

**SUPPLEMENTAL BRIEF OF *AMICUS CURIAE*
CENTER FOR ADVANCED STUDY AND RESEARCH
ON INTELLECTUAL PROPERTY (CASRIP) OF THE
UNIVERSITY OF WASHINGTON SCHOOL OF LAW
FOR HEARING *EN BANC*
SUPPORTING AFFIRMANCE
(PURSUANT TO COURT'S ORDER OF FEBRUARY 15, 2008)**

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

Appeal No. 2007-1130
(Serial No. 08/833,892)

IN RE BERNARD L. BILSKI AND RAND A. WARSAW

Appeal from the United States Patent and Trademark Office
Board of Patent Appeals and Interferences

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UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT
In re Bilski — No. 2007-1130
Form 9 — CERTIFICATE OF INTEREST

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4. There is no such corporation as listed in paragraph 3.

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INTEREST OF *AMICUS CURIAE*

Amicus files this brief pursuant to the Court's order of February 15, 2008.

Amicus has no financial interest in this case or any party thereto. Its sole interest is that patent law develop in a way that promotes the progress of useful arts in accordance with the constitutional mandate.

I. Summary Answers to Court's Questions

1. Bilski claims subject matter that is patent-ineligible because it fails to meet the requirements described below in paragraph 2. (Part III, *infra*.)

2. Whether a process is patent-eligible depends on these tests:

a. The most fundamental test of patent-eligibility is that the process or other claimed subject matter must be within the "useful Arts," as that term is used in Article I, § 8, clause 8. A process that is not within the useful Arts (or at least the same kind of thing as or akin to [*ejusdem generis* with] something within the useful Arts) is not the kind of process that the Constitution, and therefore 35 U.S.C. § 101, authorizes.¹ The process is patent-ineligible as a matter of law, even if it meets other standards of patent-eligibility, such as transformation of substances. *See generally Graham v. John Deere Co.*, 383 U.S. 1, 5-6 (1966) (Constitution limits congressional power to enact

¹ *See Parker v. Flook*, 437 U.S. 584, 593 (1978) ("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.").

patent laws); accord *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989); see also *Feist Pubs., Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 349 (1991) (same for copyright).

b. A claimed process that is within the useful arts is patent-eligible if it transforms one substance into another substance, thereby altering material physical properties of the substance, as in tanning, ore-smelting, or rubber-vulcanization. See *Corning v. Burden*, 56 U.S. (15 How.) 252, 267 (1853). Such a process is patent-eligible, even if the process is implemented with no specific device at all. This is the test that the patent-in-suit satisfied in *Cochrane v. Deener*, 94 U.S. 780 (1876); see also *Tilghman v. Proctor*, 102 U.S. 707 (1880) (pressure-heat fat-to-glycerin conversion). (The Supreme Court so explained those decisions in *Gottschalk v. Benson*, 409 U.S. 63, 69-70 (1972).²)

c. Claimed processes typically implement some underlying scientific principle, phenomenon of nature, or abstract idea (“underlying principle”) by using a device.³ A claimed process within the useful arts is patent-eligible if

² This Court’s panel decision in *In re Schrader*, 22 F.3d 290 (Fed. Cir.1994), extended the principle to signals representative of parameter values associated with a transformation of a physical object from one state to another state. *Bilski* does not present such a claim and this Court therefore need not consider whether that extension was correct.

³ As used here, “device” means a machine, article of manufacture, or other physical material. Processes are usually performed by using a machine, but they

it implements the underlying principle with a device that differs from what was already known in a way that is not concededly or facially trivial. The process then differs from what was already known in more than merely the fact that it uses the underlying principle. This is the test that the claimed process satisfied in *Diamond v. Diehr*, 450 U.S. 175 (1981),⁴ but failed to satisfy in *Flook and Benson*;⁵ see also *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127 (1948) (product, similar failure).

Processes that fail to meet this patent-eligibility standard, unless they transform substances, would if patented preempt the use of the underlying principle—and a policy decision has long since been made that such patents would more hinder than advance the progress of useful arts.⁶

d. A process that does not satisfy the patent-eligibility requirements of paragraphs *b* or *c* should be rebuttably presumed (or *prima facie*) patent-

may use other physical materials.

⁴ *Diehr*'s process satisfied this test because, on the record before the Court, the device-implementation was not concededly or facially trivial, as in *Flook*, 437 U.S. at 594. For other processes satisfying this test, see *The Telephone Cases*, 126 U.S. 1, 538 (1888) (explained, *Benson*, 409 U.S. at 69); *O'Reilly v. Morse*, 56 U.S. 62 (1853) (explained, *Benson*, 409 U.S. at 68).

⁵ *Benson*, *Flook*, and *Diehr* are referred to hereinafter collectively as the Supreme Court's patent-eligibility trilogy.

⁶ See *Morse*, 56 U.S. at 113. This ground of patent-ineligibility is separate from, although complementary to, the further ground that it would be unjust in principle and harmful to promotion of the progress of useful arts to allow a broad patent on undisclosed and non-enabled implementations that subsequent inventors might first devise. *Morse* rests on both these grounds. Cf. 35 U.S.C. § 112; *Brenner v. Manson*, 383 U.S. 519, 534-35 (1966).

ineligible. That fact pattern is the subject of the Court's question 4, and it is addressed under that heading. The tests of paragraphs 2*b-2c* are stated as alternative tests of patent-eligibility; 2*a* and 2*d* are rules of patent-ineligibility.

(Part II, *infra.*)

3. Claim 1 is patent-ineligible on multiple grounds. The claimed subject matter is not within the useful arts. Moreover, on its face, it constitutes a mere variation on an abstract idea (the well-known expedient of hedging), without any device-implementation at all—not even a trivial one. No recited step involves any meaningful, nontrivial physical activity, and no step effectuates any material substance-transformation. (Part III, *infra.*)

A claim that contains both mental and physical steps constitutes patent-eligible subject matter only if the physical steps satisfy the requirements stated above in paragraph 2.

4. In principle, a process somehow might not result in a substance-transformation, not be tied to a machine, and yet be within the useful Arts—and be patent-eligible. Nonetheless, specific illustrative *real* examples are lacking.⁷ Therefore, as a factual matter—but not necessarily in principle—device-implementation and substance-transformation remain the true “clues” to patent-

⁷ For imagined processes, see Part IV, *infra.*

eligibility of processes.⁸ Case-specific facts will probably never require this Court to *hold* that a real process is patent-eligible without satisfying the device-implementation or substance-transformation requirements, at least in the present state of technology. It is proper on the basis of experience to adopt a rebuttable presumption of patent-ineligibility for processes that do not satisfy those requirements. *See Benson*, 409 U.S. at 71 (“We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents [on substance-transformation and device-implementation.]”).⁹ (Part IV, *infra*.)

5. The Court should reconsider the panel decisions in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir.1998), and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir.1999). They were wrongly decided, ignored *Flook* or wrongly treated it as overruled *sub silentio*, misinterpreted *Diehr*, misapplied the en banc decision in *In re Alappat*, 33 F.3d 1526 (Fed. Cir.1994), and have been injurious to the development of patent law. Now, a decade later, their result has been to make the law as to software-related and business-method patents chaotic and unprincipled, as commentators and legislators recognize. Those panel decisions should be clarified and declared

⁸ *See Diehr*, 450 U.S. at 184; *Flook*, 437 U.S. at 588 n.9; *Benson*, 409 U.S. at 70.

⁹ *Accord Flook*, 437 U.S. at 588 n.9 (“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.”),

non-authoritative insofar as they are inconsistent with the patent-eligibility principles stated above in paragraph 2. Nonetheless, reconsideration and clarification do not compel exhaustive, explicit identification and overruling of prior inconsistent case-law. (Part II-A, *infra*.)

II. The Standard That Should Govern in Determining Whether a Process is Patent-Eligible Subject Matter Under § 101

A. Background

This Court took a wrong turn in panel decisions after *Alappat* in abandoning the device-implementation test restated in *Schrader*.¹⁰ That test, based on the Supreme Court's patent-eligibility trilogy, represented a reasonable approximation of at least part of the Supreme Court's teachings on patent-eligibility. *Alappat*, although ambiguous, did not expressly and clearly reject those teachings: its text lent itself to a reading that *Alappat* continued existing precedent in effect (as well as to an interpretation, later espoused in *State Street*, that it radically rejected earlier precedent). Thus, by reading apparatus limitations into the means-plus-function claim from the specification per § 112, *Alappat* could properly be read as holding that the apparatus limitations conferred patent-eligibility on the claim and limited its otherwise preemptive scope.¹¹ Moreover, the en banc *Alappat* opinion

¹⁰ The *Schrader* test restates, elaborates, and explains the so-called *Freeman-Walter-Abele* test. See also *Arrhythmia Research Tech. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir.1992); *In re Abele*, 684 F.2d 902 (CCPA 1982).

¹¹ See *Alappat*, 33 F.3d at 1541. Its holding of patent-eligibility is thus

distinguished, rather than overruled, case-law inconsistent with it: it termed the earlier rulings ones that business methods (not involved in *Alappat*) were patent-ineligible because they were not in the enumerated categories of § 101, rather than rulings on what were patent-ineligible abstract ideas.¹² That left patent-eligibility law ambiguous until the *State Street* and then *Excel* panel decisions¹³ held squarely that business methods lacking non-trivial device limitations or substance-transformation were patent-eligible.

Those decisions upheld the patent-eligibility of a tax-avoidance scheme and an expedient for inducing telephone customers to give business to the patentee by giving them discounts when both they and their called-parties utilized the same telephone company. Neither scheme is within the useful arts. To the extent that *State Street* and *Excel* are said to support a “useful, concrete, and tangible” standard for patent-eligibility, rather than a test of patent-ineligibility for subject

properly limited to claims with apparatus limitations in them, expressly or by implication because of means-plus-function format. To the extent that the panel opinions in *State Street* and *Excel* interpret the en banc *Alappat* decision otherwise, they should be regarded as non-authoritative. In any event, the en-banc *Bilski* Court is entirely free to bring its decisional law back into harmony with that of the Supreme Court.

¹² See *Alappat*, 33 F.3d at 1541 (“*Maucorps* dealt with a business methodology for deciding how salesmen should best handle respective customers and *Meyer* involved a ‘system’ for aiding a neurologist in diagnosing patients. Clearly, neither of the alleged ‘inventions’ in those cases falls within any § 101 category.”).

¹³ There has been no en-banc patent-eligibility opinion of this Court since *Alappat*.

matter failing the test,¹⁴ the test misreads the decisions of the Supreme Court and reads § 101 out of Title 35. *See Laboratory Corp. v. Metabolite Labs., Inc.*, 126 S.Ct. 2921, 2928 (2006) (Breyer, J., dissenting) (pointing out how that test makes things patent-eligible that Supreme Court held patent-ineligible). It is therefore time for this Court to re-assess the requirements for patent-eligibility, to try to restore order, and to restate standards for patent-eligibility that conform to the requirements of the Constitution and Supreme Court case-law.

In bringing its post-*Alappat* jurisprudence back into alignment with the decisions of the Supreme Court, this Court need not expound in great detail on such panel decisions as *State Street* or *Excel*, or elaborate on the specifics of how they may have misunderstood earlier precedent. *Bilski* being en banc, it suffices to explain affirmatively the proper legal principles and then state merely that all prior circuit decisions inconsistent with this Court's *Bilski* decision must now be considered non-authoritative.

B. Issues Addressed in Prior Patent-Eligibility Decisions

Some of the requisite patent-eligibility analysis covers old ground, which the Supreme Court has mapped extensively in its patent-eligibility trilogy. Thus, the trilogy and its explanations of earlier decisions already provide the answers to most

¹⁴ The fallacy, as illustrated in Appellants' Supp. Br. 7-8, is to regard this test as one anointing as patent-eligible all processes that satisfy it—instead of as a negative test making processes that fail to satisfy it patent-ineligible.

of this Court's second question.

For example, *Benson's* and *Flook's* analyses of Nineteenth Century case-law teach us to distinguish between processes tied to a specific device and processes not so limited. A large body of case-law addresses processes that have as their only material point of departure from what was previously known the use of a scientific principle, phenomenon of nature, or abstract idea. The process may require use of no device at all—as in the case of a process for communicating intelligible signs at any distance by use of the electromagnetic force, however developed (Morse's claim 8).¹⁵ In that case the process will be patent-ineligible because the patent preempts others' use of the underlying principle, phenomenon, or idea.

Such a process may instead require only facially-trivial device-implementation, as in the case of a method for providing an “inoculant” that works for several different nitrogen-fixing plants, said method comprising placing into a single package several different non-mutually-inhibitive *Rhizobium* strains, each of the strains respectively specific for one of the several plants. *See Funk, supra*,¹⁶ *see also Armour Pharm. Co. v. Richardson-Merrell, Inc.*, 396 F.2d 70, 74 (3d

¹⁵ In *Benson*, one appealed claim specified no device limitation and the other claim specified a facially trivial device limitation—that the numerical calculation be performed using a conventional part of a digital computer (a shift register).

¹⁶ *Funk* involved a claim for the package as a product rather than for the process, but the principle is identical. *Funk's* patent also contained process claims, 333 U.S. at 128 n.2, which the Court did not address. The same general considerations govern patent-eligibility analysis for processes and products. *Excel*, 172 F.3d at 1357-58; *State Street*, 149 F.3d at 1372.

Cir.1968) (facially-trivial device-implementation of newly-discovered natural phenomenon); *National Lead Co. v. Western Lead Co.*, 324 F.2d 539 (9th Cir.1963) (similar); *Davison Chem. Corp. v. Joliet Chems., Inc.*, 179 F.2d 793 (7th Cir.1950) (similar); *Loew's Drive-In Theatres v. Park-In Theatres*, 174 F.2d 547 (1st Cir.1949). Again, the effect of a patent is to preempt the use of the underlying principle. As *Flook* explains, when it must be conceded (as respondent did in that case, 437 U.S. at 588) that the claim contains no substantial departure from what was already known, except for use of the underlying principle, then it must be concluded that the claim is not patent-eligible because the underlying principle must be treated as if it too were already known. See *Flook*, 437 U.S. at 592 (quoting *Neilson v. Harford*, 151 Eng. Rep. 1266, 1272, 8 M. & W. 806, 820 (Exch.1841)).

Other processes, however, may not be limited in their departure from what is already known merely to their incorporation or use of a given scientific principle, natural phenomenon, or abstract idea. They are patent-eligible when tied to a device-implementation specially adapted for performing the process and not concededly-old or facially-trivial.¹⁷ *Diehr*, *supra* note 4 and accompanying text; *Flook*, 437 U.S. at 594.¹⁸

¹⁷ They may, however, lack novelty or be obvious. Those are different issues.

¹⁸ Bell's process claim, held valid and infringed, was to a voice-

Still other processes are patent-eligible because they transform one substance into another, and thereby materially change the physical properties of the substance to provide new functionality, as in smelting or vulcanization.¹⁹ See *Cochrane, supra*²⁰ (as explained in *Benson*); see also text preceding *supra* note 2.²¹

All of this is well-travelled ground and this brief will not address it further.

telecommunication process using specified apparatus—either a variable resistance or electromagnetic (“magneto”) transducer. Morse’s claims, other than claim 8, satisfied this test: thus, a claim to all telecommunication use of electromagnetism carried out with Morse’s “repeater” apparatus passes this test.

¹⁹ The physical-transformation label, rather than *substance-transformation*, is sometimes used to describe this patent-eligibility test, but that terminology has been misunderstood and creates more confusion than clarification (what is “physical”?). Some *amici*, for example, assert that altering signals representative of data physically-transforms voltage levels within a computer to confer patent-eligibility. In the same vein, they argue that differently programming a computer physically-transforms it into a new machine, as if placing a different piano-roll into a player-piano transforms it into a new player-piano. Every Supreme Court decision reviewed in *Benson*, 409 U.S. at 69-71, where a transformation conferred process-patent-eligibility involved a substance-transformation. As *Benson* explained, in such cases “the use of chemical substances or physical acts, such as temperature control, changes articles or materials” to “transform the...material.” *Id.* at 69.

²⁰ Accord *Tilghman, supra* (explained in *Benson*, 409 U.S. at 70). Another paradigmatic process example is vulcanizing rubber by heating it in the presence of sulfur, which changes the molecular arrangement and physical properties of the rubber by cross-linking its polymers with sulfur atoms. Vulcanization converts a soft, gummy product to a hard, elastic product.

²¹ The extension of this principle in *Schrader* to transformations involving signals representative of parameter values associated with states of a physical object is beyond the scope of this case, for *Bilski*’s claim does not implicate that principle. It is uncertain that *Schrader*’s attempt to extend, and correct what it perceived as errors in, the Supreme Court’s analyses was well-advised. Resolving that issue, however, is unnecessary to the disposition of this case.

C. Useful-Arts Issues

1. Some Processes Satisfy the Usual Requirements of Patent-Eligibility But Are Patent-Ineligible Because They Are Not Within the Useful Arts

One facet of the patent-eligibility problem has received insufficient attention: the constitutional requirement that the patent statute must promote the progress of “useful Arts,” which necessarily means that patent grants must be limited to processes (and devices) within the useful Arts.²² It is possible for a process (or device) to satisfy all of the requirements discussed so far and yet be patent-ineligible because it is outside the useful Arts. The process may be tied to a machine; the process may be more than merely a facially-trivial or concededly-old implementation of a scientific principle, natural phenomenon, or abstract idea; the process may even cause a substance-transformation; and even if the result is tangible and useful, the claimed subject matter may still be patent-ineligible. Some examples will illustrate the point that being within the useful Arts is the *sine qua non* of patent-eligibility.

Consider the machine of Kafka’s *In the Penal Colony*. It is a machine that cuts into the skin of culprits words appropriate to the crimes they committed, and its process continues until they expire from loss of blood. The subject matter is:

²² See also *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.”).

A machine, said machine adapted to hold a person immobile, said machine comprising:

- a programming unit, said unit adapted to be programmed with instructions corresponding to preselected words, said unit adapted to transmit signals representative of said instructions; and
- a writing module, said module coupled to said programming unit and adapted to receive said signals therefrom, said module comprising a needle adapted to contact, penetrate, and traverse the skin of the person, said module capable of causing said needle to inscribe said preselected words on the skin of the person, responsively to said signals from said programming unit.

A process for administering to a culprit a punishment appropriate to a crime that the culprit committed, said process comprising:

- (1) strapping the culprit into a machine (repeat substance of above machine claim);
- (2) programming said programming unit with a name or a verbal description of the crime;
- (3) initiating operation of said writing module; and
- (4) continuing said operation of said writing module until the culprit expires.

Such a machine, whose function is “to make the punishment fit the crime,” is not within the useful Arts, and the process version of the machine claim, tied to the machine and claimed as a process for imposing a punishment that fits the crime, would equally be outside the useful Arts. The machine and process meet all the usual non-constitutional tests of patent-eligibility, but the *function* of the machine and process (making punishment fit crime) is outside the useful arts, and promoting accomplishment of that function cannot promote progress of useful Arts.

Consider next Ovid’s *Ars amatoria* or Casanova’s *Memoirs*, from either of

which can be derived processes for seduction of young women, comprising such-and-such steps.²³ Those processes may be deemed useful, concrete, tangible, valuable, and other things that might seem to make them patent-eligible, but the processes are unquestionably not within the useful Arts as that term is used in Article I, § 8, clause 8. Similarly, claims to processes for making people laugh that comprise telling them anecdotes beginning, "Take my wife, please," must be patent-ineligible, as are claims to slapstick-comedy routines.²⁴

It is manifest, therefore, that the tests that have heretofore figured in patent-eligibility litigation, including even those derived from the Supreme Court's patent-eligibility trilogy, are incomplete and incapable of addressing some processes (and devices) that we "know it when [we] see it" are patent-ineligible.²⁵ Moreover, the standards enunciated in *State Street* and *Excel* are at least equally incapable of dealing satisfactorily with such subject matter. A further test based on the constitutional requirements for patent-eligibility must be added.

²³ Ovid suggests that he will teach the reader such processes and terms himself the "professor of love" (*ego sum praeceptor amoris*). See, e.g., *ARS AMATORIA*, Book I (opening lines).

²⁴ Slapstick-comedy routines ordinarily have device limitations, such as a paddle or cream pie, while take-my-wife-please can be revised to add a nominal-apparatus limitation, if that makes any difference, by designating the process one for making a large room of people laugh and by adding a microphone and sound system. Users of such processes are financially well-rewarded for performing them, making them economically valuable (a supposed badge of patent-eligibility).

²⁵ Cf. *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964). This should be not so much a positive test as a reality-check.

2. The Constitution Places a Useful-Arts Limitation on Congressional Power To Grant Patents on Innovations

Advances outside the useful Arts, no matter how meritorious, valuable, or concrete, even if brought about by using machinery, cannot be protected under statutes that the Constitution has limited to the promotion of progress of useful Arts. Since *Graham*, it is no longer open to any doubt that Article I, § 8, clause 8 acts as a limitation as well as a grant of congressional power to legislate as to patents:

At the outset it must be remembered that the federal patent power stems from a specific constitutional provision which authorizes the Congress “To promote the Progress of...useful Arts, by securing for limited Times to...Inventors the exclusive Right to their... Discoveries.” Art. I, § 8, cl. 8. The clause is both a grant of power and a limitation. This qualified authority, unlike the power often exercised in the sixteenth and seventeenth centuries by the English Crown, is limited to the promotion of advances in the “useful arts.” It was written against the backdrop of the practices—eventually curtailed by the Statute of Monopolies—of the Crown in granting monopolies to court favorites in goods or businesses which had long before been enjoyed by the public. 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.

Graham, 383 U.S. at 5-6 (footnote and citation omitted); accord *Bonito Boats*, 489 U.S. at 146 (“As we have noted in the past, the Clause contains both a grant of power and certain limitations upon the exercise of that power.”); see also *Feist*, 499 U.S. at 346-47 (1991) (Constitution limits copyright to original works of authors).

Just as the *Graham* Court held that “obvious” in § 103 must be interpreted with “reference to a standard written into the Constitution,” *see Graham*, 383 U.S. at 6, so too must “process” in § 101 be interpreted with reference to the constitutional limitation to useful Arts. Congress may no more authorize patents on things outside the useful Arts than it can enact non-uniform bankruptcy laws under the Bankruptcy Clause or the Commerce Clause, *see Railway Labor Executives Ass’n v. Gibbons*, 455 U.S. 457 (1982), or protect non-discoveries and non-writings under Article I, § 8, clause 8, *see The Trademark Cases*, 100 U.S. 82, 94 (1879). Thus, a patent on a process for making or doing something not within the useful Arts exceeds Congress’s power.

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

Accordingly, this Court must find a way to determine whether given human activities are within the useful Arts. It might be thought that recourse to dictionaries or literature in which the word “process” occurs would help, but that inquiry would fail at the outset. First, the word “process” is the 1952 Act’s substitute for the original statutory and constitutional word “art.” Therefore, looking up “process” and its usage will get us nowhere. Second, the exercise is futile because the Supreme Court has already held, in *Flook*, that the meaning of “process” for

purposes of § 101 is *not* the ordinary or literal meaning of the word.²⁶ To make a textual analysis, we can turn only to the Constitution and seek to ascertain what the term “useful Arts” meant in and around 1789.²⁷ To the extent that dictionaries are any help, we must look to dictionaries published in the Eighteenth Century or perhaps a century earlier.²⁸ Unfortunately, those dictionaries turn out not to be helpful guides to the meaning of the phrase “useful Arts,” particularly in regard to the distinction between useful and other arts.²⁹ Literary sources, however, may be of some value. George Washington, for example, explicitly distinguished commerce from useful arts.³⁰

²⁶ *Flook*, 437 U.S. at 588-89 (“The plain language of 101 does not answer the question. It is true, as respondent argues, that his method is a ‘process’ in the ordinary sense of the word. But that was also true of the algorithm, which described a method for converting binary-coded decimal numerals into pure binary numerals, that was involved in *Gottschalk v. Benson*. The holding that the discovery of that method could not be patented as a ‘process’ forecloses a purely literal reading of 101.”).

²⁷ This is the approach that *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 376-82 (1996), suggests—looking to practice in and preceding the Eighteenth Century.

²⁸ See *Smiley v. Citibank (S.D.), N.A.*, 517 U.S. 735, 745 (1996) (using dictionaries from era in which statute was passed).

²⁹ Neither Samuel Johnson nor Noah Webster defined “useful arts.”

³⁰ In a January 29, 1798 letter to Lafayette, Washington distinguished commerce from useful arts by stating, “While our commerce has been considerably curtailed for want of that extensive credit formerly given in Europe, and for default of remittance; the useful arts have been almost imperceptibly pushed to a considerable degree of perfection.” THE WRITINGS OF GEORGE WASHINGTON FROM THE ORIGINAL MANUSCRIPT SOURCES, 1732-1799 (Fitzpatrick ed.). Several other literary sources are collected in PTO Supp. Br. 11 n.4 (useful arts are manufacturing processes).

An even more useful approach is to consider the kinds of patents issued in the period near and preceding the adoption of the Constitution, and the “the backdrop of the practices” that led to the passage of the Statute of Monopolies and ultimately to the Patent Clause and its built-in restraints on power. *See Graham*, 383 U.S. at 5-6. The first two patents that issued under the first federal patent statute were on manufacturing processes—potash-making and candle-making.³¹ Earlier colonial patents 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.³²

While a clear conceptual distinction can be made between useful arts and science—which the Constitution invokes³³—it is doubtful that a general organizing principle can be articulated at this time for distinguishing between useful Arts and all other arts and things, other than to say that useful Arts are what practical

³¹ 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 Sampson on a method of making candles. The only other 1790 patent (No. X3, Dec. 18) issued to Oliver Evans for flour-milling machinery.

³² *See* V.S. CLARK, *HISTORY OF MANUFACTURES IN THE UNITED STATES* 48-50 (1916); J. LEANDER BISHOP, *HISTORY OF AMERICAN MANUFACTURES* 476 (3d ed. 1868).

³³ *See* Sean M. O’Connor, *Using Insights From the History of Science to Redefine Patentable Subject Matter Under the IP Clause of the U.S. Constitution*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1104899 (last visited April 1, 2008) (science—as classically and narrowly understood as inquiry into underlying laws and causes of observed phenomena without regard to their application to satisfying human needs or desires—were expressly *not* part of the arts, generally, and thus *not* within the useful arts).

artisans do. It is possible, however, to make two lists—a catalog of arts clearly recognized as useful Arts³⁴ and one of arts and other human endeavors clearly recognizable as not within the useful Arts,³⁵ at the time of the adoption of the Constitution. It is also possible, although with somewhat more difficulty, to make a determination of what is akin to (*ejusdem generis* with) the members of each list. These lists will aid a court in making the legal determination whether a given claimed process is patent-eligible with respect to the useful-Arts criterion.³⁶

In determining what are the useful arts, a court should also consider the monopolies “backdrop” that illuminates what the framers believed should *not* be the subject of exclusive rights. *Graham*, 383 U.S. at 5-6. The East India Company’s tea monopoly, which had led to the Boston Tea Party a decade earlier, is one example of what is not within the patent-eligible useful Arts. The East India

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.*, JACOB BIGELOW, *ELEMENTS OF TECHNOLOGY* (1831) (lectures on application of science to the useful arts).

³⁵ A partial list of arts and things clearly recognized as *not* within the useful Arts in and around 1789 follows: the seven liberal arts (arithmetic, geometry, music, astronomy, grammar, rhetoric, and logic), dancing, fencing, and poetry. Buying, selling, and otherwise engaging in business, trade, or commerce—even in manufactures—were not considered arts. *See, e.g., supra* notes 27 and 34.

³⁶ Insofar as the legal determination rests on underlying facts, the court must ascertain them, as with contract interpretation, claim construction, and statutory construction.

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 grant of a monopoly over *trade* with the American Colonies, which gave it a franchise to mulct the colonists by extracting monopoly rent from them, to enrich the Company's shareholders. *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 having invented an improved way to *manufacture* playing cards; his patent gave him the exclusive right to *sell* playing cards, simply as a royal favor from the Queen,³⁷ again a franchise to mulct the public by extracting monopoly rent from it. Neither engaging in trade 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 the operation of any 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.³⁸ Legal history thus informs courts of practices that should be considered outside the useful Arts.

³⁷ See *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 229 (1964).

³⁸ 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.*

Clearly, it would be preferable to articulate a general principle than to extrapolate from an enumeration of examples. But efforts to do so have as yet been unsuccessful. An effort of this kind was based on a proposed equation of the useful Arts to the technological arts,³⁹ but it foundered.⁴⁰ Although the technological-arts test has great intuitive appeal, it also has severe difficulties. First, the Constitution and the statute do not mention “technology” or “technological arts.” Accordingly, it is difficult to frame a plausible, principled argument for imposing this requirement on patent-eligibility. Further, 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. For example, is making potash by boiling wood-ash in water a technological art? Is candle-making? Shoe-making? Tanning? Are all of the things that we know were considered useful Arts in and before 1789 in the technological arts? That is doubtful. Yet, surely it is impermissible to interpret constitutional language to exclude things that we know were included within the concept in 1789. *Cf. Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir.1996) (claim construction that excludes preferred embodiment “is rarely, if ever correct”). Finally, the technological arts are

³⁹ See *In re Toma*, 575 F.2d 872 (CCPA 1978); *In re Musgrave*, 431 F.2d 882, 893 (CCPA 1970).

⁴⁰ See *Ex Parte Lundgren*, 76 USPQ2d 1385, 1388 (BPAI 2005) (precedential) (“Our determination is that there is currently no judicially recognized separate ‘technological arts’ test to determine patent eligible subject matter under § 101. We decline to create one.”).

only a subset of the useful Arts. If one accepts that technology is the application of the sciences (*e.g.*, chemistry) to the useful Arts, the resulting technological arts are only those useful Arts derived from scientific knowledge—but some useful Arts are purely empirical and non-theoretical.⁴¹ As yet, Congress has not chosen to narrow the patent-eligible useful Arts to only those that are *technological*—at least in the sense used here.

A reasonable question to pose in considering the proposal of *amicus* to define the useful Arts by extrapolating from a catalog of known useful Arts is whether using that principle can successfully sweep up advances in all useful Arts as they occur and thus promote *progress* of useful Arts. Surely, the framers did not intend to freeze promotion of the progress of the useful Arts by excluding new categories of artisanal inventions. But correct application of the principle, at times proceeding incrementally through intermediate arts, will sweep up all artisanal advances, because that is how technology and the useful arts operate: they build accretionally on earlier developments. For example, integrated circuits are akin to 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.⁴² The manufacture of electric light-

⁴¹ See BIGELOW, *supra* note 34 at 1-6; O'Connor, *supra* note 33 at 7.

⁴² See also H.L. BARBER, STORY OF THE AUTOMOBILE 58-59 (1917) (1787 Maryland patent on steam-propelled horseless-carriage).

bulbs, an example of accretional evolution, is akin to candle-making, allied perhaps with glass-making; and the vacuum tube is historically an outgrowth of and akin to the electric light-bulb. There may be difficulties in applying the incremental approach, perhaps, but they are not insurmountable, and it has the advantage of being more principled than the alternatives.

III. Application of Foregoing Standards to *Bilski* Case

Bilski's process is clearly not within one of the useful Arts recognized in 1789, such as tanning or dyeing, nor is it akin to any of them.⁴³ It is akin to buying and selling, which were not arts at all, much less useful arts. Engaging in trade was never regarded as a useful art. Moreover, *Bilski*'s process is akin to practices—for example, engrossing—that the common law regarded as equivalents of the odious monopolies and therefore similarly abhorred and condemned.⁴⁴ The exclusive right to engage in the business of hedging against risks in price-fluctuations of input-factors, where one set of commodity-transactions “balances the risk position” of another set of commodity-transactions, without limitation to any particular implementing-device, effectively engrosses that whole business expedient, however practiced—as the East India Company engrossed the whole American tea trade. *Bilski*'s process both is not within the useful Arts and is within the category of endeavor against which the respective framers of the Statute

⁴³ See *supra* note 33.

⁴⁴ See *Standard Oil Co.*, 221 U.S. at 53, and *supra* note 37.

of Monopolies and the Patent Clause sought to protect the public.⁴⁵

In addition, Bilski's claim implements without any physical device the abstract idea of hedging to reduce the risk that an input-factor's price might change, and therefore preempts the abstract idea. It extends to any and all use of the idea, as in *Flook* and *Benson*, and the process is not substance-transformative. Accordingly, Bilski's process is not patent-eligible under rules 2*b* or 2*c*, *supra* Part I. Bilski has done nothing to rebut these "clues" of patent-ineligibility (rule 2*d*). Therefore, Bilski's claim was properly rejected under § 101.

IV. Can a Process Be Patent-Eligible Without Substance-Transformation and Device-Implementation?

In answer to the Court's fourth question, *amicus* proposes that a process that is not substance-transformative or device-implemented should be rebuttably presumed patent-ineligible (*prima facie* patent-ineligible). Specific real examples are lacking of patent-eligible processes that contradict this rule,⁴⁶ but that may merely reflect the limited state of our present knowledge. Thus, the *Benson* Court said,

⁴⁵ See *Joseph E. Seagram & Sons v. Marzall*, 180 F.2d 26, 28 (D.C. Cir.1950) (denying patent on "blind testing" whiskey blends because patent would be "a serious restraint on the advance of science and industry").

⁴⁶ Appellants' Supp. Br. 14-15 mistakenly argues that 35 U.S.C. § 273(a)(3), makes business methods that "contain non-trivial claim provisions limiting the scope of a method to specific and particular applications" patent-eligible even if they lack device-implementation or substance-transformation. But the opening words of § 273(a) are, "For purposes of this section...." Nothing in § 273 creates a general, patent-code-wide exception to *Benson* for business methods, or explicitly endorses them. In any case, engaging in commerce is not within the useful Arts, which makes appellants' supposed exception constitutionally patent-ineligible.

“We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents [on substance-transformation and device-implementation],” *Benson*, 409 U.S. at 71, which suggests that it would be better to adopt a rebuttable presumption than a absolute rule that such processes are never patent-eligible.⁴⁷

Certainly, processes contradicting the rule can be imagined that would be patentable if they worked (which, unfortunately, they do not). Such imagined processes (some are even transformative) include: smelting ores by pyrokinetic means, rubber-vulcanization and other polymerization-processes effectuated by psychokinesis, heating/cooling places by using psychokinesis to separate fast and slow air molecules (Maxwell’s Demon processes), and washing out a stable by hydrokinesis.⁴⁸ The problem with such imagined processes is not that they fail to resemble useful Arts, but rather that they do not work and thus lack utility for purposes of § 112, at this time.⁴⁹ Therefore, it remains uncertain that past experience of the uniform correctness of the proposition that device-implemen-

⁴⁷ In *Benson*, the Government expressly argued for an absolute rule—“we submit that the cases follow such a rule—implicitly or explicitly—and that they cannot be rationalized otherwise.” See Petr. Reply Br. 9. The *Benson* Court declined to accept the argument. It may well be that no applicant will ever successfully rebut the presumption of patent-ineligibility, but we cannot be sure, even though no one has yet suggested any set of circumstances that would rebut the presumption.

⁴⁸ Cf. *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976).

⁴⁹ See *In re Brana*, 51 F.3d 1560 (Fed. Cir.1995); see also *Newman v. Quigg*, 877 F.2d 1575, 1582 (Fed. Cir.1989) (perpetual-motion device).

tion and substance-transformation are the sole clues to patent-eligibility of processes will project indefinitely into the future. Accordingly, a rule of *prima facie* patent-ineligibility (proposed rule 2*d*) is preferable.⁵⁰

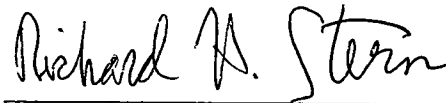
CONCLUSION

The Board's rejection of Bilski's claim was correct because, as a matter of law, Bilski's hedging scheme is not within the "useful Arts," and therefore is not a "process" within the meaning of § 101. In addition, Bilski's claimed process neither transforms substances nor does it implement in a device the abstract idea of hedging against input-factor price changes; and Bilski has suggested nothing that could rebut the *prima facie* presumption of patent-ineligibility thereby created.

⁵⁰ A similar argument and *prima facie* rule apply for the mental-steps doctrine, as well. However, a separate mental-steps doctrine is unnecessary, because proposed rules 2*a*-2*d* appear to cover all cases that a mental-steps doctrine would address, making the latter superfluous regardless of its correctness.

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I hereby certify under Federal Rule of Appellate Procedure 32(a)(7)(c)(i) that this brief contains **6950** words as counted by the word processing program used to prepare the brief (Microsoft Office Word 2003) and therefore complies with Federal Rule of Appellate Procedure 29(d) and the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B)(i).

Richard A. Stern

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