

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, U.S. PATENT  
AND TRADEMARK OFFICE  
*Respondent.*

---

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

**BRIEF OF ELEVEN LAW PROFESSORS  
AND AARP AS *AMICI CURIAE*  
IN SUPPORT OF RESPONDENT**

---

BARBARA JONES  
AARP FOUNDATION  
LITIGATION  
200 South Robles  
Suite 400  
Pasadena, CA 91101  
(626) 585-2628  
Attorney for  
*Amicus Curiae* AARP

JOSHUA D. SARNOFF  
Counsel of Record for  
*Amici Curiae*  
Washington College of Law  
American University  
4801 Mass. Ave., NW  
Washington, DC 20016  
(202) 274-4165

October 2, 2009

---

---

**TABLE OF CONTENTS**

|  | <b>Page</b> |
|--|-------------|
| TABLE OF CONTENTS .....  | i           |
| TABLE OF AUTHORITIES .....   | iii         |
| INTERESTS OF <i>AMICI CURIAE</i> .....   | 1           |
| SUMMARY OF THE ARGUMENT.....   | 3           |
| ARGUMENT .....   | 4           |
| I. FOR A CLAIM APPLYING SCIENCE,<br>NATURE, OR IDEAS TO BE ELIGIBLE,<br>THERE MUST BE INVENTION IN THE<br>APPLICATION.....   | 4           |
| A. The Invention in the Application<br>Test Performs a Necessary Gate-<br>Keeping Role, Different from<br>Novelty, Non-Obviousness, and<br>Adequacy of Disclosure..... | 10          |
| B. Particularity Or Tangibility, Which<br>Is Required By The Machine or<br>Transformation Precedents, Is<br>Insufficient Without Invention in<br>the Application.....  | 17          |

|     |  |    |
|-----|--|----|
| C.  | The Claims At Issue Are Ineligible,<br>Non-Inventive Applications of an<br>Abstract Idea.....  | 22 |
| II. | NEITHER THE CONSTITUTION NOR<br>THE PATENT ACT AUTHORIZES<br>PATENTS FOR NON-INVENTIVE<br>APPLICATIONS OF SCIENCE, NATURE<br>AND IDEAS.....      | 26 |
| A.  | The Changes Made in the 1952<br>Patent Act Did Not Alter the<br>Invention in the Application Test. ....  | 29 |
| B.  | Interpreting the Patent Act to<br>Authorize Patents for Non-Inventive<br>Applications Would Conflict With the<br>Limits in the Constitution..... | 32 |
|     | CONCLUSION.....  | 35 |
|     | APPENDIX A – LIST OF <i>AMICI CURIAE</i> LAW<br>PROFESSORS   |    |

**TABLE OF AUTHORITIES****CASES**

|  |        |
|--|--------|
| <i>In re Abele</i> , 864 F.2d 902 (C.C.P.A. 1982) .....  | 22     |
| <i>In re Alappat</i> , 33 F.3d 1526 (Fed. Cir.<br>1994) (en banc) .....                                    | 8, 22  |
| <i>Alexander v. Sandoval</i> , 532 U.S. 275<br>(2001) .....  | 32     |
| <i>Anderson's-Black Rock, Inc. v. Pavement<br/>Salvage Co.</i> , 396 U.S. 57 (1969) .....                  | 24     |
| <i>Ansonia Brass &amp; Copper Co. v. Elec.<br/>Supply Co.</i> , 144 U.S. 11 (1892) .....                   | 20, 31 |
| <i>Arrhythmia Research Technology Inc. v.<br/>Corazonix Corp.</i> , 958 F.2d 1053<br>(Fed. Cir. 1992)..... | 22     |
| <i>Ashwander v. Tennessee Valley Auth.</i> , 297<br>U.S. 288 (1936) .....                                  | 32     |
| <i>Atlantic Works v. Brady</i> , 107 U.S. 192<br>(1883) .....  | 12     |
| <i>Baker v. Selden</i> , 101 U.S. (11 Otto) 99<br>(1879) .....   | 4, 8   |
| <i>Barrett v. Hall</i> , 2 F. Cas. 914 (C.C.D. Mass. 1818)<br>(No. 1,047).....                             | 18     |

|   |            |
|---|------------|
| <i>In re Bilski</i> , 545 F.3d 943 (Fed. Cir. 2008)<br>(en banc).....                                     | 16, 18     |
| <i>Bonito Boats, Inc. v. Thunder Craft Boats, Inc.</i> , 489<br>U.S. 141 (1989) .....                     | 34         |
| <i>CCC Info. Servs., Inc. v. Maclean Hunter Market<br/>Repts., Inc.</i> , 44 F.3d 61 (2d Cir. 1994) ..... | 7          |
| <i>Central Bank of Denver v. First Interstate Bank of<br/>Denver</i> , 511 U.S. 164 (1994).....           | 30         |
| <i>Cochrane v. Deener</i> , 94 U.S. (4 Otto) 780<br>(1876) .....  | 18, 19, 21 |
| <i>Corning v. Burden</i> , 56 U.S. (15 How.) 252<br>(1853) .....  | 18         |
| <i>Dann v. Johnston</i> , 425 U.S. 219 (1976).....  | 12         |
| <i>Diamond v. Chakrabarty</i> , 448 U.S. 303<br>(1980) .....  | 11, 14     |
| <i>Diamond v. Diehr</i> , 450 U.S. 175 (1981).....  | passim     |
| <i>Dolbear v. American Bell Telegraph Co.</i> , 126<br>U.S. 1 (1888) .....                                | 16, 17, 21 |

|   |            |
|---|------------|
| <i>Evans v. Eaton</i> , 16 U.S. (3 Wheat.) 454<br>(1818) .....                  | 18         |
| <i>Expanded Metal Co. v. Bradford</i> , 214 U.S. 366<br>(1908) .....            | 21         |
| <i>Fogerty v. Fantasy</i> , 510 U.S. 517 (1994).....                            | 32         |
| <i>Funk Bros. Seed Co. v. Kalo Inoculant Co.</i> , 333<br>U.S. 127 (1948) ..... | passim     |
| <i>Gomez v. United States</i> , 490 U.S. 858 (1989).....                        | 32         |
| <i>Gottschalk v. Benson</i> , 409 U.S. 63 (1972).....                           | passim     |
| <i>Graham v. John Deere Co.</i> , 383 U.S. 1 (1966)....                         | 13, 33     |
| <i>In re Grams</i> , 888 F.2d 835 (Fed. Cir. 1989) .....                        | 22         |
| <i>Holland Furniture Co. v. Perkins Glue Co.</i> , 277<br>U.S. 245 (1928) ..... | 15         |
| <i>Hotchkiss v. Greenwood</i> , 52 U.S. (11 How.) 248<br>(1851) .....           | 12         |
| <i>Howe v. Abbott</i> , 12 F. Cas. 656 (C.C.D. Mass.<br>1842) (No. 6,766).....  | 18, 20, 31 |

|  |           |
|--|-----------|
| <i>J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.</i> , 534 U.S. 124 (2001) ..... | 14        |
| <i>In re Kemper</i> , 14 F.Cas. 286 (C.C.C.D.C. 1841) (No. 7,687).....                           | 28        |
| <i>Kewanee Oil Co. v. Bicron Corp.</i> , 416 U.S. 470 (1974) .....                               | 6         |
| <i>Kregos v. Associated Press</i> , 937 F.2d 700 (2d Cir. 1991) .....                            | 8         |
| <i>KSR Int'l. Co. v. Teleflex, Inc.</i> , 550 U.S. 398 (2007) .....                              | 13, 24    |
| <i>Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.</i> , 548 U.S. 124 (2006) .....          | 16        |
| <i>Le Roy v. Tatham</i> , 55 U.S. (14 How.) 156 (1853) .....                                     | 5, 24, 29 |
| <i>Lowell v. Lewis</i> , 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8,568).....                    | 18, 28    |
| <i>Mackay Radio &amp; Tel. Co. v. Radio Corp. of Am.</i> , 306 U.S. 86 (1939) .....              | 8         |

|  |        |
|--|--------|
| <i>Madey v. Duke Univ.</i> , 307 F.3d 1351 (Fed. Cir. 2002).....   | 34     |
| <i>Marconi Wireless Tel. Co. of Am. v. United States</i> ,<br>320 U.S. 1 (1943) .....  | 24     |
| <i>Markman v. Westview Instruments, Inc.</i> , 517 U.S.<br>370 (1996) .....  | 6      |
| <i>In re Meyer</i> , 688 F.2d 789 (C.C.P.A. 1982) .....  | 22     |
| <i>Morton v. New York Eye Infirmary</i> , 17 F. Cas. 879<br>(C.C.S.D.N.Y. 1862) (No. 9,865).....   | 6      |
| <i>O'Reilly v. Morse</i> , 56 U.S. (15 How.) 62<br>(1853) .....  | passim |
| <i>Parker v. Flook</i> , 437 U.S. 584 (1978).....  | passim |
| <i>Prometheus Labs, Inc. v. Mayo Collaborative<br/>Servs.</i> , Appeal No. 2008-1403, 2009 WL<br>2950232 (Fed. Cir. Sept. 16, 2009)..... | 22     |
| <i>Risdon Locomotive Works v. Medart</i> , 158 U.S. 68<br>(1894) .....   | 21     |
| <i>Rubber-Tip Pencil Co. v. Howard</i> , 87 U.S.<br>(20 Wall.) 498 (1874) .....  | 22, 23 |

|   |        |
|---|--------|
| <i>Sakraida v. Ag Pro, Inc.</i> , 425 U.S. 273 (1976) .....   | 25     |
| <i>Servs., Inc. v. Maclean Hunter Market Repts., Inc.</i> , 44 F.3d 61 (2d Cir. 1994) .....                       | 7      |
| <i>State Street Bank &amp; Trust Co. v. Signature Financial Group, Inc.</i> , 149 F.3d 1368 (Fed. Cir. 1998)..... | 22     |
| <i>In re Tarczy-Hornoch</i> , 397 F.2d 856 (C.C.P.A. 1968) (en banc) .....  | 17, 21 |
| <i>In re Thuau</i> , 135 F.2d 344 (C.C.P.A. 1943) .....   | 20, 31 |
| <i>Tilghman v. Proctor</i> , 102 U.S. 707 (1880) .....  | 27     |
| <i>United States v. Adams</i> , 383 U.S. 39 (1966) .....  | 24     |
| <i>Waxham v. Smith</i> , 294 U.S. 20 (1934) .....   | 21     |
| <i>Westinghouse v. Boyden Power Brake Co.</i> , 170 U.S. 537 (1897) .....   | 21     |
| <i>Wyeth v. Stone</i> , 30 F. Cas. 723 (C.C.D. Mass. 1840) (No. 18,107).....                                      | 18     |

### **Constitution and Statutes**

|                                      |        |
|--------------------------------------|--------|
| U.S. Const., art. I, § 8, cl. 8..... | passim |
|--------------------------------------|--------|

|                                |        |
|--------------------------------|--------|
| 35 U.S.C. § 100(a).....        | 30     |
| 35 U.S.C. § 100(b).....        | 30, 31 |
| 35 U.S.C. § 101 .....          | passim |
| 35 U.S.C. § 102 .....          | 10     |
| 35 U.S.C. § 103.....           | 12, 13 |
| 35 U.S.C. § 112, para. 1 ..... | 14, 15 |
| 35 U.S.C. § 273(b).....        | 4, 32  |

### **Legislative Materials**

|  |        |
|--|--------|
| H.R. Rept. 82-1928 (1952).....         | 29, 30 |
| Cong. Rec. S14836 (Nov. 18, 1999)..... | 32     |

### **International Materials**

|  |           |
|--|-----------|
| <i>Boulton v. Bull</i> , 126 Eng. Rep. 651 (1795) .....  | 8, 26, 27 |
| Convention on the Grant of European Patents,<br>arts. 52(2)(a)&(c), 52(3), Oct. 5, 1973 (as<br>amended), 13 I.L.M. 268 ..... | 5, 16     |

|   |        |
|---|--------|
| European Patent Office, <i>Revision of the European Patent Convention (EPC 2000) Synoptic Presentation of EPC 1973/2000 – Part I: The Articles</i> , EPO Official J. (Spec. Ed. 4 2007), available at <a href="http://archive.epo.org/epo/pubs/oj007/08_07/special_edition_4_epc_2000_synoptic.pdf">http://archive.epo.org/epo/pubs/oj007/08_07/special_edition_4_epc_2000_synoptic.pdf</a> ..... | 7      |
| Patent Act (Japan), art. 2(1), translation at <a href="http://www.cas.go.jp/jp/seisaku/hourei/data/PA.pdf">http://www.cas.go.jp/jp/seisaku/hourei/data/PA.pdf</a> .....   | 7      |
| <i>Neilson v. Harford</i> , 151 Eng. Rep. 1266 (1841) .....   | 27, 29 |
| 17 The Parliamentary History of England (William Cobbett ed., 1806-20) (1774) .....   | 5, 27  |
| Patent Cooperation Treaty, art. 33(4), June 19, 1970 (as amended), 28 U.S.T. 7645 .....   | 7      |
| Patent Law of the Peoples Republic of China, arts. 25(1)&(2), translation at <a href="http://www.sipo.gov.cn/sipo_English/laws/lawsregulations/200804/t20080416_380327.html">http://www.sipo.gov.cn/sipo_English/laws/lawsregulations/200804/t20080416_380327.html</a> .....  | 5      |
| Statute of Monopolies, 21 Jac. 1, c. 3, § 6 (1623) .....  | 26     |

|  |   |
|--|---|
| The Patents Act, 1970 (India) (as amended),<br>§ 3(c), available at <a href="http://ipindia.nic.in/ipr/patent/patents.htm">http://ipindia.nic.in/<br/>ipr/patent/patents.htm</a> ..... | 5 |
|--|---|

### **Other Authorities**

|  |        |
|--|--------|
| Anthony W. Deller, <i>The United States patent system, in</i> <i>Mainly on patents: The use of industrial property and its literature</i> (Felix Liebesny ed., 1972) .....                                 | 6      |
| Linda J. Demaine and Aaron Xavier Fellmeth, <i>Reinventing the Double Helix: A Novel and Nonobvious Reconceptualization of the Biotechnology Patent</i> , 55 <i>Stan. L. Rev.</i> 303, 370-74 (2002) ..... | 6      |
| Pasquale J. Federico, <i>Commentary on the New Patent Act</i> , 75 <i>J. Pat. &amp; Trademark Off. Soc'y</i> 161 (1993) (1954) .....   | 30, 31 |
| Karl B. Lutz, <i>Patents and Science: A Clarification of the Patent Clause of the U.S. Constitution</i> , 32 <i>J. Pat. Off. Soc'y</i> 83 (1950) .....   | 10     |
| The Compact Edition of the Oxford English Dictionary 180 (Oxford Univ. Press 1971).....  | 28     |

- Giles S. Rich, *Laying the Ghost of the “Invention” Requirement*, 1 APLA Q.J. 26 (1972-73)..... 12
- Giles S. Rich, *The Relation between Patent Practices and the Anti-Monopoly Laws*, 24 J. Pat. & Trademark Off. Soc’y 159 (1942) ..... 20
- Stefan A. Riesenfeld, *The New United States Patent Act in the Light of Comparative Law I*, 102 U. Penn. L. Rev. 291 (1954) ..... 7, 30, 31
- 1 William C. Robinson, *The Law of Patents for Useful Inventions* (Little, Brown 1890).....passim
- Joshua D. Sarnoff, *Shaking the Foundations of Patentable Subject Matter* (unpublished draft Apr. 2008), at <http://www.wcl.american.edu/pijip/go/research-and-advocacy/ip-policy-and-law-reform> ..... 15, 18
- Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. Econ. Persp. 29 (1991) ..... 33

|  |        |
|--|--------|
| Albert H. Walker, Text-book of the Patent Laws<br>of the United States of America (2d ed.<br>1889).....  | 28     |
| Edward C. Walterscheid, <i>The Early Evolution<br/>of the United States Patent Law:<br/>Antecedents</i> (pt. 3 continued), 77 J. Pat.<br>& Trademark Off. Soc’y 847 (1995) ..... | 5, 6   |
| Edward C. Walterscheid, The Nature of the<br>Intellectual Property Clause: A Study<br>in Historical Perspective 350 (William<br>S. Hein & Co. 2002) .....                        | passim |

**INTERESTS OF *AMICI CURIAE***

This brief is filed on behalf of the undersigned Law Professors identified in Appendix A and AARP.<sup>1</sup>

Law Professors teach and write about patents, intellectual property, health, science, and constitutional law. Law Professors are concerned that the Patent Act should be construed consistently with: (1) the constitutional premise that the patent system does not authorize private ownership of scientific principles, natural materials and abstract ideas; and (2) historic enforcement of that premise by requiring invention to exist in the application of any science, nature, and ideas.

AARP is a nonpartisan, nonprofit organization that helps people over the age of 50 to have independence, choice and control in ways that are beneficial to them and society as a whole. AARP has nearly 40 million members. AARP works to foster the health and economic security of individuals as they age, to ensure access to high quality and economical health care, and to ensure that older people have viable retirement options. AARP has previously filed briefs in this Court on the limits of what is patent eligible. In *Laboratory Corp. of America Holdings v. Metaboli-te Laboratories, Inc.*, No. 04-607, AARP described the adverse effects of patents for natural phenomena

---

<sup>1</sup> Letters of the Parties' general consent to file amicus briefs are on file with the Court. This brief was not authored in whole or in part by counsel for any party. No one other than *Amici* and their counsel made a monetary contribution to preparing or submitting this brief.

claimed as medical diagnostic methods. AARP has an interest in this case because of the trend to find “business methods” that are abstract ideas applied without any invention to be patent eligible. Such methods, including retirement plan methods, strategies and designs, limit the retirement options available to older people. Granting such patents also increases the cost of retirement plans and may lead to misconceptions that particular plans are government approved or legitimate. Upholding the patent eligibility of the claimed business method in this case would likely open the gates to patents on non-inventive applications of science and nature, which would adversely affect medical research and diagnostic and treatment options. Patent incentives are not needed for such discoveries or applications.

Science, nature, and ideas (claimed as such or without invention in their application) for centuries consistently have been held to be excluded from the patent system. Accordingly, the patent system generally has promoted scientific and technological development for human benefit. A broad interpretation of the Patent Act that would authorize the eligibility of non-inventive applications of science, nature, or ideas would extend the patent system beyond the limits that Congress has approved and would raise serious constitutional conflicts that should be avoided. It would also threaten continued scientific, technological, and other advances. *Amici* urge the Court to avoid this result.

## SUMMARY OF THE ARGUMENT

The patent system of the United States, like that of other countries, excludes from its ambit scientific principles, natural materials, and abstract ideas. Since the 19<sup>th</sup> Century, this Court has distinguished patentable inventions from ineligible discoveries of science, nature, and ideas by determining whether there is any *invention in their application*, i.e., any creative, technological advance beyond merely applying the newly discovered or previously known science, nature, and ideas to a particular context. The “invention in the application” test of eligibility: performs a necessary gate-keeping role that is distinct from the patentability criteria of novelty, non-obviousness, and adequacy of disclosure; explains this Court’s machine or transformation precedents and why particularity or tangibility is a necessary but not a sufficient condition for eligibility; and elucidates why the claims at issue here are ineligible. These claims are non-inventive applications of the abstract idea of hedging the risks of fixed-price, variable-volume purchases, limited only to the field of commodities.

Neither the Constitution nor the Patent Act authorizes patents for non-inventive applications of public domain science, nature, and ideas. The Constitution authorizes exclusive rights only for “Discoveries” of “Inventors,” and the Patent Act has consistently been interpreted to preclude patents for scientific, natural, or conceptual discoveries, claimed as such or without invention in their application. The 1952 Act’s definitional changes did not alter this requirement. Interpreting Section 101 (alone or

with Section 273(b)) to authorize such claims would raise serious Constitutional conflicts that should be avoided. Such patents would not be for “Discoveries” of “Inventors,” would extend beyond the “useful Arts” and would impede rather than “Promote the Progress” as they would propertize the building blocks of science, technology and other learning. Such patents are and should remain prohibited.

## ARGUMENT

### I. For a Claim Applying Science, Nature, or Ideas to Be Eligible, There Must Be Invention in the Application.

This case raises the most basic question of patent law: what kinds of discoveries or inventions can be protected by the patent system? The patent system does not exist to provide incentives for *all* forms of creative human endeavor. That its reach is limited avoids burdening the patent system with non-technological activities or discoveries, such as literary, artistic, and other non-functional expressions protected by copyright.<sup>2</sup> More significantly, the limits on the patent system avoid burdening society by propertizing fundamental knowledge and pre-existing natural materials. Thus, it is a common premise that patent systems may not authorize private ownership of “[a] principle in the abstract,” ... [p]henomena of nature, though just discovered,

---

<sup>2</sup> Cf. *Baker v. Selden*, 101 U.S. (11 Otto) 99, 101-03 (1879) (discussing limits to the copyright system and its relation to the patent system).

mental processes, and abstract intellectual concepts ... as they are the basic tools of scientific and technological work.”<sup>3</sup>

Discoveries of phenomena of nature are unpatentable under two foundational premises: (1) they are not themselves the products of human invention, regardless of the investments and creative efforts leading to their identification; and (2) the patent system must not subject such discoveries to private property rights because they should be free for all humanity to share.<sup>4</sup> Discoveries of phenomena of

---

<sup>3</sup> *Parker v. Flook*, 437 U.S. 584, 589, 591-92 (1978) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (quoting *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1853))). See, e.g., Convention on the Grant of European Patents (“EPC”), arts. 52(2)(a)&(c), Oct. 5, 1973 (as amended), 13 I.L.M. 268 (“discoveries, scientific theories and mathematical methods;” and “schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers” are not patentable inventions); Patent Law of the Peoples Republic of China, arts. 25(1)&(2), translation at [http://www.sipo.gov.cn/sipo\\_English/laws/lawsregulations/200804/t20080416\\_380327.html](http://www.sipo.gov.cn/sipo_English/laws/lawsregulations/200804/t20080416_380327.html); Patents Act, 1970 (India) (as amended), § 3(c), available at <http://ipindia.nic.in/ipr/patent/patents.htm>.

<sup>4</sup> See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 185 (1981) (“free to all men and reserved exclusively to none”) (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)). See generally 17 *The Parliamentary History of England* col. 999 (William Cobbett ed., 1806-20) (1774) (Lord Camden) (“science and learning” are by nature “common to all mankind” and “ought to be as free and general as air or water.”) (“Parliamentary History”); Edward C. Walterscheid, *The Early Evolution of the United States Patent Law: Antecedents* (pt. 3 continued), 77 *J. Pat. & Trademark Off. Soc’y* 847, 855 (1995) (“Walterscheid, Antecedents”).

nature thus are not “Discoveries” of “Inventors” within the Constitution’s grant of authority.<sup>5</sup> Although abstract intellectual concepts may be human creations,<sup>6</sup> they are also outside the patent system. Such patents would restrict the public’s right to

---

<sup>5</sup> U.S. Const., art. I, § 8, cl. 8. See, e.g., *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974) (stating that “discovery is something less than invention”); Anthony W. Deller, *The United States patent system*, in *Mainly on patents: The use of industrial property and its literature* 50-52 (Felix Liebesny ed., 1972) (distinguishing “mere discovery” from invention) (quoting *Morton v. New York Eye Infirmary*, 17 F. Cas. 879, 882 (C.C.S.D.N.Y. 1862) (No. 9,865)); Edward C. Walterscheid, *The Nature of the Intellectual Property Clause: A Study in Historical Perspective* 350, 356 (William S. Hein & Co. 2002) (noting that the Framers appeared to view “Discoveries” and “Inventors” to be synonymous, and that under English common law patents “did not cover principles of nature”) (“Walterscheid, Study”); *id.* at 365-66, 375-76 (arguing that “Discoveries” of “Inventors” are limited to the “useful arts,” which excludes “anything not made or created by man”). See also Linda J. Demaine and Aaron Xavier Fellmeth, *Reinventing the Double Helix: A Novel and Nonobvious Reconceptualization of the Biotechnology Patent*, 55 *Stan. L. Rev.* 303, 370-74 (2002) (discussing historical evidence that patentable discoveries did not include “merely something found”).

<sup>6</sup> Because all patent claims are intellectual concepts expressed in language having physical embodiments, they could be viewed as “abstract ideas.” See, e.g., *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 386 (1996); Walterscheid, *Antecedents, supra*, at 849 (describing how disclosure of the concept of the invention became the consideration for the patent grant). This raises a level of generality problem regarding which human-created ideas are the fundamental tools for further innovation that must be in the public domain upon their disclosure. In contrast, all discoveries of science and nature must be so treated.

benefit immediately from the discoverer's disclosure.<sup>7</sup> Therefore, all patent systems must distinguish claims to unpatentable discoveries of scientific principles, naturally occurring materials, and abstract ideas ("science, nature, and ideas") from claims to patent-eligible human inventions.<sup>8</sup> Line drawing to separate patentable inventions from unpatentable discoveries is necessary to protect the public domain.<sup>9</sup>

---

<sup>7</sup> See, e.g., 1 William C. Robinson, *The Law of Patents for Useful Inventions* 37-44 (Little, Brown 1890). See also *id.* at 44 ("methods of agriculture and commerce, the metaphysical and moral truths, and all other inventions which do not relate to the industrial arts, belong at once, upon their publication, to all mankind").

<sup>8</sup> In foreign systems, such line drawing may occur in legislative or judicial definitions of "invention," in requirements for "technical effect" in claimed applications of science, nature, or ideas, or in requirements for "industrial applicability." See, e.g., Patent Act (Japan), art. 2(1), translation at <http://www.cas.go.jp/jp/seisaku/hourei/data/PA.pdf>; European Patent Office, *Revision of the European Patent Convention (EPC 2000) Synoptic Presentation of EPC 1973/2000 – Part I: The Articles*, EPO Official J. 48 (Spec. Ed. 4 2007), available at [http://archive.epo.org/epo/pubs/oj007/08\\_07/special\\_edition\\_4\\_epc\\_2000\\_synoptic.pdf](http://archive.epo.org/epo/pubs/oj007/08_07/special_edition_4_epc_2000_synoptic.pdf); Patent Cooperation Treaty, art. 33(4), June 19, 1970 (as amended), 28 U.S.T. 7645. See generally Stefan A. Riesenfeld, *The New United States Patent Act in the Light of Comparative Law I*, 102 U. Penn. L. Rev. 291, 302 (1954).

<sup>9</sup> Similar concerns animate the copyright doctrine of merger, which precludes protection for an author's expression if it "would effectively accord protection to the idea itself," because "ideas are too important to the advancement of knowledge to permit them to be under private ownership." *CCC Info. Servs., Inc. v. Maclean Hunter Market Repts., Inc.*, 44 F.3d 61, 69 (2d

In the United States, this Court has drawn a consistent line when interpreting the statutory categories of patentable subject matter.<sup>10</sup> The Court has required *invention* to exist *in the application* of any previously known or newly discovered science, nature, or ideas.<sup>11</sup> “If there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful end.”<sup>12</sup> Moreover, the invention (i.e., the creative, technological advance<sup>13</sup>) must reside *in the application*, rather than in a discovery preceding or employed by it.<sup>14</sup> This is because the science, nature, or ideas

---

Cir. 1994); *Kregos v. Associated Press*, 937 F.2d 700, 705 (2d Cir. 1991). See *Baker*, 101 U.S. (11 Otto) at 103.

<sup>10</sup> See 35 U.S.C. § 101 (“any ... process, machine, manufacture, or composition of matter”).

<sup>11</sup> “Application” here refers not to the document submitted, but to the implementation made of science, nature, and ideas, e.g., improving steam engines employing thermodynamic principles. See *Boulton v. Bull*, 126 Eng. Rep. 651, 652-53 (1795)

<sup>12</sup> *Diehr*, 450 U.S. at 188 n.11 (quoting *Funk Bros. Seed Co.*, 333 U.S. at 130).

<sup>13</sup> See, e.g., 1 Robinson, *supra*, at 93-94 (surveying legal efforts to define “invention”).

<sup>14</sup> See, e.g., *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) (“We assume, without deciding the point, that this advance was *invention* even though it was achieved by the logical application of a known scientific law to a familiar type of antenna.”) (emphasis added); *In re Alappat*, 33 F.3d 1526, 1553 (Fed. Cir. 1994) (en banc) (Archer, C.J., dissenting) (“The requirement of the patent law that an invention or discovery reside *in the application* of an abstract idea, law of

must be treated as if they are already in the prior art, i.e., are publicly known and free for all to use.<sup>15</sup> Absent invention in applying such discoveries, there is simply no invention to patent.

To emphasize this point, this Court in *Parker v. Flook* stated that “the discovery of such a phenomenon cannot support a patent unless there is some other *inventive* concept *in its application*.”<sup>16</sup> There, the claimed process for catalytic conversion of hydrocarbons “contain[ed] no claim of patentable invention,” because the only creative advance was an improved mathematical method of calculating a process variable, which had to be treated as if it were already known. The mere application of the new math in the context of the hydrocarbon process was not a technological invention (any more than would be using a new mathematical formula to calculate a useful measurement).<sup>17</sup> The need for another, and an *inventive*, concept in the claimed application of any scientific, natural, or conceptual discovery is critical, because the patent system does not exist to reward scientific, natural, or conceptual

---

nature, principle, or natural phenomenon is embodied in the language of 35 U.S.C. § 101”) (emphasis in original).

<sup>15</sup> See, e.g., *Diehr*, 450 U.S. at 185; *Flook*, 437 U.S. at 592 (citing *O’Reilly v. Morse*, 56 U.S. (15 How.) 62, 115 (1853)).

<sup>16</sup> *Flook*, 439 U.S. at 594 (emphasis added).

<sup>17</sup> See *id.* at 594-95.

endeavors, but to create incentives for invention.<sup>18</sup> The Constitution and Section 101 thus bar the gate to non-inventive, piecemeal incursions on the public domain of science, nature, and ideas, even though the claimed applications may be new and do not foreclose other applications.

**A. The Invention in the Application Test Performs a Necessary Gate-Keeping Role, Different from Novelty, Non-Obviousness, and Adequacy of Disclosure.**

As this Court has held and should reiterate here, the invention in the application test of eligibility pertains to *all* product and process claims,<sup>19</sup> even though the literal language of Section 101 is broad.<sup>20</sup> Moreover, the test pertains even though the claimed application of science, nature, or ideas is wholly new under Section 102.<sup>21</sup> If novelty were all that was required for eligibility, this Court's precedents would

---

<sup>18</sup> See, e.g., Karl B. Lutz, *Patents and Science: A Clarification of the Patent Clause of the U.S. Constitution*, 32 J. Pat. Off. Soc'y 83, 87 (1950).

<sup>19</sup> See, e.g., *Diehr*, 450 U.S. at 188 n.11 (citing *Benson*, 409 U.S. at 68); *Flook*, 437 U.S. at 600 n.3 (Stewart, J., dissenting).

<sup>20</sup> See, e.g., *Flook*, 437 U.S. at 589 (*Benson* "foreclose[d] a purely literal reading of § 101.").

<sup>21</sup> 35 U.S.C. § 102.

have reached very different results.<sup>22</sup> Rather, the test pertains to newly created things and activities, whether or not the science, nature, or idea employed by the claimed invention was previously known.<sup>23</sup>

This Court has held that eligibility test pertains when “consider[ing the claims] as a whole”<sup>24</sup> and without “dissect[ing] the claims into old and new elements.”<sup>25</sup> Rather than requiring analysis of which *elements or steps* of the claims are *new*, the test requires identifying the *kind* of discovery or invention made. One must still determine what (if anything) the *invention* consists of, to assure that the claim as a whole contains a technological advance relative to the public domain science, nature, and ideas on which it relies.<sup>26</sup>

---

<sup>22</sup> See, e.g., *Funk Bros. Seed Co.*, 333 U.S. at 130-31 (although Bond “made a new and different composition.... we think that that [the claimed, novel] aggregation of species fell short of invention within the meaning of the patent statutes”); *Flook*, 437 U.S. at 588 (refusing to find the claim eligible where novelty existed, but only in using a new mathematical formula in “an otherwise conventional method”). Cf. *Diamond v. Chakrabarty*, 448 U.S. 303, 310 (1980) (“Here, by contrast, the patentee has produced a *new* bacterium *with markedly different characteristics* from any found in nature....”) (emphasis added).

<sup>23</sup> See, e.g., *Flook*, 437 U.S. at 591-92 (“[T]he novelty of the mathematical algorithm is not a determining factor at all.”).

<sup>24</sup> *Flook*, 437 U.S. at 594. See *id.* at 588.

<sup>25</sup> *Diehr*, 450 U.S. at 188.

<sup>26</sup> Some amici make this point in the particularly troubling context of claims for which the only advance resides in a claim

The invention in the application test also pertains without considering the qualitative degree of any advance, beyond what was previously known in the art, to determine if a patent is warranted. That is the subject of non-obviousness analysis under Section 103.<sup>27</sup> Although Section 103 *could* be used to exclude claims for non-inventive applications of science, nature, and ideas,<sup>28</sup> it is not an effective substitute for Section 101.

---

step requiring performance of a mental act, with information that the patent itself discloses. *See, e.g.*, Brief of Amicus Curiae Law Professor Kevin Emerson Collins at 1-8. But the invention in the application test is not limited to that context. Other amici suggest that the discovery of a previously existing, unexpected property provides for eligibility so long as the claimed application (as a whole) is new and useful. *See, e.g.*, Brief of Amici Curiae 20 Law and Business Professors at 3. But such a discovery is unpatentable and must be treated as if it were publicly known. For eligibility, there must be another, and inventive, concept beyond merely using that property.

<sup>27</sup> 35 U.S.C. § 103. *See, e.g.*, *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248, 265 (1851); *Atlantic Works v. Brady*, 107 U.S. 192, 200 (1883). *See generally* Giles S. Rich, *Laying the Ghost of the “Invention” Requirement*, 1 APLA Q.J. 26, 29-34 (1972-73) (noting that a qualitative “invention” requirement is reflected in the Constitution’s restriction to “Inventors”; discussing the history of the invention standard preceding and following *Hotchkiss*, and the legislative effort to establish in Section 103 a clearer qualitative standard by reference to “unobviousness” of the “subject matter as a whole”); Walter-scheid, Study, *supra*, at 335-44 (discussing arguments for a qualitative invention standard in the Constitution).

<sup>28</sup> *See, e.g.*, *Dann v. Johnston*, 425 U.S. 219, 220 (1976). Because science, nature, and ideas must be treated as if publicly known, for any *non-obvious* invention to exist in a claim applying such discoveries it must exist in the application.

Section 101 provides clear public notice that the public domain of science, nature, and ideas is outside the boundaries of the patent system. The gate-keeping role of Section 101 minimizes burdens on the patent system, by barring all claims lacking *any* invention in the application.<sup>29</sup> Section 101 thus poses a less complicated and less resource-intensive initial analysis than patentability evaluations under Section 103. The Section 101 analysis usually can be made on the face of the specification, because its disclosure must explain the nature of the invention. The disclosure enables a threshold decision on eligibility,<sup>30</sup> before engaging in costly judicial or administrative fact-finding and qualitative legal evaluation of sufficiency of the advance under Section 103.<sup>31</sup> The focus on legal sufficiency also masks

---

<sup>29</sup> Some amici argue that patentability doctrines, such as novelty, obviousness, and utility can weed out “bad” patents, and that yet other doctrines such as declaratory challenges and restrictions on injunctive relief can minimize their adverse effects. *See, e.g.*, Brief of Amici Curiae 20 Law and Business Professors at 25-30. But none of these doctrines provide the threshold, gate-keeping benefits of Section 101 by avoiding such harms categorically.

<sup>30</sup> *See, e.g., Diehr*, 450 U.S. at 188-89; *id.* at 213 (Stevens, J., dissenting).

<sup>31</sup> *See, e.g., Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (discussing the required factual analyses, including differences between the claimed invention and the prior art and the level of skill in the art, and noting that the “ultimate question ... is one of law”); *KSR Int’l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 416, 427 (2007) (discussing the reasons for the obviousness requirement, which “is a legal determination”).

the clarity of public notice regarding the limits of the patent system, impeding the development of rules of exclusion that can provide private guidance.

Further, the invention in the application test pertains without considering the correlation between the claimed advance disclosed and the breadth of exclusive rights granted. That is the subject of the written description and enablement requirements of Section 112, first paragraph.<sup>32</sup> Applicants do not create the science or nature that they discover, and are not entitled to claim them, abstract ideas, or non-inventive applications thereof.<sup>33</sup> This is true even when the claimed applications (and thus the exclusive rights) are limited in scope, are capable of being made and used, and are sufficiently described. Thus, Section 101 performs a role that Section 112 cannot. In contrast, ineligible claims for non-

---

<sup>32</sup> 35 U.S.C. § 112, para. 1.

<sup>33</sup> See, e.g., *O'Reilly*, 56 U.S. at 113 (“In fine he claims an exclusive right to use a manner and process which he has not described and indeed *had not invented*, and therefore *could not describe* when he obtained his patent.”) (emphasis added). Cf. *Chakrabarty*, 447 U.S. at 311-12 (noting that before 1930 artificially bred plants were thought to be products of nature and incapable of an adequate written description, and that the Plant Patent Act changed the view of their status and relaxed the written description requirement); *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, 534 U.S. 124, 133-35 (2001) (same, noting that the Plant Patent Act was not meant to exclude plant protection under the predecessor to Section 101, even though they were not then thought to fall within that provision).

inventive applications of science, nature and ideas *also* may conflict with Section 112 requirements.<sup>34</sup>

The invention in the application test cannot be evaded by adding non-inventive limits that restrict the scope of claims, even if doing so necessarily avoids preempting all possible uses of previously known or newly discovered science, nature, and ideas.<sup>35</sup> Artful drafting of field-of-use restrictions, insignificant additional structures, trivial physical transformations, or other non-inventive claim limitations may reflect legal skill, but does not impart patent eligibility.<sup>36</sup> Such limits may restrict scope,

---

<sup>34</sup> See, e.g., *Holland Furniture Co. v. Perkins Glue Co.*, 277 U.S. 245, 257 (1928) (“That the patentee may not by claiming a patent on the result or function of a machine extend his patent to devices or mechanisms not described in the patent is well understood.”). See generally Joshua D. Sarnoff, *Shaking the Foundations of Patentable Subject Matter* 61-63 (unpublished draft Apr. 2008) (discussing how the 1836 Patent Act’s requirement for clear claims provided another doctrinal basis for excluding patents on natural discoveries, by prohibiting overbreadth and abstractness), at <http://www.wcl.american.edu/pijip/go/research-and-advocacy/ip-policy-and-law-reform>.

<sup>35</sup> See *Diehr*, 450 U.S. at 192 n.14 (“The claims [in *Flook*], however, did not cover every conceivable application of the formula. We rejected in *Flook* the argument that because all possible uses of the mathematical formula were not preempted, the claim should be eligible for patent protection.”). Cf. *Flook*, 437 U.S. at 590 n.11 (“it is not entirely clear why a process claim is any more or less patentable because the specific end use contemplated is the only one for which the algorithm has any practical application”).

<sup>36</sup> See, e.g., *Diehr*, 450 U.S. at 191-92; *Flook*, 437 U.S. at 590; *Benson*, 409 U.S. at 70, 72.

but add “nothing ... of significance” to the otherwise patent-ineligible discovery.<sup>37</sup>

The Court of Appeals below, however, focused on this Court’s dicta in *Benson* and *Diehr* to highlight “[t]he question” of whether the claim would “pre-empt substantially all” applications of science, nature, and ideas.<sup>38</sup> But as this Court held in *Dolbear v. American Bell Telegraph Co.*,<sup>39</sup> preemption is not the right question. After describing Bell’s patented “discovery” and “art” as a particular method of placing electric current in a specific condition for use in sound transmission,<sup>40</sup> the Court held that the invention was a pioneering (i.e., a highly inventive) *application* of the principles of electromagnetism, limited to the particular process claimed. The Court then noted that the claim would not be invalid

---

<sup>37</sup> *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124, 138 (2006) (Breyer, J., dissenting from dismissal as improvidently granted) (also noting restrictions on the claim’s scope and physical transformations in performing the process). See *Benson*, 409 U.S. at 71 (referring to such artful claim drafting as “direct attempts” to claim computer programs). Cf. EPC, *supra*, art. 52(3) (prohibiting eligibility of excluded categories “as such”).

<sup>38</sup> *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008) (en banc). See *id.* at 952-53 (citing *Benson*, 409 U.S. at 71-72, and *Diehr*, 450 U.S. at 187-88).

<sup>39</sup> 126 U.S. 1 (1888).

<sup>40</sup> *Id.* at 534-35.

even if it were the *only* way to accomplish the result—and thus would preempt all ways of doing so.<sup>41</sup>

The Court should clarify here that preemption is *not* the *test* for patent eligibility. Claims that limit scope but lack invention in the application of science, nature or ideas necessarily avoid preemption. Rather, preemption is the *consequence* of improperly claiming science, nature, or ideas without invention in the application *and* without any other significant limits on the scope of application of such a discovery.

**B. Particularity or Tangibility, Which Is Required by the Machine or Transformation Precedents, Is Insufficient Without Invention in the Application.**

The invention in the application test explains the proper application of this Court’s precedents regarding patent eligibility for process claims tied to a machine (or other structure) or that result in a physical transformation. This Court has referred to the machine and transformation precedents as “the clue” to patent eligibility, and the Court of Appeals below elevated them (at least for now) to an exclu-

---

<sup>41</sup> See *id.* at 535 (“It may be that ... practically, his patent gives him its exclusive use for that purpose.... It will, if true, show more clearly the great importance of his discovery, but it will not invalidate his patent.”). See also *In re Tarczy-Hornoch*, 397 F.2d 856, 860 (C.C.P.A. 1968) (en banc); *id.* at 869 (Kirkpatrick, J., dissenting).

sive test of eligibility.<sup>42</sup> However, merely tying a process claim to some specific machine or having some kind of tangible effect will not impart eligibility without invention in the application. The same is true for claims in the other subject matter categories, which also recite particular things or have tangible effects when used.<sup>43</sup>

For the first century of American patent law, doubts were initially expressed about, and later this Court explicitly prohibited, claiming processes that were not restricted to *particular* physical machines or implementing structures.<sup>44</sup> This was because patents for processes that were not limited to particular, invented structures would claim scientific principles or abstract ideas (specific results) without any invention in their application.<sup>45</sup>

---

<sup>42</sup> *Benson*, 409 U.S. at 64, 70 (citing *Cochrane v. Deener*, 94 U.S. (4 Otto) 780, 787-88 (1876). See *Bilski*, 545 F.3d at 954, 956.

<sup>43</sup> *Cf.* Brief for the Respondent at 36 n.14 (the machine-or-transformation test is separate from the preemption test).

<sup>44</sup> See *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454, 517 (1818) (Story, J., App. Note II, *On the Patent Laws*); *O'Reilly*, 56 U.S. (15 How.) at 116, 119; and *Corning v. Burden*, 56 U.S. (15 How.) 252, 268-69 (1853). See also *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (C.C.D. Mass. 1817) (No. 8,568); *Barrett v. Hall*, 2 F. Cas. 914, 923 (C.C.D. Mass. 1818) (No. 1,047); *Wyeth v. Stone*, 30 F. Cas. 723, 727 (C.C.D. Mass. 1840) (No. 18,107); *Howe v. Abbott*, 12 F. Cas. 656, 657-58 (C.C.D. Mass. 1842) (No. 6,766). See generally Sarnoff, *supra*, at 63-83.

<sup>45</sup> *Corning* thus held that process claims were invalid when they exceeded the disclosed modes (or machines) for

This Court first authorized patents for inventive processes that were *not* limited to the disclosed physical means for accomplishing a result (or to similar machines or structures operating on the same principles) in *Cochrane v. Deener*.<sup>46</sup> For patent eligibility of a process that was *not* tied to a particular machine, however, *Cochrane* required that it must be “a *mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.... The process requires that certain things should be done with certain substances....*”<sup>47</sup>

Thus, after *Cochrane*, patent eligibility for processes could be found when the claim reflected invention either: (1) in the *particular machine* (or structure) implementing a discovery, rather than in a non-inventive application performed with any or with no machine; *or* (2) by transforming *certain substances*, which were understood as *tangible*

---

implementing them. *See* 56 U.S. (15 How.) at 269 (“His patent having a title which claims a machine, and his specification describing a machine, to construe his claim as for the function, effect, or result of his machine, would certainly endanger, if not destroy, its validity.”). Similarly, *O’Reilly* held that “the patent was not supported because this [scientific] principle [of using electromagnetism] was embodied in it.... [I]t was supported, because he had invented a mechanical apparatus.” 56 U.S. (15 How.) at 116. *See id.* at 119 (“by the use of certain means”).

<sup>46</sup> 94 U.S. (4 Otto) at 787-88.

<sup>47</sup> *Id.* at 788 (emphasis added).

objects.<sup>48</sup> But even for physical or chemical transformations, *invention* was still required in the application of scientific principles. Applying an old process or structure to a new *but analogous* substance or use may have employed a particular machine or applied to a tangible object. But it did not constitute invention, and such claims were not patent eligible.<sup>49</sup>

---

<sup>48</sup> See, e.g., 1 Robinson, *supra*, at 178–79 (explaining that mental operations are not complete inventive acts, as they cannot produce physical effects, and thus are “neither ‘a thing made,’ nor ‘a manner of making’”); Giles S. Rich, *The Relation between Patent Practices and the Anti-Monopoly Laws*, 24 J. Pat. & Trademark Off. Soc’y 159, 171 (1942) (explaining that for an invention—“a product of the mind”—“[t]o be patentable it must be capable of being embodied in a tangible form as an article of manufacture, machine, device or composition of matter or as a method or process which can be carried out by physical means”).

<sup>49</sup> See, e.g., *Ansonia Brass & Copper Co. v. Elec. Supply Co.*, 144 U.S. 11, 18 (1892) (“[N]othing is better settled in this court than that the application of an old process to a new and analogous purpose *does not involve invention*, even if the new result had not before been contemplated.”) (emphasis added); *Howe*, 12 F. Cas. at 658 (“The application of an old process to manufacture an article, to which it had never before been applied, is not a patentable invention. There must be some new process, or some new machinery used, to produce the result.”). The premise for this approach was the belief that all uses (even those not contemplated) were inherent in the *inventive principle* of a machine or a process, and only the first inventor of the thing or process was entitled to a patent. In contrast, non-analogous uses involved a different inventive principle, and thus the new uses or application to new things could be patented. See *Ansonia Brass & Copper Co.*, 144 U.S. at 18–19. See also 1 Robinson, *supra*, at 119–23. *But cf. In re Thuau*, 135 F.2d 344, 347 (C.C.P.A. 1943) (holding that *all* new

Following *Cochrane* and *Dolbear*, disputes raged through the next century regarding the validity of claims to the function of a disclosed machine (i.e., an effect or result), which would extend process or structure claims beyond the disclosed uses or machines to other uses or machines.<sup>50</sup> But these cases addressed claim scope rather than eligibility. The patents at issue disclosed *particular* machines reflecting *invention* in the application, but the claims covered *all* processes or machines for accomplishing the same result.<sup>51</sup>

In sum, this Court’s precedents require for the eligibility of process claims either particular implementing structures (machines) or application to certain tangible substances (transformations). But under these precedents, particularity or tangibility were necessary, not sufficient, conditions for eligibility; by particular machines and tangible substances were *meant* inventive applications.<sup>52</sup> That a claim

---

uses are not a new “art” under the statute, and might make vendors secondarily liable based on their customers’ activities).

<sup>50</sup> See, e.g., *Tarczy-Hornoch*, 397 F.2d at 858–65 (citing, inter alia, *Risdon Locomotive Works v. Medart*, 158 U.S. 68 (1894), *Westinghouse v. Boyden Power Brake Co.*, 170 U.S. 537 (1897), *Expanded Metal Co. v. Bradford*, 214 U.S. 366 (1908), and *Waxham v. Smith*, 294 U.S. 20 (1934)).

<sup>51</sup> Later cases held that *Risdon Locomotive Works* should not be understood as prohibiting all mechanical process patents. See, e.g., *Tarczy-Hornoch*, 397 F.2d at 863 (citations omitted).

<sup>52</sup> Morse’s claim to a symbolic code “for telegraphic purposes” is not to the contrary. *O’Reilly*, 56 U.S. at 86. See *supra* note 45. That claim need not be construed as untethered to the

requires the use of a particular machine or application to a specific, tangible substance may not make the application inventive. Recent decisions of the Court of Appeals have failed to recognize the need for *invention* in applications of discoveries using particular machines or achieving tangible transformations.<sup>53</sup> Similarly, recent decisions have improperly focused on what the information generated represents, rather than on what the invention is.<sup>54</sup>

**C. The Claims At Issue Are Ineligible,  
Non-Inventive Applications of an  
Abstract Idea.**

In the instant case, the Court must determine whether there is invention in the application of an

---

disclosed, inventive telegraph machine for its use. Even if it were so construed, there may have been invention in the claimed, particular application of the abstract idea of using symbols to transmit information. But in that case, machines or transformations may be unnecessary as well as insufficient.

<sup>53</sup> See, e.g., *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373, 1375 (Fed. Cir. 1998); *Prometheus Labs, Inc. v. Mayo Collaborative Servs.*, Appeal No. 2008-1403, 2009 WL 2950232, at \*8 (Fed. Cir. Sept. 16, 2009). Respondent similarly fails to appreciate this point. See Brief for the Respondent at 40 (suggesting that a physical transformation in an *assaying* step is sufficient for eligibility of a medical diagnostic process applying a discovered phenomenon).

<sup>54</sup> Compare *Alappat*, 33 F.3d at 1544, and *Arrhythmia Research Technology Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1059–61 (Fed.Cir.1992), with *In re Abele*, 864 F.2d 902, 907–09 (C.C.P.A. 1982), *In re Meyer*, 688 F.2d 789, 795–96 (C.C.P.A. 1982), and *In re Grams*, 888 F.2d 835, 839–40 (Fed. Cir. 1989).

“abstract idea.” In *Rubber-Tip Pencil Co. v. Howard*,<sup>55</sup> this Court explained what was meant by an abstract idea. After analyzing the specification, the Court determined that the claim was for a pencil eraser (without the pencil and not limited to a particular shape) having a cavity smaller than a pencil to elastically hold the eraser onto a pencil. But the public already possessed general knowledge of the elasticity of erasers and of putting things into elastic eraser cavities. Thus, the only thing “left for this patentee” (i.e., the only *valid* claim to creative advance) was the specific idea that if one inserts a *pencil* into a smaller rubber cavity the rubber will cling to the pencil.<sup>56</sup> The Court then noted that “an idea of itself is not patentable” and held that the claimed eraser—the “new device by which it [the unpatentable idea that the elastic property of rubber is triggered when a pencil is inserted] may be made practically useful” —was not new (and thus was not inventive).<sup>57</sup> The Court thereby identified the unpatentable “abstract idea” as either a *property* of rubber (elasticity) or a *result* that was sought (binding to pencils).

The category of “abstract ideas” thus reflects either functional properties on which claimed inventions operate or results to be achieved by employing

---

<sup>55</sup> 87 U.S. (20 Wall.) 498 (1874).

<sup>56</sup> *Id.* at 507.

<sup>57</sup> *Id.*

those properties.<sup>58</sup> For either, there must be invention *in the application* to establish eligibility. This was made clear in *Marconi Wireless Telegraph Company of America v. United States*.<sup>59</sup> The Court held that the abstract ideas of tuning a radio antenna circuit (which also was not new) and of substituting a known structure to better accomplish the tuning were not patent-eligible inventions.<sup>60</sup> “[M]erely making a known element of a known combination adjustable by a means of adjustment known to the art, when no new or unexpected result is obtained *is not invention*.”<sup>61</sup> *Marconi Wireless Telegraph* not only demonstrates the eligibility requirement for a creative technological advance when applying a functional property or a result. It also explains the precedents for claims to combinations of elements that lack any significant new function. Lacking any patent-eligible invention, such claims also lack any non-obvious invention.<sup>62</sup>

---

<sup>58</sup> See, e.g., *Le Roy*, 55 U.S. (14 How.) at 175 (explaining that invention does not exist in the discovery of motivating powers or properties, but “in applying them to useful objects”); *id.* (“A patent is not good for an effect, or the result of a certain process, as that would prohibit all other persons from making the same thing by any means whatsoever.”).

<sup>59</sup> 320 U.S. 1 (1943).

<sup>60</sup> See *id.* at 32–36, 49.

<sup>61</sup> *Id.* at 32 (emphasis added).

<sup>62</sup> See, e.g., *KSR Int’l Co.*, 550 U.S. at 415–17 (citing *United States v. Adams*, 383 U.S. 39 (1966), *Anderson’s-Black Rock*,

In the present case, the Court should affirm the U.S. Patent and Trademark Office's rejection of Petitioners' claims at issue.<sup>63</sup> Those claims (whether or not restricted to a specified mathematical formula<sup>64</sup>) reflect only non-inventive applications of the abstract idea of hedging risk. That result is achieved by the non-inventive process of having a middle-man enter into contracts that balance out uncertain sales amounts at fixed prices (like the slightly more common process of balancing uncertain prices for fixed amounts). The claimed process: (1) lacks any creative, technological advance in any particular structure to implement it or in any tangible transformation that it achieves; and (2) is restricted in its scope only by a field-of-use limitation to the context of commodity purchases.<sup>65</sup> The claims

---

*Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969), and *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976)).

<sup>63</sup> See U.S. Pat. App. No. 08/833,892.

<sup>64</sup> See Brief for the Petitioners at 7–8.

<sup>65</sup> See *id.* at 3-6; *id.* at 7 (Claim 1). Nothing in Claim 1 is limited to energy supplies (or fluctuations in prices due to weather variations). Nothing requires any particular method (including Monte-Carlo modeling) to determine the “fixed price” or the “fixed rate based on historical averages.” *Id.* at 7. See *id.* at 5–6. Rather, the fixed price could be based on collected and averaged data from a particular consumer's past use over some unspecified period of time, at a price the consumer is willing to accept. Claim 4 (if before the Court) only limits Claim 1 to the field of energy commodities (where prices are sensitive to weather), and (possibly) to mathematically calculating the fixed price according to a formula with various data inputs (given that “determined by the relationship” could mean “reflects” and no calculation may be required). *Id.* at 8. If

lack any new discovery or invention at all, much less invention in the application of the abstract idea of hedging risk. This is true even though the claims do not preempt all applications of hedging and even if some claims may sometimes effectively require a general-purpose computer to do the math to implement them.<sup>66</sup> This Court should bar these claims at the threshold.

## **II. Neither the Constitution Nor the Patent Act Authorizes Patents For Non-Inventive Applications of Science, Nature and Ideas.**

Before the end of the 18<sup>th</sup> Century, it was unequivocally recognized at English common law that scientific principles, naturally occurring materials, and abstract ideas were not susceptible to private ownership by patents granted under the Statute of Monopolies.<sup>67</sup> Scientists who made such discoveries were morally obliged to freely disseminate that knowledge for social benefit.<sup>68</sup> Once such discove-

---

Claim 4 contains any creativity beyond Claim 1, it must lie in data gathering, which is not part of the claim, or in the mathematical formula, which must be treated as prior art.

<sup>66</sup> *Cf. id.* at 7. Claim 4 does not specify the iterations (i) in the formula, and thus may entail a trivial calculation if calculation is required, although data therefor may be difficult to obtain.

<sup>67</sup> *See, e.g., Boulton*, 126 Eng. Rep. at 667 (interpreting 21 Jac. 1, c. 3, § 6 (1623)).

<sup>68</sup> *See, e.g., 17 Parliamentary History, supra*, at col. 999 (scientists are “intrusted by Providence with the delegated

ries were disclosed in a patent application, they were required be treated as if they were already known.<sup>69</sup> If any invention existed to support a patent, it must therefore have been in the application of science, nature, and ideas.<sup>70</sup> It was with these understandings that the relevant constitutional and statutory provisions were enacted.

---

power of imparting to their fellow-creatures that instruction which heaven meant for universal benefit; they must not be niggards to the world, or hoard up for themselves the common stock”; 1 *Robinson, supra*, at 39 (“To benefit by the discoveries of his fellow-men is thus not only a natural right, it is also the natural duty which every man owes to himself and to society; and the mutual, universal progress thence resulting is the fulfillment of the earthly destiny of the human race.”).

<sup>69</sup> See *Neilson v. Harford*, 151 Eng. Rep. 1266, 1273 (1841) (“We think the case *must be considered as if, the principle being well known*, the plaintiff had first *invented a mode of applying it* by a mechanical apparatus to furnaces; and his invention then consists in this [structural arrangement]...”) (emphasis added). See also *Flook*, 437 U.S. at 592 & n.13 (citing, *inter alia*, *O’Reilly*, 56 U.S. at 115, and *Tilghman v. Proctor*, 102 U.S. 707 (1880)).

<sup>70</sup> See *Boulton*, 126 Eng. Rep. at 667 (Lord Eyre, C.J.) (“Undoubtedly there can be no patent for a mere principle, but for a principle so far embodied and connected with corporeal substances as to be in a condition to act and to produce effects in any art, trade, mystery, or manual occupation, I think there may be a patent); *id.* at 663 (Buller, J.) (“But then it was said, that though an idea or a principle alone would not support the patent, yet that an idea reduced into practice, or a practical application of the principle was a good foundation for a patent, and was the present case.”).

Nothing in the Constitution’s record or in the contemporaneous statutory enactments suggests any intent to depart from the deeply held English belief that science, nature, and ideas could not be patented because they were to be free to all for use.<sup>71</sup> Judicial decisions from the early 19th Century interpreting the Patent Act unequivocally state this restriction on patentable subject matter.<sup>72</sup> Judicial decisions and treatises from later in the century emphatically repeat the point, treating the constitutional and statutory language as limited to inventions.<sup>73</sup>

The earliest explicit statement to this effect by this Court is in the second half of the 19<sup>th</sup> Century, in *Le Roy v. Tatham*: “A principle, in the abstract, is

---

<sup>71</sup> See, e.g., Walterscheid, Study, *supra*, at 309–27, 348–51 (discussing the evidence from the records of the Constitution and the 1790 and 1793 Acts).

<sup>72</sup> See, e.g., *Lowell*, 15 F. Cas. at 1019 (“It has been often decided, that a patent cannot be legally obtained for a mere philosophical or abstract theory.”). “Philosophical” was then understood to mean pertaining to the natural sciences. See, e.g., The Compact Edition of the Oxford English Dictionary 180 (Oxford Univ. Press 1971).

<sup>73</sup> See, e.g., *In re Kemper*, 14 F.Cas. 286, 287 (C.C.D. D.C. 1841) (No. 7,687) (“‘Invention differs from discovery.’... A discovery, in this sense, is not the subject of a patent; and it will be found, by a careful perusal of the constitution and laws of the United States upon the subject of patents for useful arts, &c., that it is not there used in this sense, but always as synonymous with invention.”) (citing Webster’s dictionary); Albert H. Walker, Text-book of the Patent Laws of the United States of America 2 (2d ed. 1889) (“The word ‘discovery’ does not have either in the Constitution or the statute, its broadest signification. It means invention, in those documents, and in them it means nothing else.”).

a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.”<sup>74</sup> *O’Reilly* repeated the point, and made clear that such new discoveries were to be treated (as in England) as if they were publicly known.<sup>75</sup> And by the middle of the 20<sup>th</sup> Century, *Funk Brothers Seed Co.* clarified that “[i]f there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful end.”<sup>76</sup> Congress revised Section 101 shortly thereafter, without changing the requirement for invention in the application.

**A. The Changes Made in the 1952 Patent Act Did Not Alter the Invention in the Application Test.**

In Section 101, Congress recodified without relevant change the statutory eligibility language that was then in existence, while making certain specific changes to the definitions in Section 100.<sup>77</sup> Congress thus preserved the judicial interpretations that had been developed, except to the extent they were affected by the definitional changes.<sup>78</sup> Section

---

<sup>74</sup> 55 U.S. (14 How.) at 175.

<sup>75</sup> See 56 U.S. (15 How.) at 115–16 (quoting *Neilson*).

<sup>76</sup> 333 U.S. at 130.

<sup>77</sup> See, e.g., H.R. Rept. 82-1928, at 6 (1952)

<sup>78</sup> See, e.g., *Central Bank of Denver v. First Interstate Bank of Denver*, 511 U.S. 164, 185 (1994) (ratification is implied when

100 of the Patent Act defined “invention” to include “invention or discovery” without substantive change, so as to simplify the statute’s language.<sup>79</sup> Section 101 also changed the archaic term “art” to “process,” and Section 100 defined “process” to include both “method” and “new uses of a known” product or process.<sup>80</sup> These changes made clear (as this Court’s cases had held) that processes and new uses were potentially eligible, but did not affect the exclusions for science, nature, and ideas nor alter the requirement for invention to exist in their application.<sup>81</sup>

In particular, the addition of the “new use” provision reversed earlier appellate cases suggesting that inventive creativity *could never* exist in applying an old structure or process to a new use.<sup>82</sup> The

---

Congress “reenacts statutory language that has been given a consistent judicial construction”).

<sup>79</sup> See, e.g., Pasquale J. Federico, *Commentary on the New Patent Act*, 75 J. Pat. & Trademark Off. Soc’y 161, 175 (1993) (1954) (explaining that the old statute used “invention or discovery” in many places; the new definition allowed use of the singular “invention”).

<sup>80</sup> 35 U.S.C. §§ 100(a) & (b), 101. See H.R. Rept. 82-1928, at 6.

<sup>81</sup> See, e.g., H.R. Rept. 82-1928, at 6; Riesenfeld, *supra*, at 301 (explaining that “it must not be concluded that the well established rule which excludes the mere discovery of natural laws and phenomena or the scientific explanation of the operation of known devices or processes from the realm of patentable inventions has lost its recognition”).

<sup>82</sup> See, e.g., *Howe*, 12 F. Cas. at 658. *But cf. Ansonia Brass & Copper Co.*, 144 U.S. at 18.

issue was brought to legislative attention by *In re Thuau*, which had deemed new uses of existing products to be beyond the statutory language—as not a new art—even though the new use was inventive.<sup>83</sup> However, in rejecting the *Thuau* doctrine and its extreme prohibition on patenting *inventive* new uses, Congress did not adopt the opposite extreme position of authorizing patents for *non-inventive* new uses.<sup>84</sup> Nothing in the history indicates any intent to alter the requirement for invention in the application. Accordingly, since enactment of Section 100(b), this Court has consistently af-

---

<sup>83</sup> See Riesenfeld, *supra*, at 298 (citing *Thuau*, 135 F.2d at 347).

<sup>84</sup> See, e.g., *id.* at 299–300 (“[T]he background of the amendment gives reason to assume that a newly discovered use for a known substance, machine or process is still only patentable if it is not merely analogous or cognate to the uses heretofore made.... [I]t is fair to state that in essence the new statutory definition of ‘process’ restores the broad principles of patentability flowing from a careful analysis of the exposition given by the Supreme Court in the *Ansonia* case.”); Federico, *supra*, at 177–78 (“The reference to the new use of a known machine or manufacture in the definition [in Section 100(b)] merely means that processes may utilize old machines or manufactures and the reference to the new use of a known process simply indicates that the procedural steps in a patentable process might be old.”). Cf. *Ansonia Brass & Copper Co.*, 144 U.S. at 18 (“[I]f an old device or process be put to a new use, which is not analogous to the old one, and the adaptation of such process to the new use *is of such a character as to require the exercise of inventive skill to produce it*, such new use will not be denied the merit of patentability.”) (emphasis added).

firmed the requirement for invention in any application of science, nature, and ideas.

**B. Interpreting the Patent Act to Authorize Patents for Non-Inventive Applications Would Conflict With the Limits in the Constitution.**

Interpreting Section 101 of the Patent Act—by itself or in light of Section 273(b)<sup>85</sup>—so broadly as to authorize eligibility of non-inventive applications would conflict with this Court’s consistent statutory interpretation that science, nature, and ideas are unpatentable. It also would raise serious constitutional conflicts that should be avoided.<sup>86</sup> Patent eligibility for non-inventive applications of science, nature, and ideas would conflict with the constitutional premise that patents should issue only for “Discoveries” of “Inventors.”<sup>87</sup> Similarly, such broad eligibility would conflict with the limitation of the

---

<sup>85</sup> 35 U.S.C. § 273(b). When enacting Section 273(b), Congress expressed its concern over the effects of the Federal Circuit’s new and expansive interpretation. *See, e.g.*, Cong. Rec. S14836 (Nov. 18, 1999). By enacting a separate restriction to *limit* those effects, Congress neither approved of the broad eligibility language of *State Street Bank* nor ratified that new test of eligibility. *See, e.g.*, *Alexander v. Sandoval*, 532 U.S. 275, 292 (2001); *Fogerty v. Fantasy*, 510 U.S. 517, 532 (1994).

<sup>86</sup> *See Gomez v. United States*, 490 U.S. 858, 864 (1989); *Ashwander v. Tennessee Valley Auth.*, 297 U.S. 288, 346–48 (1936).

<sup>87</sup> U.S. Const., art. I, § 8, cl. 8.

patent system to human creativity in the “useful Arts,”<sup>88</sup> and would impede rather than “promote the Progress of Science and useful Arts.”<sup>89</sup>

As discussed in the Court of Appeals by some of the *Amici* here,<sup>90</sup> and in other amicus briefs filed in this Court, all three constitutional limits are exceeded when patents issue for non-inventive applications of science, nature, and ideas. As discussed above, such claims directly conflict with the Constitution’s limit to “Discoveries” of “Inventors.” Further, as this Court held in *Graham v. John Deere Co.*, the patent power is “limited to the promotion of advances in the ‘useful arts,’” and Congress may not “enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby.”<sup>91</sup> Patents on non-inventive applications lack any creative, *technological* advance, and thus cross whatever line marks the border of the useful arts. Similarly, lacking the quid pro quo of disclosed technological advance, such patents create odious

---

<sup>88</sup> *Id.* See, e.g., Brief of Amici Curiae Center for Advanced Study and Research in Intellectual Property (CASRIP) and Research Affiliate Scholars at 12-20 (discussing the limits of the “useful Arts”).

<sup>89</sup> U.S. Const., art. I, § 8, cl. 8. See generally Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. Econ. Persp. 29 (1991) (discussing the effects of patents on sequential innovation).

<sup>90</sup> See Brief of Amici Curiae Ten Law Professors, *In re Bilski*, Appeal No. 2007-1130 (Fed. Cir.), at 6–10.

<sup>91</sup> 383 U.S. at 5–6.

monopolies and impede, rather than promote, scientific and technological progress.<sup>92</sup>

Such a broad interpretation of Section 101 would seriously and adversely affect innovation. Without invention in the application, patents would foreclose many (even if they do not preempt all) uses of scientific discoveries, including uses in further scientific and technological research. Eligibility for such claims would reward too little *invention* (or would impermissibly reward scientific discovery), while burdening too much sequential scientific discovery and technological invention.

The adverse effects on further scientific and technological development are particularly salient in light of the Court of Appeals recent expansive interpretation of the statutory infringement right to deny a meaningful exception for scientific experiments.<sup>93</sup> In contrast, science, nature, and ideas are the infrastructure for technological and other progress, and either sufficient incentives already exist or there are

---

<sup>92</sup> See, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989) (the patent laws reflect a “careful balance” between promoting innovation and permitting imitation); Walterscheid, Study, *supra*, at 31–58 (discussing the anti-monopoly origins of the patent power under English and colonial law); 1 Robinson, *supra*, at 51–52 (distinguishing patents from odious monopolies in that the technological advance supplies the rights that the public would otherwise enjoy).

<sup>93</sup> See *Madey v. Duke Univ.*, 307 F.3d 1351, 1361–63 (Fed. Cir. 2002).

better alternatives for society than patents for the discovery of such infrastructure.<sup>94</sup>

### CONCLUSION

For the foregoing reasons, the Court should affirm the rejection of the patent claims at issue and hold that patent eligibility requires invention in the application of any previously known or newly discovered science, nature, or ideas.

Respectfully submitted,

JOSHUA D. SARNOFF  
Counsel of Record for  
*Amici Curiae*

BARBARA JONES  
Attorney for  
*Amicus Curiae* AARP

---

<sup>94</sup> See, e.g., Brief of Amici Curiae Ten Law Professors, at 11 n.20.

**APPENDIX A**  
**LIST OF *AMICI CURIAE***  
**LAW PROFESSORS<sup>1</sup>**

Lori B. Andrews  
Distinguished Professor of Law  
Chicago-Kent College of Law

Andrew Chin  
Associate Professor  
University of North Carolina School of Law

Ralph D. Clifford  
Professor of Law  
S. New England School of Law

Christine Haight Farley  
Associate Dean and Professor of Law  
Washington College of Law, American University

Sean Fiil Flynn  
Associate Director, Program on Information Justice  
and Intellectual Property (PIJIP)  
Washington College of Law, American University

Debra Greenfield  
Visiting Scholar  
UCLA Center for Genetics & Society

Peter A. Jaszi  
Professor of Law  
Washington College of Law, American University

---

<sup>1</sup> Affiliations provided for identification purposes only.

Charles R. McManis  
Thomas and Karole Green Professor of Law  
Washington University School of Law

Lateef Mtima  
Professor of Law and Director, Institute for  
Intellectual Property and Social Justice  
Howard University School of Law

Malla Pollack  
Formerly Visiting Associate Professor  
U. of Idaho College of Law

Joshua D. Sarnoff  
Professor of the Practice of Law  
Washington College of Law, American University