is the set of practices that common-law courts regarded as having pernicious effects similar to those of monopolies and therefore similarly abhorred and condemned (e.g., engrossing—preempting the sale of goods or securing a monopoly of their sale). *See Standard Oil Co. v. United States*, 221 U.S. 1, 53-54 (1911). The Boston Tea Party, which *Graham* singles out, was a response to engrossing. *See id.*

for example, as contrasted with means for *making* them.[29]

C. Conclusions from Textual Analysis

The available texts illuminate largely what are *not* useful Arts. The subtlety of the issue, and the competing policies at stake, make "useful Arts" not amenable to a pithy definition. Definition by enumeration or description, however, is feasible.

Thus, useful Arts are what practical artisans or mechanics do. It is possible to make that more specific. Textual analysis lets us infer several things about the useful Arts. First, some arts categories are mutually exclusive—notably (as Noah Webster said) "useful or mechanic," on the one hand, and "liberal or polite," on the other. What is in the liberal arts[30] cannot be in the useful Arts. Other arts categories exist that, like the liberal arts, are excluded from the useful Arts: e.g., performing arts,[31] literary arts,[32] and martial arts.[33] Things in these arts were not within the useful Arts. Practice of the learned professions (such as law and clergy) was also outside the useful Arts.

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[29] This may require fine distinctions. Making steel or shoes is within the useful Arts, but engaging in the business of selling steel or shoes is not within the useful Arts. A trader is not an artisan. Noah Webster defined a *trader* as "[o]ne engaged in trade or commerce; a dealer in buying and selling or barter."

[30] Classically, the seven so-called liberal arts were arithmetic, geometry, music, astronomy, grammar, rhetoric, and logic.

[31] Performing arts include performance of music, drama (including tragedy and comedy), and dance.

[32] Literary arts include composition of poetry (as distinguished from its recitation or performance).

[33] Martial arts include boxing, wrestling, and fencing.

It is thus possible to make two lists—a catalog of arts clearly recognized in and around 1789 as useful Arts[34] and one of arts and other human endeavors clearly then recognized as *not* within the useful Arts —because the members of each list were deemed to be in mutually exclusive arts categories.

It is also possible to determine what is akin to, and thus appropriately added to, the members of each list. The two lists will aid a court in making the legal determination whether a given claimed process in a new art is patent-eligible under the useful-Arts test. Courts will recognize from the history of their development those arts derived from the useful Arts known around 1789. Thus, interpreting the statute in the light of the Constitution does not compel courts to freeze the concept of promotion of the progress of the useful Arts by excluding new categories of artisanal inventions. *Graham*'s command that § 103 must be interpreted in the light of the Constitution did not have that effect, and there is no reason to assume any different result for § 101.

Correct application of that principle, at times proceeding incrementally through intermediate arts, should sweep up artisanal advances, because that is how technology itself and the useful Arts actually develop: they build accretionally on earlier developments. *See KSR*, 550 U.S. at 427 ("advances, once

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[34] A partial list follows of arts clearly recognized as within the useful Arts in and around 1789: brick-making, manufacture of ceramics and silica-based products (including glass, porcelain, pottery, tiles), milling, shoemaking, smelting of metals, tanning, the arts of many kinds of smith (e.g., blacksmith, goldsmith, silversmith, tinsmith), many textile-related arts (e.g., cloth-making, dyeing, fulling). *See*, *e.g.*, BIGELOW, ELEMENTS OF TECHNOLOGY (2d ed. 1831) (lectures on application of science to the useful Arts).

[they are] part of our shared knowledge, define a new threshold from which innovation starts once more … [and] progress begin[s] from higher levels of achievement"). For example, integrated circuits are akin to and use the knowledge of the ceramics and silica-products arts known in 1789, such as glass-making and porcelain-making. The manufacture of automobiles is an outgrowth or development of, and akin to, the wagon-making art.[35] Difficulties in applying the incremental approach may exist, but they are not insurmountable, and that approach has the advantage of being more principled than the alternatives.

Most important for this case, however, even if there are difficulties at the boundary in determining whether particular arts *are* within the useful Arts and therefore whether particular advances are patent-eligible, no difficulty extends to this case. Buying, selling, and otherwise engaging in business or commerce—even if in manufactures—were not considered arts and were not understood as among the useful Arts. Dictionaries and literary texts support the view that engaging in trade was not within the useful Arts. Moreover, the evidence from the "backdrop" suggests a strong antipathy to allowing monopolies on types of trading—an antipathy that led to the Boston Tea Party and was a factor in causing the Revolution.[36]

In sum, business is not a useful Art. Methods of engaging in commerce were not recognized as useful Arts in 1789.

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[35] *See also* BARBER, STORY OF THE AUTOMOBILE 58-59 (1917) (1787 Maryland patent on steam-propelled horseless-carriage).

[36] *Graham*, 383 U.S. at 7 ("[i]t was a monopoly on tea that sparked the Revolution").

II. THE MACHINE-OR-TRANSFORMATION TEST USED ALONE IS USUALLY CORRECT, BUT SOMETIMES IS OVER- OR UNDER-INCLUSIVE

As previously stated, the Federal Circuit's insistence that the machine-or-transformation test is the "only applicable test" has led it into an erroneous, or at least incomplete, statement of the law, which this Court should correct. That test requires some qualification, because its application sometimes leads to error. The machine-or-transformation test has been erroneously regarded as a two-way street—a necessary and sufficient condition of patent-eligibility.

Problems with each direction of that street show that the machine-or-transformation test needs to be supplemented by a further test, for the test leads to false positives and even some false negatives. A more reliable approach is to use the useful-Arts test, first, and then (if the first test is met) the machine-or-transformation test. (The reason is that, as will be shown, a process can pass the machine-or-transformation test and yet be outside the useful Arts.) Moreover, the machine-or-transformation test should create only a rebuttable presumption of patent-ineligibility for processes that cannot satisfy the test.

A. Background of the "Only Applicable Test" Controversy

The Government distilled and first articulated the machine-or-transformation test in its briefs in *Benson*, on the basis of its review of all earlier patent decisions of this Court involving processes. Based on that sample, it argued:

> Though the *Morse* case and *The Telephone Cases* do not state the rule, in so many words, that patents on processes which do not involve the

> manipulation and transformation of physical materials from one physical or chemical state into another, must contain limitations confining the monopoly grant to the practice of the method by means of particular types of apparatus, we submit that the cases follow such a rule—implicitly or explicitly—and that they cannot be rationalized otherwise.[37]

This Court expressly reserved the point, however, even though it recognized that all its prior decisions had met the test's requirements:

> It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a "different state or thing." We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents.[38]

Amici submit that the proper rule, which this Court should follow, subject to further qualifications explained in this section, is a rebuttable presumption of patent-ineligibility for claimed inventions that fail the machine-or-transformation test.[39] In other words,

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[37] *See* Petitioner's Reply Brief at 9, *Gottschalk v. Benson*, *supra* (No. 71-485).

[38] *Benson*, 409 U.S. at 71; *see also Flook*, 437 U.S. at 588 n.9 ("An argument can be made, however, that this Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing.' As in *Benson*, we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents.").

[39] *Amici* use the Federal Circuit's designation "machine-or-transformation test," but it must be recognized that this terminology is imprecise. The process-implementing-device limitation need not be a machine to protect the public from patents on basic principles. The device may be an article of manufacture, as

go no farther than *Benson* and its progeny—leave the door open to rebuttal. Like Newtonian, pre-relativity, pre-quantum physics, the machine-or-transformation test works for most practical cases, and thus most of the time, but some fact patterns falsify its predicted results. The machine-or-transformation test should not be the "only applicable test" to determine whether processes are patent-eligible.

B. False Positives

The following are examples of processes that satisfy the machine-or-transformation test but are nonetheless patent-ineligible, because they are not within the useful Arts.

A prime example of such a process is a method for entertaining a cat by using a laser beam (relatively high technology). *See* U.S. Pat. No. 6,701,872 (reproduced *infra* App. A). The method is implemented with a "particular machine"—"a rotating laser source mounted directly on a shaft driven directly by a motor mounted on a portable pedestal" (method claim

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in *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127 (1948) (a package); or a composition of matter, as in *Armour Pharmaceutical Co. v. Richardson-Merrell, Inc.*, 396 F.2d 70, 74 (3d Cir. 1968) (acid-resistant coating). Moreover, to avoid preemption of basic principles, the implementing device must not be just *any* "particular device": as *Flook* instructs, *see* 437 U.S. at 584, the device must not be concededly old or uncreative on its face. *See also Funk*, 333 U.S. at 132 (making package of mixed inoculants is so trivial and uncreative a step from discovery of natural principle that allowing patent on package is tantamount to allowing patent on natural principle); *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) (because everybody knows that rubber clings to solid inserted into cavity in the rubber, claiming this as eraser is implementation at so trivial a remove from the idea that patent is on the idea). On device-implementation, *see generally* Wikipedia, "Machine-or-transformation test."

14). Entertaining a cat has never been considered a useful Art, and surely this "discovery" is not the kind of discovery that the Patent Clause contemplates.

Another example is the process of Kafka's *In the Penal Colony*. A machine cuts into the skin of culprits words appropriate to crimes they committed (e.g., "Obey your superiors!"), and the process continues until they expire. Treating Kafka's story as the specification for a patent application, the (notionally) claimed subject matter is: a process for imposing on a culprit a punishment that fits a crime that the culprit committed.[40] The machine is a "particular machine" to which the process is tied. But a process for imposing "a punishment that fits the crime" is not within the useful Arts. The process meets the machine-or-transformation test requirements, but the function of the process (making the punishment fit the crime) is outside the useful Arts, and promoting accomplishment of that function does not promote progress of useful Arts.[41]

Other examples of machine-implemented patent-ineligible processes are readily provided:

> *A process for making a roomful of people laugh, comprising providing a microphone coupled to an amplifier, said amplifier coupled to at least one loudspeaker; and speaking into said microphone*

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[40] Claims and a discussion of the device are found in Stern, *Being Within the Useful Arts as a Further Constitutional Requirement for US Patent-Eligibility*, [2009] EUR. INTELL. PROP. REV. 6, 11.

[41] The present process-patent case does not directly present the question of the patent-eligibility of a *machine* whose purpose and function are not within the useful Arts. As the Federal Circuit has properly pointed out, however, the same patent-eligibility standards apply to processes and machines. *See Excel Communications*, 172 F.3d at 1357-58.

> *to tell the people anecdotes beginning, "Take my wife, please."*

Or the entertainment process performed by a machine adapted for hitting people in the face with custard pies. Still another example is a tax-avoidance scheme carried out by means of a programmed general-purpose digital computer.[42] Or a method of spreading good karma by encoding a mantra on a computer's hard-disk acting as a prayer wheel, and causing the disk to spin by operating the computer.[43] Every example of a false positive, here, is patent-ineligible only because not within the useful Arts.

It is manifest, therefore, that the machine-or-transformation test is incomplete—incapable of excluding some processes (and devices) that are patent-ineligible. A preliminary or threshold test based on the constitutional, useful-Arts requirements for patent-eligibility must precede use of the machine-or-transformation test. The tests have different functions—one weeds out overly broad and abstract claims that preempt basic principles, while the other weeds out things that are excluded from the patent system because of their nature (field of endeavor). Thus, both kinds of test are needed.[44]

C. False Negatives

Some processes—typically old, low-technology, and non-theoretical—use no machine and cause no transformation. They nonetheless are within the useful

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[42] *See State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

[43] *See generally* Wikipedia, "Prayer wheel."

[44] Arguably, basic principles are neither *Arts* nor *Discoveries of Inventors*. But the basic-principle and type-of-art inquiries require quite different kinds of analysis. Tests for each are therefore still needed.

Arts or are akin to them, are not preemptive, and thus contradict the machine-or-transformation test.[45]

A paradigmatic example is: *cleaning a dirty shirt by submerging it in a river and beating it.* There is no "particular machine" and no obvious example of a transformation of an article.[46] Similar processes illustrate the principle.[47]

Or consider this low-technology process:

> *A method for operating a coal mine where a toxic gas may be present, comprising placing a canary in the mine, observing it, and running away fast if it dies.*

Inventions often occur in fields where the underlying principle of the invention is not understood because of the inventor's lack of knowledge or a then-current primitive stage of knowledge. For example, Goodyear had no knowledge that rubber polymers

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[45] These examples are patent-eligible but anticipated, because old. The issue in *Bilski*, however, is solely patent-eligibility.

[46] Clean or dirty, the shirt remains a shirt. *See American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1 (1931), in which this Court held that impregnating the rind of an orange with borax to prevent decay did not transform the orange: "Addition of borax to the rind of natural fruit does not produce from the raw material an article for use which possesses a new or distinctive form, quality, or property.… There is no change in the … general character of the fruit. It remains a fresh orange, fit only for the same beneficial uses as theretofore." *Id.* at 11-12; *see also id.* at 13 ("There must be transformation; a new and different article must emerge having a distinctive name, character, or use.").

[47] For example: *removing wrinkles from a garment by hanging it overnight in a hot and humid place.* Consider, also, the original of the expedient used in *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976). *See id.* at 275 n.1 (cleaning a stable by diverting a stream to flow through it).

cross-link when heated in the presence of sulfur. He just knew that the rubber became harder and elastic. Given the state of knowledge in 1840, the invention was purely empirical.

Useful Arts like that of the dirty-shirt paradigm are purely empirical and non-theoretical, but Congress has never chosen to narrow the patent-eligible useful Arts to only those scientifically explainable.[48] A proper test of patent-eligibility must therefore accommodate empirical discoveries as well as scientific ones. Such processes are not necessarily transformative and can be such low-technology that they use *no* machine, much less a *particular* machine. The machine-or-transformation test is neither necessary nor suited to claims to purely empirical processes, because there is no currently known underlying basic principle that the claim could preempt.

D. Now-Infeasible or Impossible Processes and Future Technology

Finally, hypothetical examples can be posited of processes that do not meet the requirements of the machine-or-transformation test, are directed to patent-eligible subject matter, yet are infeasible or

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[48] *Diamond Rubber Co. v. Consolidated Rubber Tire Co.*, 220 U.S. 428, 435-36 (1911) ("A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities, he is entitled to the rank and protection of an inventor.… It is certainly not necessary that he understand or be able to state the scientific principles underlying his invention[.]"); *accord In re Cortright*, 165 F.3d 1353, 1359 (Fed. Cir. 1999) (PTO "erred in suggesting that [inventor of baldness cure] was required to prove the cause of the resultant hair growth"); *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565, 1570 (Fed. Cir. 1983) ("[I]t is axiomatic that an inventor need not comprehend the scientific principles on which the practical effectiveness of his invention rests.").

deemed impossible under currently available technology. Nonetheless, advances in technology may occur that make such processes realities.

Consider, for example, a room having a hole in the wall. The room is cooled by a process that sends air molecules moving faster than average out of the room through the hole, decreasing the average speed of air molecules in the room, thereby cooling it. Implementing the process is currently deemed impossible.[49]

Such now-infeasible notional processes suggest adoption of *Benson*'s caution in declining to "hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents." 409 U.S. at 71.

E. Conclusions from Limitations of Machine-or-Transformation Test

The machine-or-transformation test succeeds in filtering out claims to applications of basic principles claimed too broadly or in such trivial or conventional implementations that the claim preempts the basic principle. But even claims that pass the machine-or-transformation test can be on devices outside the useful Arts (*supra* Part II.B) and therefore patent-ineligible. Moreover, some useful Arts are purely empirical and non-theoretical (*supra* Part II.C). Therefore, the machine-or-transformation test is neither universally necessary nor sufficient for patent-eligibility. But it can properly be viewed as creating a rebuttable presumption, as *Benson* suggests.

Accordingly, at least two patent-eligibility tests are needed. First, being within the useful Arts is a *sine qua non*. Second, those useful-Arts advances im-

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[49] *See generally* Wikipedia, "Maxwell's demon."

plementing a known basic principle, which therefore could (but must not) preempt it, must also pass the machine-or-transformation test.

III. OTHER TESTS PROPOSED SO FAR ARE EVEN MORE PROBLEMATIC THAN THE MACHINE-OR-TRANSFORMATION TEST

The principal rivals proposed as substitutes for the machine-or-transformation test are the Federal Circuit's now-discarded "useful, concrete, and tangible" test (which petitioners seek to revive under the name "practical-application" test, *see* Pet. Br. 52-59) and the "technological-arts" test.

A. The useful-concrete-tangible test can be rejected out of hand for the reasons stated in the dissenting opinion of Justice Breyer in *Laboratory Corp. v. Metabolite Laboratories, Inc.*, 548 U.S. 124, 136-37 (2006) ("[T]his Court has never made such a statement and, if taken literally, the statement would cover instances where this Court has held the contrary.") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854); *Flook*; and *Benson*).

Petitioners and some *amici* would resurrect this test, renamed the "practical-application" or "abstract/applied" test. They propose that courts should go, without intermediate analytic mechanisms, directly to the ultimate purpose of the machine-or-transformation test, which is to filter out preemptive claims to basic principles. The court (or PTO) simply decides directly whether the claim is to a practical application of a basic principle or to the basic principle as such. No conceptual tool (like the machine-or-transformation test) or other criterion is proposed for making the determination, for it is assumed (without support) that we always "know it when [we] see it," *cf. Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964)

(Stewart, J., concurring), whether a practical application or an abstract idea as such is claimed.

But *Flook* has already exposed the fallacy of this approach. Any patent drafter can add "practical" activity to a claim on a basic principle. Under the proposed abstract/applied test, adding to a claim to the Pythagorean Theorem, for example, the further step that the technique is applied to land surveying makes the claim one to a practical application, and therefore supposedly patent-eligible.[50]

B. The technological-arts test is more difficult to reject, for it clearly contains at least the germ or kernel of the right principle. Although the technological-arts test has great intuitive appeal, it also has severe difficulties. First, and most important, the Constitution and the statute do not mention "technology" or "technological arts."

Second, equating "useful Arts" to "technological arts" simply pushes the search for a satisfactory legal definition to the next level, where it continues to resist definition. Is a machine in the technological arts simply because it is a machine employing technology—if it performs a function clearly outside the useful Arts (for example, Kafka's punishment-that-fits-the-crime machine)? Is a machine for entertaining a cat by using a laser (relatively high technology) in the technological arts?[51] The mere fact that a claimed invention utilizes technology (such as a laser) does not make the device within the useful Arts. Presence of technology is not a touchstone.

Third, the technological arts are only a subset of the useful Arts. If one accepts that technology applies

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[50] *See Flook*, 437 U.S. at 590.

[51] *See infra* App. A; *supra* Part II.B.

scientific theory to solving practical problems, the resulting technological arts are only those useful Arts derived from scientific knowledge.[52] Yet, some useful Arts (like rubber vulcanization) were purely empirical and non-theoretical. Nevertheless, Congress never chose to narrow the patent-eligible useful Arts to only those that are technological in the scientific sense just used here. *See supra* Part II.C.

C. The difficulties with these tests suggest that, despite its incompleteness, the machine-or-transformation test is superior to its competitors in filtering out preemptive claims to basic principles. Nonetheless, because the machine-or-transformation test cannot completely diagnose patent-ineligibility, a way to determine what is in the useful Arts is needed, *see supra* Parts I.B-C—that standard, too, must be met.

IV. CONGRESS DID NOT ENDORSE PATENT-ELIGIBILITY OF BUSINESS METHODS

Petitioners misstate the text and legislative history of 35 U.S.C. § 273 by arguing that it shows Congress "embraced" business methods in 1999. Section 273 provides a limited personal defense for patent infringement: if a person used a business method in her business more than a year before the patentee applied for a patent, she is entitled to continue the use without liability. Nothing in § 273 addresses patent-eligibility.

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[52] *See* O'Connor, *Using Insights from the History of Science to Redefine Patentable Subject Matter Under the IP Clause of the U.S. Constitution* 7-8 (2007), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1104899 (science—classically understood narrowly as inquiry into underlying laws and causes of observed phenomena without regard to their application to satisfying human needs or desires—was expressly not part of the arts, generally, and thus not within the useful Arts).

As originally introduced, the legislation did not even mention business methods and applied pervasively to all inventions. After great opposition to the proposal, it was scaled down to a minute fraction of its original scope—as a compromise—limiting it to business methods.[53] Nothing in the legislative history indicates any desire to "embrace" business methods. In any case, because business methods are not within the useful Arts, as the Constitution requires, nothing in the statute could transform them into patent-eligible subject matter. The Constitution is the supreme law of the land. *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 178 (1803).

V. BILSKI'S CLAIM IS PATENT-INELIGIBLE

To be patent-eligible, an advance must pass both tests—first, *useful Arts* and, second, if it involves application of a basic principle (as here), *machine-or-transformation*, to ensure that the claim does not preempt the basic principle.[54] Failing *either* test results in patent-ineligibility. Bilski's claim is patent-ineligible at the threshold, as a claim to a method of engaging in commerce or business—activity recognized around 1789 as not within the useful Arts. It also fails the machine-or-transformation rebuttable-presumption test.

In theory, therefore, this case could be resolved solely under either test—useful Arts or machine-or-transformation. In our view, however, it makes an important difference which route the Court takes. The judgment of patent-ineligibility should be affirmed because "hedging" against price fluctuations is not within the useful Arts. That decisional route

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[53] *See* 145 Cong. Rec. H6944 (daily ed. Aug. 3, 1999) (statement of Rep. Rohrabacher).

[54] For example, as in the *Funk* and *Flook* cases.

provides more certainty, steers clear of the false negatives and positives that potentially derail the machine-or-transformation test, and avoids raising difficult-to-resolve questions, such as what is a "particular machine," how much transformation is necessary, and what "physicality" must "articles" have. Such issues should be postponed for cases whose records justify and require their resolution.

Moreover, if the judgment is affirmed because the claimed method is rebuttably presumed patent-ineligible, arguably the PTO has unfairly not given Bilski adequate notice that he was entitled to, and *must*, rebut the presumption to avoid rejection of his claim. That mandates vacatur and remand to the PTO to give Bilski the opportunity to try to rebut.[55]

In contrast, affirming the judgment because hedging future prices is not within the useful Arts moots other issues. As a matter of law, "hedging" is not within the useful Arts. Like exercising cats, it is categorically and irrebuttably patent-ineligible.

It is therefore more appropriate to affirm the judgment below simply on the ground that "hedging" is patent-ineligible under the interpretation of the statutory term "process" that the Patent Clause compels. Because Bilski's business method is not within the useful Arts, Bilski's process is not the kind of "process" that the Constitution, and therefore that the statute, permits to be the subject of a patent monopoly.

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[55] *Cf. Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 57 (1983) (vacating and remanding to agency); *FTC v. Sperry & Hutchinson Co.*, 405 U.S. 233 (1972) (same).

CONCLUSION

The court of appeals' judgment should be affirmed because "hedging" is not within the useful Arts.

Respectfully submitted,

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APPENDIX

APPENDIX A

US006701872B1

(12) **United States Patent**
Allen

(10) **Patent No.: US 6,701,872 B1**
(45) **Date of Patent: Mar. 9, 2004**

(54) **METHOD AND APPARATUS FOR AUTOMATICALLY EXERCISING A CURIOUS ANIMAL**

(76) Inventor: **Keith H. Allen**, 3874 Grove Ave., Palo Alto, CA (US) 94303

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/285,137**

(22) Filed: **Oct. 30, 2002**

(51) **Int. Cl.**[7] **A01K 15/02**
(52) **U.S. Cl.** **119/707**; 362/259
(58) **Field of Search** 119/702, 703, 119/704, 705, 707; 362/259

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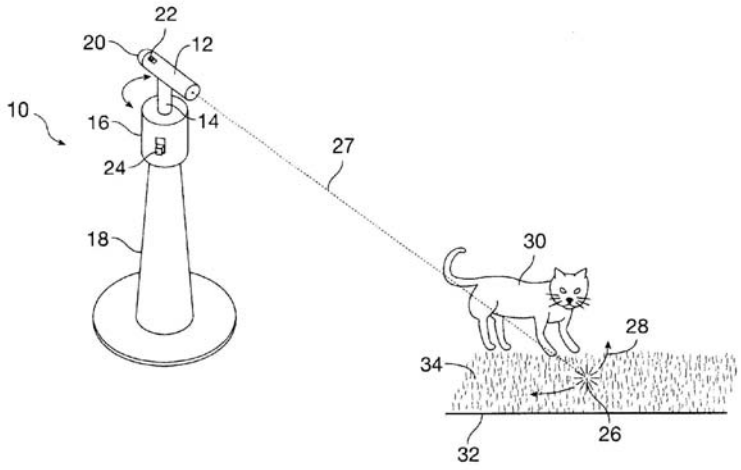
(57) **ABSTRACT**

An apparatus for exercising a curious animal such as a housecat comprises a laser pointer mounted on a shaft driven by a geared motor mounted on a pedestal. The rotatable shaft is preferably generally vertically disposed and the direction of the pointer is preferably obliquely downward so that activation of the motor causes the spot beam of the laser to track around the pedestal with a vector of motion to attract a cat into interaction with the spot beam. In a further specific embodiment, the laser pointer may be mounted on the head of an oscillatory air circulation fan with a pedestal. The oscillation of the spot beam, together with the air movement of the oscillatory fan, further stimulates activity in a cat while conveniently inducing convective cooling.

14 Claims, 1 Drawing Sheet



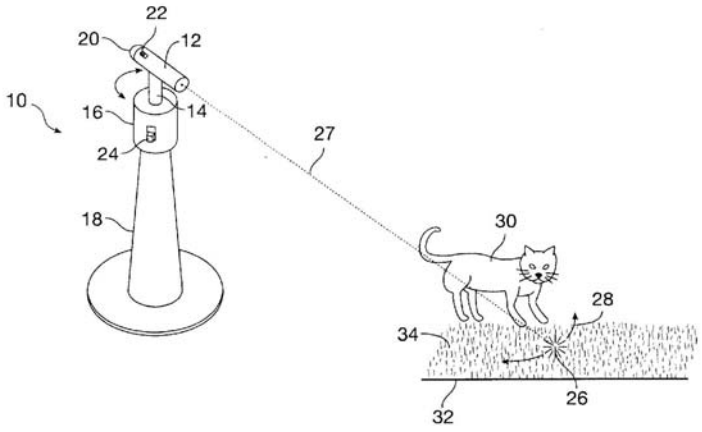


FIG. 1

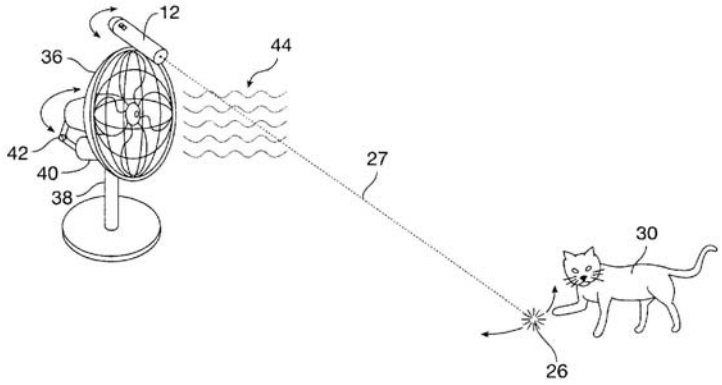


FIG. 2

METHOD AND APPARATUS FOR AUTOMATICALLY EXERCISING A CURIOUS ANIMAL

BACKGROUND OF THE INVENTION

This invention relates to apparatus for exercising curious animals, especially pet cats. This invention is an improvement over the invention described in U.S. Pat. No. 5,443,036 issued Aug. 2, 1995. Laser pointers are known and in particular it is known that cats are attracted by and stalk the spot of a laser pointed in their vicinity. It is also known that cats are attracted to the air movement of a fan, often to be cooled by such air movement. Heretofore the method for inducing exercise in a cat has been to manually move the spot beam in an arbitrary manner to stimulate exercise.

It has been found that the prior art exercise method is limited my the need for manual intervention, which may not always be desirable. An example is in a cage in a zoo, where large curious animals may need exercise. What is needed is an exercise apparatus which eliminates the need for manual intervention.

SUMMARY OF THE INVENTION

According to the invention, an apparatus for exercising a curious animal such as a pet housecat comprises a laser pointer mounted on a shaft driven by a motor mounted on a pedestal. The rotatable shaft is preferably vertically disposed and the direction of the pointer is preferably obliquely downward so that activation of the motor causes the spot beam of the laser to track a vector of motion to attract a cat into interaction with the spot beam. In a further specific embodiment, the laser pointer may be mounted on the head of an oscillatory air circulation fan with a pedestal. The oscillation of the spot beam, together with the air movement of the oscillatory fan, further stimulates activity in a cat while conveniently inducing convective cooling.

The invention will be better understood by reference to the following detailed descriptions in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a depiction of a first embodiment of an apparatus according to the invention.

FIG. **2** is a depiction of a second embodiment of an apparatus according to the invention.

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

Referring to FIG. **1**, an apparatus **10** according to the invention is shown. The apparatus **10** comprises a laser pointer **12** mounted on a rotatable shaft **14** driven by a motor **16** mounted on a pedestal **18**, which may rest on the floor as shown or be mounted to a ceiling or wall. The laser pointer **12** has a self-contained power supply **20** and an on/off switch **22**. A laser pointer is particularly appropriate as a source of production of the exercise object, a spot **26**, since the coherent nature of the light and the substantially colinear beam produce a characteristic animated speckel effect which does not substantially grow or shrink, nor increase or decrease in intensity, with distance from the source. The rotatable shaft **14** is preferably vertically disposed and the direction of the pointer **12** is preferably obliquely downward so that activation of the motor **16** by means of a power switch **24** and external or internal power causes the beam

spot **26** of the laser pointer **12** to track around an arc or along a vector **28** of motion such as around the pedestal **18** on the floor to attract a curious animal **30** such as a pet housecat into interaction with the moving spot **26**. Depending upon the terrain impinged upon by the beam **27** producing the spot **26**, such as a carpet **32** or the like with a fabric pile **34**, or even grass, the scattering of light of the beam **27** will effect animation of greater or lesser reflectivity with motion of the spot **26** along the vector **28**. This animation attracts and engages the curious animal **30** as it stalks and attempts to restrain the animated spot **26**, an impossible task. An extremely curious and persistent animal may spend hours at a time in this exercise, and this resultant exercise benefits the otherwise inactive animal without need for manual intervention to effect the motion of the spot **26**.

Referring to FIG. **2**, in a further specific embodiment, the laser pointer **12** may be mounted on the head of an oscillatory air circulation fan **36** on an appropriate pedestal **38**. A motor **40** causes an eccentric cam and linkage assembly **42** to oscillate the fan assembly **36** about a pivot of the pedestal **38**. The reciprocal oscillations of the beam **27**, together with the air movement **44** of the oscillatory fan **36**, cause the spot **26** to track back and forth along a vector, often staying in close range of the curious animal **30**. The spot motion and air movement further stimulates activity in the animal **30** while conveniently inducing convective cooling, providing potential relief and improved comfort for a fur-clad feline or the like, especially in a warm and/or humid environment.

The invention has been explained with reference to specific embodiments. Other embodiments will be apparent to those of ordinary skill in the art. For example, the pedestal mount can be a ceiling or wall mount. It is therefore not intended that this invention be limited, except as indicated by the appended claims.

What is claimed is:

1. An apparatus for exercising a curious animal comprising:

a pedestal;

a motor having a shaft, said motor being mounted to the pedestal; and

a laser pointer producing a spot beam and mounted on said shaft to project the spot beam from the pedestal, said motor causing said shaft to oscillate so that said spot beam tracks about said pedestal with a vector of motion to attract the curious animal into interaction with the spot beam.

2. The apparatus according to claim **1** wherein said shaft is generally vertically disposed.

3. The apparatus according to claim **2** wherein motion of said shaft invokes complete rotation of said spot beam.

4. The apparatus according to claim **1** wherein motion of said shaft invokes complete rotation of said spot beam.

5. The apparatus according to claim **1** wherein the rotatable shaft is preferably generally vertically disposed and the disposition of the laser pointer is preferably obliquely downward so that activation of the motor causes the spot beam to track around the pedestal.

6. An apparatus for exercising a curious animal comprising:

a pedestal;

a motor having a shaft, said motor being mounted to the pedestal;

a laser pointer producing a spot beam and mounted on said shaft to project the spot beam from the pedestal, said motor causing said shaft to oscillate so that said spot beam tracks about said pedestal with a vector of

motion to attract the curious animal into interaction with the spot beam; and

an oscillatory air circulation fan on a head, wherein said motor is mounted to provide oscillatory motion of said head, and wherein said laser pointer is mounted to said head such that said motor induces oscillation of the spot beam about said pedestal, together with the air movement of the oscillatory fan to stimulate activity in a cat while conveniently inducing convective cooling.

7. A method for automatically exercising a curious animal comprising:

providing a laser spot beam from a fixed location to an exercise area;

causing said spot beam to move under automatic action of a motor with a vector of motion to induce interaction of the curious animal with the spot beam.

8. A method for automatically exercising a curious animal comprising:

providing a laser spot beam from a fixed location to an exercise area;

causing said spot beam to move under automatic action of a motor with a vector of motion to induce interaction of the curious animal with the spot beam; and

causing air to be blown from a fan moveably mounted to said motor to stimulate the cat and to provide convective cooling to the curious animal.

9. An apparatus for exercising a curious animal comprising:

a portable pedestal capable of arbitrary deployment;

a motor directly driving a movable shaft, said motor being mounted to the portable pedestal; and

a laser pointer producing a spot beam and mounted fixedly with respect to said movable shaft to project the spot beam from the pedestal, said motor causing said shaft to oscillate so that said laser pointer oscillates and said spot beam tracks about said pedestal with a vector of motion to attract the curious animal into interaction with the spot beam.

10. The apparatus according to claim **9** wherein said shaft is generally vertically disposed.

11. The apparatus according to claim **10** wherein motion of said shaft invokes complete rotation of said spot beam.

12. The apparatus according to claim **9** wherein motion of said shaft invokes complete rotation of said spot beam.

13. The apparatus according to claim **9** wherein the rotatable shaft is preferably generally vertically disposed and the disposition of the laser pointer is preferably obliquely downward so that activation of the motor causes the spot beam to track around the pedestal.

14. A method for automatically exercising a curious animal comprising:

providing a laser spot beam from a rotating laser source mounted directly on a shaft driven directly by a motor mounted on a portable pedestal; and

causing said spot beam to move under automatic action of said motor directly driving said shaft to which said laser source is directly mounted with a vector of motion to induce interaction of the curious animal with the spot beam in an exercise area.

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APPENDIX B

CASRIP RESEARCH AFFILIATE SCHOLARS
AMICI CURIAE

The CASRIP Research Affiliate Scholars are professors of intellectual property law who are scholars affiliated with CASRIP but teach at law schools other than that of the University of Washington. The listing below of their respective law schools is for purposes of identification only.

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