

REVISING THE "ORIGINAL" PATENT CLAUSE:
*Pseudohistory in Constitutional
Construction* *

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"Our age is the most parochial since Homer. I speak not of any geographical parish: the inhabitants of Mudcombe-in-the-Meer are more aware than at any former time of what is being done and thought at Praha, at Gorki, or at Peiping. It is in the chronological sense that we are parochial. . . ."¹

I

The Past as Precedent

In a jurisprudence founded upon case law, questions of legal history occasionally must be of decisive importance. In distinction to civil law systems, where a decision is entitled to little weight as precedent even in a later controversy arising on similar facts, in common law jurisdictions the *corpus* of published decisions is the principal source of authority for settling legal disputes arising in widely divergent factual contexts. Accordingly, in the United States, the judicial analysis of legal issues necessarily places primary emphasis on a quite specific history, limited to related prior cases in a narrow field of law. The dominant method of legal scholarship emphasizes the close reading of appellate legal opinions, in order to rationalize and reconcile the diverse and often inconsistent results reached and to derive universal legal principles by critical comparison of related lines of cases.²

In the quest for definitive legal norms, history serves in various capacities. On the most concrete level, the history of litigation between

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1. Bertrand Russell, *On Being Modern-Minded*, in UNPOPULAR ESSAYS 76 (1950).

2. This method of doctrinal analysis is contrasted with the alternatives of positive analysis of law using social science methods, principally economics, and normative analysis of law, also based on the social sciences or on moral and political philosophy. Posner, *The Present Situation in Legal Scholarship*, 90 YALE L.J. 1113 (1981).

parties may have preclusive effect in an ensuing dispute. The history of their subjective assertions and negotiations, for example, may define the terms of a legal instrument, such as a contract or a patent.³ In an analogous fashion, legislative history may be relied upon to construe a statutory term, and the opinions of the framers may be examined as important sources of history in interpreting the constitutional text.⁴ Consideration of the Constitution's historical context generally is required when relying on the plain or necessary meaning of the constitutional language. Even an alternate history of common social values or expectations may be used to refine or redefine the meaning of constitutional texts.⁵

It is therefore not surprising that in the heated controversy surrounding the constitutional activism of the Supreme Court, questions of history often have been at the scorching focus of the debate. Adopting and elaborating the metaphor of a "living Constitution,"⁶ the Warren and

3. Of course, the objective understanding of a term in the trade may also be relevant history in construing contract provisions, and the objective technological history of an era contained in "prior art" publications may be used to define the legal scope of patent claims.

4. The opinions of the framers are generally regarded as important sources of history in constitutional interpretation. A minority of commentators, however, categorically denies the relevance of the drafters' intention. See, e.g., R. DWORKIN, *LAW'S EMPIRE* 359-69 (1986); Simon, *The Authority of the Framers of the Constitution: Can Originalist Interpretation be Justified?*, 73 CALIF. L. REV. 1482 (1985); Sandalow, *Constitutional Interpretation*, 79 MICH. L. REV. 1033, 1062-64 (1981).

Particularly in constitutional law, arguments distinct from those based on precedent and drafters' intent are regarded as persuasive. At least five categories of constitutional argument can be distinguished: arguments from the plain meaning of constitutional text; arguments about the framers' intent; arguments based on functional or structuralist holistic constitutional theories; arguments based on judicial precedent; and value arguments based on assumptions regarding justice or social policy. See Fallon, *A Constructivist Coherence Theory of Constitutional Interpretation*, 100 HARV. L. REV. 1189 (1987). While urging the theoretical precedence of the first three categories, Fallon concedes that in practice, "[c]onstitutional disputes frequently abound with analysis of the meaning of judicial precedents. Indeed, constitutional arguments sometimes address themselves almost entirely to the meanings of previously decided cases." *Id.* at 1202 (citing, *inter alia*, Monaghan, *Taking Supreme Court Opinions Seriously*, 39 MD. L. REV. 1 (1979); Michelman, *Constancy to an Ideal Object*, 56 N.Y.U. L. REV. 406 (1981)).

5. See, e.g., Tushnet, *Following the Rules Laid Down: A Critique of Interpretivism and Neutral Principles*, 96 HARV. L. REV. 781, 795 n. 39 (1983) (legislative debate of the fourteenth amendment is unpersuasive, when contrasted with a history including "detailed and illuminating analyses of the political and social history of Reconstruction"); Wellington, *Common Law Rules and Constitutional Double Standards: Some Notes on Adjudication*, 83 YALE L. J. 221, 248 (1973) (a society's "conventional morality" can be filtered out from the demands of moral "interest groups" by judges who possess "a necessary historical perspective").

6. Judicial reinterpretation of concepts such as due process, equal protection, and cruel and unusual punishment has largely replaced amendment as the practical method of constitutional development. See Grey, *Do We Have an Unwritten Constitution?*, 27 STAN. L. REV. 703 (1975); Reich, *Mr. Justice Black and the Living Constitution*, 76 HARV. L. REV. 673 (1963); Rehnquist, *The Notion of a Living Constitution*, 54 TEX. L. REV. 693 (1976); Reich, *The Living Constitution and the Court's Role*, in HUGO BLACK AND THE SUPREME COURT 133 (S. Strickland ed. 1967).

Burger Courts revealed a willingness to reconsider the breadth of the fundamental constitutional guarantees and restrictions upon government action, based upon a changing view of the mores and conventions of twentieth-century society.⁷ These Courts frequently proclaimed new constitutional doctrines that openly diverged from historical precedent.⁸

A recurring theme in the battle between constitutional reformists and "strict constructionists" has been the proper use of history in constitutional interpretation. More specifically, at issue has been the weight to be given to the opinions and assumptions of the constitutional drafters, expressed either at the time of the Philadelphia Convention or in the ensuing ratification debates. In order to constrain activist judges from supplying constitutional values and norms from their individual personal wealth,⁹ a return to the "original intent" of the framers has been advocated by a significant minority of commentators.¹⁰ Invoking this

7. At least since *Brown v. Board of Education*, 347 U.S. 483 (1954), the judiciary has assumed that it has wide latitude in redefining constitutional terms in the attempt to provide "evolving standards . . . that mark the progress of a maturing society." *Trop v. Dulles*, 356 U.S. 86, 100-01 (1958).

8. See, e.g., *Reynolds v. Sims*, 377 U.S. 533 (1964) (the equal protection clause of the fourteenth amendment requires apportionment of seats in both houses of bicameral state legislatures on a population basis); *Griswold v. Connecticut*, 381 U.S. 479 (1965) (constitutional right of married couples to use contraceptives); *Griffin v. Breckenridge*, 403 U.S. 88 (1971) (constitutional right of privacy under ninth amendment); *Roe v. Wade*, 410 U.S. 113 (1973) (right of privacy requires right of elective abortion in first trimester of pregnancy); *Furman v. Georgia*, 408 U.S. 238 (1972) (discretionary death penalty violates Eighth Amendment prohibition of cruel and unusual punishment).

9. In seeking to extend constitutional protection to "genuine" manifestations of contemporary moral culture, such as the option of elective abortion, a typical argument is that

[u]ltimately . . . each individual Justice . . . must ask whether particularized claims about that culture resonate with him or her. The Justices, after all, are not unfamiliar with conventional mores and attitudes; in truth it is unlikely that a very unconventional person would become a Justice of the Supreme Court. The collectivity which is the Supreme Court is, in this sense, a jury, and as a matter of political reality the Court is a jury that generally will reflect and mediate the temper of the dominant political and moral culture.

Perry, *Abortion, the Public Morals, and the Police Power: The Ethical Function of Substantive Due Process*, 23 U.C.L.A. L. REV. 689, 730-31 (1976) (citations omitted); see generally, Fish, *Fish v. Fiss*, 36 STAN. L. REV. 1325, 1333-34 (1984), J. ELY, *DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW* 43-72 (1980) [hereinafter *DEMOCRACY AND DISTRUST*]; L. TRIBE, *AMERICAN CONSTITUTIONAL LAW* 11-13 (1978).

10. See, e.g., R. BERGER, *GOVERNMENT BY JUDICIARY: THE TRANSFORMATION OF THE FOURTEENTH AMENDMENT* (1977); W. CROSSKEY & W. JEFFREY, *POLITICS AND THE CONSTITUTION IN THE HISTORY OF THE UNITED STATES: THE POLITICAL BACKGROUND OF THE FEDERAL CONVENTION* 3-38 (1980); Bork, *Neutral Principles and Some First Amendment Problems*, 47 IND. L. J. 1 (1971); Monaghan, *Our Perfect Constitution*, 56 N.Y.U. L. REV. 353, 375-76 (1981); Rehnquist, *The Notion of a Living Constitution*, 54 TEX. L. REV. 693 (1976).

historical standard, opponents of judicial constitutional innovation¹¹ have urged that judicial interpretations of basic constitutional provisions should be modelled closely upon, if not bound by, the expressed intentions of the framers.¹²

The practical significance of history in constitutional construction may be seen in *Solorio v. United States*,¹³ in which Chief Justice Rehnquist directly attacked the historical basis of a prior constitutional limitation fashioned by the Warren Court. That opinion reconsidered the rule announced in *O'Callahan v. Parker*¹⁴ that court-martial jurisdiction depends on the "service connection" of the offense charged. The *Solorio* Court overruled the earlier decision, concluding that its historical foundation was "less than accurate."¹⁵

In *O'Callahan*, the Court had reasoned that the Constitution requires civilian trial of soldiers committing civilian offenses without a service connection, based upon the assumption that "[b]oth in England prior to the American Revolution and in our own national history military trial of soldiers committing civilian offenses has been viewed with suspicion."¹⁶ Relying upon the British Articles of War in effect during the American Revolution, Justice Douglas' opinion for the Court concluded that "it was . . . the rule in Britain at the time of the American Revolution that a soldier could not be tried for a civilian offense committed in Britain; instead, military officers were required to use their energies and office to insure that the accused soldier would be tried by a civilian court."¹⁷

The *Solorio* majority¹⁸ sharply disagreed with both the conclusion that military tribunals in England were available only in the absence of ordinary civil courts, and the assertion that the 1776 American Articles of War followed such a restrictive British rule. Considering that there

11. While outspoken judicial activists most often have been pilloried in the stocks of "original intent," reliance upon this historical source has not been the exclusive province of strict constructionists. In the halcyon years of the Warren Court, some of its most innovative constitutional interpretations were expressly based on the intentions of the framers, which provided a theoretical basis for overriding a century or more of precedent.

12. This school of interpretation is commonly divided into "originalists," who look only to the original conception of constitutional terms and framers' specific intent at the time of ratification, and more moderate "interpretivists," who acknowledge the relevance of contemporary definitions and the framers' abstract intent in interpretation. See generally, Brest, *The Misconceived Quest for the Original Understanding*, 60 B.U.L. REV. 204, 223-24, 231-34 (1980); Fallon, *supra* note 4, at 1209-23.

13. 107 S. Ct. 2924 (1987).

14. 395 U.S. 258 (1969).

15. 107 S. Ct. at 2928.

16. 395 U.S. at 268.

17. *Id.* at 269.

18. Justice Stevens concurred in the judgment and filed a separate opinion, while Justice Marshall dissented and filed an opinion in which Justice Brennan joined, and in which Justice Blackmun joined in part.

was a "dearth of historical support for the *O'Callahan* holding,"¹⁹ Chief Justice Rehnquist found "the history of court-martial jurisdiction in England and this country during the 17th and 18th centuries . . . far too ambiguous to justify the restriction on the plain language of clause 14 which *O'Callahan* imported into it."²⁰

Accordingly, in *Solorio* the Court returned to the rule that court-martial jurisdiction depends solely upon the military status of the accused, which it regarded as supported both by "an unbroken line of decisions from 1866 to 1960"²¹ and the intention of the framers of the Constitution to entrust determinations of the scope of court-martial jurisdiction to the legislative branch.²² *Solorio* illustrates the remarkable extent to which resolution of a constitutional issue may depend upon a particular Court's view of history, as well as the potential for conflict between the specific history of a legal issue set forth in published court decisions and the more general history of an era upon which the Court may rely to overrule its own precedents. Whether the framers joined in "substantive disapproval of the general use of military courts for the trial or ordinary crimes"²³ or approved of George Washington's general order granting jurisdiction of such offenses to military tribunals,²⁴ it is noteworthy that the Supreme Court should have considered the historical question of pivotal importance.²⁵

The present Article is concerned generally with the dialectic of history and precedent, and more particularly with the Supreme Court's approving reliance upon extrinsic history²⁶ in reinterpreting basic constitutional provisions. Without questioning the philosophical premise that

19. 107 S. Ct. at 2931.

20. *Id.* at 2930.

21. *Id.* at 2926.

22. *Id.* at 2927, 2930.

23. 395 U.S. at 268.

24. 107 S. Ct. at 2930 n. 10 (citing a General Order dated February 24, 1779, in 14 WRITINGS OF GEORGE WASHINGTON 140-41 (J. Fitzpatrick ed. 1936)).

25. See also, *Ford v. Wainwright*, 106 S. Ct. 2595, 2600-02 (1986); *Marsh v. Chambers*, 463 U.S. 783, 788 (1983).

26. While they may lack precision, the terms "general history" and "extrinsic history" are used broadly to refer to sources, apart from precedent, developed in the litigation and adjudication of particular controversies by the Court. Since I am not attempting to distinguish between the theoretical authority of various historical sources, it is not critical that the line be precisely drawn. As a practical matter, case law is the most accessible source of history to advocates and courts engaged in litigation. Because of the extreme diversity of nonprecedential sources and the corresponding invitation to select isolated favorable passages identified as "history," it is considered useful to group sources apart from readily-discoverable judicial precedent under such an inclusive rubric. It is recognized that perhaps this definition should be refined to further distinguish quasi-"legislative" history, such as Madison's minutes of the Philadelphia Convention, public debate such as *The Federalist*, or legislative discussion of constitutional amendments, from the private letters of the framers expressing their personal opinions, and from nonlegal or general history.

history is capable of providing authoritative guidance, I propose to examine the historical methodology employed by the Court, considering the Court's use of history in reaching a decision rather than simply the result extracted by this process. In an effort to avoid the Scylla of hidden individualistic biases²⁷ implicit in distinguishing "preferred"²⁸ constitutional values, and the Charybdis of personal moral judgments²⁹ seen in the constitutional mirror as "fundamental" rights,³⁰ I steer wide of the whirlpools of modern constitutional debate,³¹ and turn instead to the article I, section 8 legislative power "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries."³² By addressing the historical basis of the Court's recent pronouncements on

27. Ely identifies a "systematic bias" in the selection of fundamental values in favor of the upper-middle, professional class, with a judicial preference for freedom of expression, association, education, academic freedom, the privacy of the home, and personal autonomy, as opposed to "jobs, food or housing." *DEMOCRACY AND DISTRUST*, *supra* note 9, at 59. Tushnet maintains that modern value-oriented constitutional theory is "essentially a concomitant of liberalism," referring to the political philosophy of Hobbes, Locke and Mill. Tushnet, *supra* note 5, at 783.

28. See Justice Stone's dissenting opinion in *Jones v. Opelika*, 316 U.S. 584, 608 (1942), identifying the first amendment safeguards of freedom of speech and religion as "in a preferred position" in the constitutional hierarchy. Compare his celebrated statement calling for a stricter standard of judicial review for statutes directed at discrete and insular minorities, in *United States v. Carolene Products Co.*, 304 U.S. 144, 152-53 n.4 (1938). While renouncing subjective moral criteria, Ely's representation-reinforcing, privileged-factor system nonetheless permits legislative action directed against minorities if the prohibition is based on the "bona fide feeling that it is immoral." *DEMOCRACY AND DISTRUST*, *supra* note 9, at 256 n. 92. See Fallon, *supra* note 4, at 1220 (Ely's theory "fails . . . in its inability to resolve the paradox that lies at the heart of its treatment of arguments of value.").

29. "Every now and then, of course, courts assert that value choices are never for them to make but are solely the domain of the political branches. However, protestations of this kind are simply not credible. . . . Value arguments are even more prominent; indeed, they enjoy almost total predominance, in much of the most respected modern constitutional scholarship." Fallon, *supra* note 4, at 1204 (citations omitted).

30. The controversy over the significance and determination of appropriate general social values which should receive constitutional protection is surveyed in Brest, *The Fundamental Rights Controversy: The Essential Contradictions of Normative Constitutional Scholarship*, 90 *YALE L. J.* 1063 (1981). See also, Wiseman, *The New Supreme Court Commentators: The Principled, the Political, and the Philosophical*, 10 *HASTINGS CONST. L. Q.* 315 (1983).

31. Scholarly interest has been most intense in the abstract, "open-ended" constitutional guarantees of equal protection, due process, privileges and immunities, ninth amendment reservations, and derivative rights such as the right to privacy. By avoiding the conventional route that begins with consideration of the most abstract constitutional values, in favor of one of the more concrete constitutional provisions, I hope to illustrate the perils of relying on history even in a realm of relatively low emotional charge, where "significances are relatively unlikely to vary with cultural change." See Tushnet, *supra* note 5, at 802 n. 58 (quoting W. Quine, *WORD AND OBJECT* 28-29 (1960)).

32. U.S. CONST. art. I, § 8, cl. 8 ("intellectual property clause").

the patent portion of this clause,³³ it is hoped that the present Article will contribute to a reappraisal of the actual history of patent law and the constitutional extent of the enumerated power. More generally, a critique is attempted of the historical methodology employed by the Court, proceeding on the belief that a detailed analysis of the history of a single constitutional topic can lead to conclusions of more general validity by identifying the Court's approach to history and suggesting limitations inherent in the process of decision that are independent of particular subject matter. By examining the historical exegesis of the Court against the background of a discrete and well-documented early legal history, the present Article addresses a broader issue: whether the citation of extrinsic history is an appropriate basis for constitutional construction by the courts.

II

The Patentability Standard of Nonobviousness as a Constitutional Limitation

In *Graham v. John Deere Co.*,³⁴ the Court for the first time imposed a significant constitutional restraint³⁵ upon the legislative power "to promote the progress of . . . useful arts, by securing for limited times to . . . inventors the exclusive right to their . . . discoveries."³⁶ Considering the

33. See *infra* note 36.

34. 383 U.S. 1 (1966). The first three Supreme Court cases construing the 1952 patent act, *Graham*; *Caimar, Inc. v. Cook Chemical Co.*, 383 U.S. 1 (1966); and *United States v. Adams*, 383 U.S. 39 (1966), provide the most pertinent guidance from the Supreme Court to date in construing the patent clause portion of the intellectual property clause.

35. A critical analysis of the *Graham* constitutional dictum from the viewpoint of modern constitutional theory is provided in Burchfiel, *The Constitutional Intellectual Property Power: Progress of Useful Arts and the Legal Protection of Semiconductor Technology*, 28 SANTA CLARA L. REV. 473 (1988).

36. In *Graham*, consideration of the constitutional issue was expressly limited to the patent portion of the intellectual property clause (the "patent clause"), 383 U.S. at 5 n.1. The Court indicated that the patent clause appears in the Constitution "spliced together with the copyright provision, which we omit as not relevant here." *Id.* (referring to H.R. REP. NO. 1923, 82d Cong., 2d Sess. 4 (1952)); see also R. DEWOLF, AN OUTLINE OF COPYRIGHT LAW 15 (1925). In separating the patent provision of the intellectual property clause from the copyright provision, the Court appears to have agreed with the view that the intellectual property clause is a "balanced sentence" in which the patent power is intended to promote the progress of useful arts, and the copyright power is intended to promote the progress of science, since the authorities cited by the Court express this opinion. See generally, Lutz, *Patents and Science: A Clarification of the Patent Clause of the United States Constitution*, 18 GEO. WASH. L. REV. 50 (1949); FEDERICO, COMMENTARY ON THE NEW PATENT ACT, 35 U.S.C.A. § 1, 3 (1954); Rich, *Principles of Patentability*, 28 GEO. WASH. L. REV. 393, 394-97 (1960); cf. Fenning, *The Origin of the Patent and Copyright Clause of the Constitution*, 11 J. PAT. OFF. SOC'Y 438, 441-42 (1929) (drafts of intellectual property clause phrased in two sentences).

patent clause to be "both a grant of power and a limitation,"³⁷ the Court initially described the constitutional proscription in general terms:

The Congress in the exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. Nor may it enlarge the patent monopoly without regard to the innovation, advancement or social benefit gained thereby. Moreover, Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available. Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must "promote the Progress of . . . useful Arts." This is the *standard* expressed in the Constitution and it may not be ignored.³⁸

This explanation indicates that one constitutional limitation is the requirement of novelty, since inventions already in the public domain may not be the subject of patents.³⁹

A second constitutional limitation envisioned by the Court appears to be a requirement of a minimum objective difference,⁴⁰ beyond novelty, between an invention to be patented and the prior art. It is specifically in the context of the statutory nonobviousness requirement⁴¹ that the Court explains that "patent validity 'requires reference to a standard written into the Constitution.'"⁴² This oblique suggestion of a constitutional requirement of a threshold difference between an invention and the prior art is reinforced by the Court's conclusion that the non-

37. *Graham*, 383 U.S. at 5.

38. *Id.* at 6 (emphasis in original).

39. Novelty has been a statutory requirement for patentability since enactment of the first United States patent act (Act of Apr. 10, 1790, ch. 33, 1 Stat. 109 (1845)). The current novelty requirement is contained in 35 U.S.C. § 101 (1982), and a specific enumeration of events that will defeat novelty is provided in 35 U.S.C. § 102 (1982). A claimed invention is not new or is "anticipated" under the patent law if every element of the claim at issue is identically described or disclosed in a single effective "prior art" reference. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715-16 (Fed. Cir. 1984); *Ralston Purina Co. v. Far-Mar-Co.*, 772 F.2d 1570, 1574 (Fed. Cir. 1985).

40. A useful invention which is novel in the sense that it is not identically described in an effective prior art reference will be denied patentability "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103 (Supp. II 1984).

41. *Id.*

42. *Graham*, 383 U.S. at 6 (quoting the concurring opinion of Justice Douglas in *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Co.*, 340 U.S. 147, 154 (1950)).

obviousness standard of Section 103 "comports with the constitutional strictures."⁴³ A further indication that the Court considers the Constitution to require such a minimum difference is provided by the Court's approving reference to Thomas Jefferson's views on the "general nature of the limited patent monopoly under the Constitution"⁴⁴ and his asserted "insistence upon a high level of patentability"⁴⁵ as one of the first administrators of the United States patent system.⁴⁶

Despite the indistinct marking of the boundaries imposed by the patent clause, the intention of the Court to establish a constitutional requirement of a minimum difference from the prior art beyond mere novelty is most clearly indicated by its adoption of the constitutional theory expressed in the concurring opinion of Justices Douglas and Black in *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Co.*⁴⁷ ("A & P"). The majority opinion in that case made no reference to the Constitution in holding a patent for an apparently simple mechanical combination⁴⁸ invalid for want of "patentable invention."⁴⁹ The concurring opinion, however, in a vitriolic attack on assertedly "incredible

43. *Graham*, 383 U.S. at 17.

44. *Id.* at 7.

45. The Court states that "Jefferson did not believe in granting patents for small details, obvious improvements, or frivolous devices. His writings evidence his insistence upon a high level of patentability." *Graham*, 383 U.S. at 9. See Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237, 241 (1936).

46. As Secretary of State, Jefferson is considered to have personally reviewed each of the sixty-seven patents issued prior to December 31, 1793, when his three and one-half year term ended. Fouts, *Jefferson the Inventor, and his Relation to the Patent System*, 4 J. PAT. OFF. SOC'Y 316, 331 (1922).

47. 340 U.S. 147, 154 (1950) [hereinafter A & P].

48. The involved claims were construed by the Court as relating to a supermarket cashier's counter equipped with a three-sided frame, or rack, with no top or bottom, which, when pushed or pulled, would move groceries deposited within it by a customer to the checking clerk and leave them there when it was pushed back to repeat the operation. The device was kept on the counter by guides. *Id.* at 149.

49. The opinion has been criticized not only for its suggestion that a different and more exacting standard of invention applies to a combination that is made up entirely of old elements, but also for the delphic requirement imposed in such cases that "only when the whole in some way exceeds the sum of its parts is the accumulation of old devices patentable." *Id.* at 152. See, e.g., Rich, *Laying the Ghost of the 'Invention' Requirement*, 1 AM. PAT. L. ASS'N Q. J. 26, 32-33 (1972); Note, *After Black Rock: New Tests of Patentability—The Old Tests of Invention*, 39 GEO. WASH. L. REV. 123, 132-35 (1970). Neither standard has withstood the test of subsequent judicial scrutiny, particularly in the Federal Circuit. See, e.g., Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1548-49 (Fed. Cir. 1983) (rejecting the argument that combination patents are subject to a more exacting standard); *Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 1150 (Fed. Cir. 1983) (no requirement of synergism or new, unusual or surprising results for patentability). See generally, Harris, *Prospects for Supreme Court Review of the Federal Circuit Standards for Obviousness of Inventions Combining Old Elements*, 68 J. PAT. OFF. SOC'Y 66 (1986).

patents which the Patent Office ha[d] spawned,"⁵⁰ maintained that

every patent case involving validity presents a question which requires reference to a standard written into the Constitution. Article 1, Section 8 contains a grant to the Congress of the power to permit patents to be issued. But unlike most of the specific powers which Congress is given that grant is qualified. The Congress does not have free reign, for example, to decide that patents should be easily or freely given. The Congress acts under the restraint imposed by the statement of purpose in Art. 1, § 8.⁵¹

According to this view, the intellectual property clause itself imposes a minimum requirement for "invention," beyond novelty and utility, independent of any patent statute. The constitutional standard is asserted to require that an invention, to be patentable, must "push back the frontiers of chemistry, physics, and the like" and "make a distinctive contribution to scientific knowledge."⁵²

By favorably citing the *A & P* concurring opinion, *Graham* clearly suggests that the Supreme Court considered the issue of a minimum difference between an invention and the prior art to be required, not only by previous judicial construction of statutory patent law, but also by the Constitution. Although the Court clearly rejected any reading of the intellectual property clause that would require that an invention advance the frontiers of natural science, *Graham* does not define the minimum difference required by the Constitution. However, the Court refers to the "general condition of patentability" formulated in *Hotchkiss v. Greenwood*⁵³ as the "cornerstone of the judicial evolution suggested by Jefferson and left to the courts by Congress."⁵⁴ This reference seems to elevate to constitutional status the *Hotchkiss* test for distinguishing between new and useful innovations that were, and were not, capable of sustaining a

50. *A & P*, *supra* note 47, at 158.

51. *Id.* at 154.

52. *Id.* This theory is discussed *infra* notes 340-49 and accompanying text.

53. 52 U.S. (11 How.) 248 (1851). In *Hotchkiss*, the Supreme Court for the first time articulated the requirement that in order to be patentable, an invention must require more ingenuity and skill than that possessed by an ordinary mechanic acquainted with the business. The patent at issue, which related to the mere substitution of clay or porcelain for wood or metal as materials for making doorknobs, was held invalid because of "an absence of that degree of skill and ingenuity which constitute essential elements of every invention." *Id.* at 267.

54. 383 U.S. at 11.

patent.⁵⁵ The distinction established in *Hotchkiss* between the work of a skilled mechanic and that of an inventor dominated consideration of the patentable invention requirement until the 1952 revision of the patent statute. Although the current statute phrases the pertinent inquiry in terms of "obviousness" rather than "invention," the basic approach of *Hotchkiss* in requiring a comparison between the subject matter of a patent and the prior art, with the threshold objective difference being gauged by reference to one of ordinary skill in the pertinent art, has been adopted in Section 103.⁵⁶

III

The History of the Constitutional Standard

The inquiry into whether the intellectual property clause imposes a minimum standard akin to nonobviousness as a condition for patent validity is essentially historical, because the discovery by the *Graham* Court of a constitutional "standard" in the intellectual property clause is based primarily upon the "stated purpose of the Framers."⁵⁷ The absence of any evidence indicating the intentions⁵⁸ or identities⁵⁹ of the actual framers of the intellectual property clause did not prevent an imaginative reconstruction based principally upon the letters of Thomas Jefferson.⁶⁰

55. This is a widely shared assumption of the commentators, both among supporters of the standard, see, e.g., Rosenblatt, *The Constitutional Standard for "Ordinary Skill in the Art,"* 54 J. PAT. OFF. SOC'Y 435 (1972); Irons & Sears, *The Constitutional Standard of Invention—The Touchstone for Patent Reform*, 1973 UTAH L. REV. 653; and its critics. See, e.g., Seidel, *The Constitution and a Standard of Patentability*, 48 J. PAT. OFF. SOC'Y 5 (1966); Kimball, *An Analysis of Recent Supreme Court Assertions Regarding a Constitutional Standard of Invention*, 1 AM. PAT. L. ASS'N Q. J. 204 (1973); Note, *The 1966 Patent Cases: Creation of a Constitutional Standard*, 54 GEO. L. J. 1320 (1966).

56. See *Graham*, 383 U.S. at 14–17. Unlike the novelty requirement, see *supra* note 39, the nonobviousness requirement was first included as a statutory prerequisite in the comprehensive 1952 revision of the patent statute, Act of July 19, 1952, ch. 950, 66 Stat. 792, 798 (1953) (current version at 35 U.S.C. § 101 (1982)).

57. *Graham*, 383 U.S. at 6.

58. The intellectual property clause was adopted without debate in the Constitutional Convention, and there was no reference to the clause in the minutes of the drafting committee. See Fenning, *The Origin of the Patent and Copyright Clause of the Constitution*, 11 J. PAT. OFF. SOC'Y 438, 443 (1929).

59. It is unclear whether the author of the intellectual property clause was Charles Pinckney of South Carolina or James Madison. Both submitted proposals for copyright and patent powers to the Constitutional Convention, but the language adopted in the Constitution does not correspond to any of their suggestions. The more general language of the intellectual property clause originated in the Committee of Eleven. There is no indication of the identity of its drafter. *Id.*

60. Jefferson's activities as an inventor and as administrator of the first United States patent act as Secretary of State are described in Fouts, *Jefferson the Inventor, and his Relation to the Patent System*, 4 J. PAT. OFF. SOC'Y 316 (1922); Federico, *Operation of the*

Jefferson, who was in France during the Constitutional Convention in the summer of 1787, played no role in the drafting of the Constitution, but promptly responded to the adoption of the intellectual property clause with a proposal for its effective repeal by a bill of rights provision that would have prohibited any "monopolies," including those for a limited term intended to stimulate "ingenuity."⁶¹ This suggestion was rejected by the drafters of the Bill of Rights in Congress, along with Jefferson's later proposal for a ninth article to the Constitution which would have permitted limited "monopolies" for literary productions and inventions.⁶² Jefferson's unheeded proposals for restriction, if not elimination, of the intellectual property power indicate that his opinions were shared neither by the framers of the Constitution nor by the Congress that drafted the Bill of Rights.⁶³

Nonetheless, the *Graham* Court indicates that Jefferson's views are "worthy of note" in divining the unexpressed intentions of the unknown framers,⁶⁴ and the Court remedies the deficiencies in the history of the constitutional provision by imputing Jefferson's "instinctive aversion to

Patent Act of 1790, 18 J. PAT. OFF. SOC'Y 237 (1936); and Note, *The 1966 Patent Cases: Creation of a Constitutional Standard*, 54 GEO. L. J. 1320, 1331-33 (1966).

61. In July, 1788, Jefferson communicated his objections to Madison:

I sincerely rejoice at the acceptance of our new constitution by nine States. It is a good canvas, on which some strokes only want retouching. What these are, I think are sufficiently manifested by the general voice from north to south, which calls for a bill of rights. It seems pretty generally understood that this should go to . . . Monopolies. . . . The saying there shall be no monopolies lessens the incitements to ingenuity, which spurred on by the hope of a monopoly for a limited time, as of 14 years; but the benefit even of limited monopolies is too doubtful to be opposed to that of their general suppression.

V WRITINGS OF THOMAS JEFFERSON 45, 47 (Ford ed. 1895); see also Letter to Madison (Dec. 1787), in IV WRITINGS OF THOMAS JEFFERSON 476 (Ford ed. 1895).

62. In August 1789, just before the adoption of the Bill of Rights by Congress on September 24, Jefferson again expressed his dissatisfaction with the intellectual property clause to Madison:

I like [the declaration of rights] as far as it goes; but I should have been for going further. For instance, the following alterations and additions would have pleased me. . . . Article 9. Monopolies may be allowed to persons for their own productions in literature, & their own inventions in the arts, for a term not exceeding — years but for no longer term & no other purpose.

V WRITINGS OF THOMAS JEFFERSON 112, 113 (Ford ed. 1895).

63. The distinction between Jefferson's proposals for reform, and his view of the constitutional provision actually enacted by the framers, is discussed *infra* text accompanying notes 312-14.

64. *Graham*, 383 U.S. at 7.

monopolies,"⁶⁵ along with his "insistence upon a high level of patentability,"⁶⁶ generally to other Americans. Jefferson's preeminence in the Court's history of patentability is based upon his experience in reviewing patent applications under the 1790 patent act as Secretary of State⁶⁷ and as the "author" of the 1793 patent act.⁶⁸ The Court's historical analysis of the nonobviousness requirement, however, overlooks the express rejection by Congress of the defense included by Jefferson in the draft 1793 patent act that an invention "is so unimportant and obvious that it ought not be the subject of an exclusive right."⁶⁹

The Court also fails to consider the contemporaneous construction of the patent statute and the constitutional provision in the courts. In evaluating the accuracy of the history presented in *Graham*, a primary question is whether such a nonobviousness standard was recognized, either as a matter of constitutional law or statutory interpretation, by those most familiar with the intentions of the framers—the federal judges who fashioned American patent law on the basis of the earliest patent acts.⁷⁰

65. *Id.*

66. *Id.* at 9.

67. *Id.* at 6–7.

68. *Id.* Evidently the Court refers to the Draft of a Bill to Promote the Progress of the Useful Arts, in *V WRITINGS OF THOMAS JEFFERSON* 278 (Ford ed. 1895). This bill was introduced in the House of Representatives on February 7, 1791, but no action was taken on it until the next Congress, which adopted it with a number of significant changes with respect to conditions for patent validity and infringement. Congress eliminated Jefferson's proposed defenses that an infringer's "knowledge was not derived from any party from, through or in whom the right is claimed"; that "[the infringer] did not know that there existed an exclusive right to the said invention"; and that the description or model of the invention "do[es] not contain the whole matter necessary to possess the public of the full benefit thereof after the expiration of the exclusive right." *Id.*

69. *Id.*

70. In *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884), the Supreme Court emphasized the importance of early legislation to the proper construction of the intellectual property clause:

The construction placed upon the Constitution by the first act of 1790, and the act of 1802, by the men who were contemporary with its formation, many of whom were members of the convention which framed it, is of itself entitled to very great weight, and when it is remembered that the rights thus established have not been disputed during a period of nearly a century, it is almost conclusive.

Id. at 57.

A. Supreme Court Precedent

Apart from its reference to the concurring opinion in *A & P*,⁷¹ the *Graham* Court cited no case precedent for the conclusion that the intellectual property clause "is both a grant of power and a limitation."⁷² This constitutional doctrine had never been clearly articulated before the *A & P* decision. In the century between the first formulation of the "patentable invention" standard in *Hotchkiss*,⁷³ and the codification of the nonobviousness standard in section 103,⁷⁴ the requirement of a minimum difference beyond mere novelty was judicially developed in the context of statutory patent law fashioned by Congress. In this era, the Supreme Court generally indicated its intention to fulfill the legislative purpose without recognizing an implicit constitutional limitation on congressional power to define specific conditions for patentability.⁷⁵ Only with the appearance of antimonopolist fervor in the Court during the 1940's was the theory of an implicit limitation in the intellectual property clause developed, leading to the concurring opinion in *A & P* and its adoption in *Graham*.⁷⁶

It is noteworthy that the *A & P* concurring opinion itself identifies no precedent supporting the constitutional theory advanced that the legislative power to grant patents is "qualified" by the statement of purpose contained in article I, section 8, or that the standard of patentability is constitutional rather than statutory.⁷⁷ Neither the cases cited in support of the "inventive genius" standard⁷⁸ nor Justice Bradley's antimonopolist credo from *Atlantic Works v. Brady*⁷⁹ rests on a constitutional basis, and

71. See *supra* note 47.

72. *Graham*, 383 U.S. at 5.

73. 52 U.S. (11 How.) 248 (1851). See *supra* note 53 and accompanying text.

74. Act of July 19, 1952, ch. 950, 66 Stat. 792, 798 (1953).

75. See generally cases cited *infra* notes 80-82.

76. The impact in the Supreme Court of patent pooling practices during the Great Depression, and their condemnation by the Temporary National Economic Committee, is described in Gregg, *Tracing the Concept of "Patentable Invention,"* 13 VILL. L. REV. 98, 104-06 (1967). See *Williams Mfg. Co. v. United States Shoe Mach. Corp.*, 316 U.S. 364, 380-82 (1942) (Black, J., dissenting, joined by Justices Douglas and Murphy).

77. *A & P*, *supra* note 47, at 154-55.

78. *Reckendorfer v. Faber*, 92 U.S. 347 (1875); *Smith v. Whitman Saddle Co.*, 148 U.S. 674 (1893); *Potts v. Creager*, 155 U.S. 597 (1895); *Concrete Appliances Co. v. Gomery*, 269 U.S. 177 (1925); *Mantle Lamp Co. v. Aluminum Products Co.*, 301 U.S. 544 (1937); *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U.S. 84 (1941).

79. 107 U.S. 192, 200 (1882). The *A & P* concurring opinion approvingly refers to Justice Bradley's condemnation in *Atlantic Works* of the "indiscriminate creation of exclusive privileges" under the patent laws that has the effect of creating "a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts." *A & P*, *supra* note 47, at 155.

none of the twenty Supreme Court cases cited as invalidating "flimsy and spurious" patents⁸⁰ so much as refers to the asserted "constitutional standards which are supposed to govern" determinations of patent validity.⁸¹

Prior to *A & P*, the constitutional theory proposed in the concurring opinion had not been expounded clearly even by Justices Douglas and Black, the propounders of that opinion. In a previous opinion for the Court in *Cuno Engineering Corp. v. Automatic Devices Corp.*,⁸² Justice Douglas invalidated a patent for an automobile cigar lighter,⁸³ applying the recognized statutory invention test in a straightforward manner.⁸⁴ The only reference to the Constitution is the oblique statement that the skill of the patentee did not reach "the level of inventive genius which the Constitution (Art. I, § 8) authorizes Congress to reward."⁸⁵ Three years later, in *Goodyear Tire & Rubber Co. v. Ray-O-Vac Co.*,⁸⁶ Justice Black dissented vigorously from a decision sustaining the validity of an admittedly simple leakproof flashlight cell, without mention of any

80. *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248 (1851); *Rubber Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498 (1874); *Union Paper Collar Co. v. Van Dusen*, 90 U.S. (23 Wall.) 530 (1874); *Brown v. Piper*, 91 U.S. 37 (1875); *Reckendorfer v. Faber*, 92 U.S. 347 (1875); *Dalton v. Jennings*, 93 U.S. 271 (1876); *Double-Pointed Tack Co. v. Two Rivers Mfg. Co.*, 109 U.S. 117 (1883); *Miller v. Foree*, 116 U.S. 22 (1885); *Preston v. Manard*, 116 U.S. 661 (1886); *Hendy v. Miner's Iron Works*, 127 U.S. 370 (1888); *St. Germain v. Brunswick*, 135 U.S. 227 (1890); *Shenfield v. Nashawainuck Mfg. Co.*, 137 U.S. 56 (1890); *Florsheim v. Schilling*, 137 U.S. 64 (1890); *Cluett v. Clafin*, 140 U.S. 180 (1891); *Adams v. Bellaire Stamping Co.*, 141 U.S. 539 (1891); *Patent Clothing Co. v. Glover*, 141 U.S. 560 (1891); *Pope Mfg. Co. v. Gormully Mfg. Co.*, 144 U.S. 238 (1892); *Knapp v. Morss*, 150 U.S. 221 (1893); *Morgan Envelope Co. v. Albany Paper Co.*, 152 U.S. 425 (1894); and *Dunham v. Dennison Mfg. Co.*, 154 U.S. 103 (1894). The ancient vintage of these cases is apparent; with the exception of *Hotchkiss*, they stem from the post-Civil War period of antimonopolist fervor which culminated in enactment of the Sherman Act in 1890. See generally, Letwin, *Congress and the Sherman Antitrust Law: 1887-1890*, 23 U. CHI. L. REV. 221, 232-35 (1956).

81. *A & P*, *supra* note 47, at 158.

82. 314 U.S. 84 (1941).

83. The Court held that the use of a known thermostat to break the circuit in a known wireless lighter required no more "ingenuity" than that "expected of a mechanic skilled in the art." *Id.* at 91-92.

84. The Court applied the statutory test of invention stemming from *Hotchkiss*, expressly indicating that "[u]nder the statute (35 U.S.C. § 31; R. S. § 4886) the device must not only be 'new and useful,' it must also be an 'invention' or 'discovery.'" *Id.* at 90. See discussion of *Hotchkiss*, *supra* note 53 and accompanying text.

85. *Id.* at 91. In the context of a decision based simply upon the statutory requirement, this passage cannot be regarded as a clear indication that the Constitution requires a minimum difference from the prior art, but rather that the Constitution authorizes Congress to impose a minimum standard in its discretion. The controversial "flash of genius" criterion applied by Justice Douglas was later overruled by Congress' enactment of 35 U.S.C. § 103, and for this reason, the criterion clearly cannot refer to any proper "constitutional" standard. See *Graham*, 383 U.S. at 15. The legislative history of this issue is summarized in Note, *The Standard of Patentability — Judicial Interpretation of Section 103 of the Patent Act*, 63 COLUM. L. REV. 306, 310-12 (1963).

86. 321 U.S. 275, 279 (1944). Justices Douglas and Murphy joined in the dissent.

constitutionally required validity principle.⁸⁷

A conceptually distinct constitutional theory is presented by Justice Black's dissent in *Exhibit Supply Co. v. Ace Patents Corp.*⁸⁸ This theory is based not upon the requirement of promoting the progress of the useful arts, but rather upon an essentially semantic argument that the constitutional terms "inventors" and "discoveries" may be redefined according to individual justices' views of the intrinsic worth of inventions.⁸⁹ This approach was not followed in *Graham*, perhaps because of the enormous practical difficulties that would have been presented by constitutionalizing an unworkable⁹⁰ subjective standard that had been expressly supplanted in the 1952 revision of the patent statute.⁹¹

The earlier history of the patentability standard also fails to disclose any more definite conception of implicit limitations on congressional discretion in article I, section 8, and at most contains scattered references to

87. The Court described the invention in hindsight as "simple and such as should have been obvious to those who worked in the field" but despite this conclusion held that "this is not enough to negative invention." *Id.* at 279. Evidently the Court was influenced by the immediate commercial success of the improved cell, *id.*, and the absence of prior art addressing the problems of preventing both leakage and swelling in a dry cell. *Id.* at 276.

88. 315 U.S. 126, 137 (1942). Justice Douglas joined in the dissent.

89. Justice Black opined:

The Constitution authorizes the granting of patent privileges only to inventors who make "discoveries." And the statute provides for the granting of patents only to those who have "invented or discovered" something "new." To call the device here an invention or discovery such as was contemplated by the Constitution or the statute is, in my judgment, to degrade the meaning of these terms.

Id. at 138. Evidently the "degradation" of the constitutional and statutory terms resulted from the humble nature of the invention at issue—a contact switch for pinball machines. *Id.* at 127–28. See also, *Williams Mfg. Co. v. United States Shoe Mach. Corp.*, 316 U.S. 364, 384 (1942) (Black, J., dissenting).

90. Judge Rich, formerly of the Court of Appeals for the Federal Circuit, has described the vagaries of the "undefinable concept of 'invention'" and the improvement wrought by substituting the nonobviousness criterion, concluding, "[t]here is a vast difference between basing a decision on exercise of the inventive or creative faculty, or genius, ingenuity, patentable novelty, flashes, surprises and excitement, on the one hand, and basing it on unobviousness to one of ordinary skill in the art on the other." Rich, *Principles of Patentability*, 28 GEO. WASH. L. REV. 393, 406 (1960). See also Rich, *The Vague Concept of "Invention" as Replaced by Section 103 of the 1952 Patent Act*, 8 IDEA 136 (1964); Rich, *Laying the Ghost of the "Invention" Requirement*, 1 AM. PAT. L. ASS'N Q. J. 26 (1972).

91. The term "invention" is used in 35 U.S.C. § 101 (1982) to refer generally to the statutory categories of patentable subject matter. Sections 102 and 103 state that an "invention" can be anticipated or rendered obvious by the prior art. 35 U.S.C. §§ 102, 103 (Supp. II 1984). One of the purposes of the 1952 revision was to clarify that "invention" is a neutral term that can be applied either to discoveries that meet the statutory requirements of novelty and nonobviousness or to those that do not. See FEDERICO, COMMENTARY ON THE NEW PATENT ACT, 35 U.S.C.A. § 1, 17 (1954).

the general constitutional purpose fulfilled by the patent statutes.⁹² In *Hollister v. Benedict & Burnham Mfg. Co.*⁹³ the Court invalidated a patent claiming an improved revenue stamp for liquor barrels, which was conceded to be new and useful, on the basis that it was "not such an improvement as is entitled to be regarded in the sense of the patent laws as an invention."⁹⁴ Based on the common knowledge that cutting out a portion of the stamp would prevent a second use, the Court reasoned that creating the claimed self-mutilating stamp displayed "only the expected skill of the calling . . . and is in no sense the creative work of that inventive faculty which it is the purpose of the Constitution and the patent laws to encourage and reward."⁹⁵ Similarly, in *Thompson v. Boisselier*,⁹⁶ invalidating a claim to a water closet valve, the Court indicated that the patent statute⁹⁷ had always carried out the requirement of the intellectual property clause that the "beneficiary must be an inventor and he must

92. The suggestion of a limit in the "copyright clause," that part of the intellectual property clause referring to "writings," received more attention in early cases in the lower courts, with copyright protection being denied to works considered to offend morality. In *Martinetti v. Maguire*, 16 F. Cas. 920 (C.C.D. Cal. 1867) (No. 9,173), District Judge Deady ruled that the "spectacle of women lying about loose" either "in novel dress or no dress, and in attractive attitudes or action" in a stage production reminiscent of "a sort of Mohammedan paradise," was not a "dramatic work" in the sense of the copyright act. *Id.* at 922. A limit in the purpose of the copyright clause was identified as condemning

a dramatic composition which is grossly indecent, and calculated to corrupt the morals of the people. The exhibition of such a drama neither "promotes the progress of science or useful arts," but the contrary. The constitution does not authorize the protection of such productions, and it is not to be presumed that congress intended to go beyond its power in this respect to secure their "authors and inventors the exclusive right" to the use of them.

Id.

Infrequently litigated, but occasionally followed, the reading of the copyright clause that would restrict the copyright power to non-obscene works was authoritatively rejected in *Mitchell Bros. Film Group v. Cinema Adult Theater*, 604 F.2d 852, 859-60 (5th Cir. 1979), *cert. denied*, 445 U.S. 917 (1980) (citing earlier cases, 604 F.2d at 859 n.16). *Accord*, *Jartech, Inc. v. Clancy*, 666 F.2d 403, 406 (9th Cir. 1982); *see generally*, I M. NIMMER, *NIMMER ON COPYRIGHT*, § 2.17 (1985). Modern circuit courts have refused to find such a limit in the intellectual property clause, considering that interpretation to be contrary to the principles of construction governing the article I, section 8 powers, as augmented by the necessary and proper clause. *See Mitchell Bros. Film Group v. Cinema Adult Theater*, 604 F.2d at 859-60; *Schnapper v. Foley*, 667 F.2d 102, 112 (D.C. Cir. 1981), *cert. denied*, 455 U.S. 948 (1982).

93. 113 U.S. 59 (1885).

94. *Id.* at 71.

95. *Id.* at 73.

96. 114 U.S. 1 (1885).

97. The Court based its decision on section six of the Patent Act of 1836, the pertinent statute in force when the patents at issue were granted. *Id.* at 11.

have made a discovery."⁹⁸ Citing the language of the patent statute, the Court explained that novelty and utility were not enough to patent a thing, but that "it must, under the Constitution and the statute, amount to an invention or discovery."⁹⁹ Neither decision contains any discussion of a constitutional requirement distinct from the statutory standard fashioned by Congress, nor indicates that Congress is limited by the intellectual property clause in selecting a minimum patentability standard.¹⁰⁰

Any doubt as to whether the intellectual property clause, as distinguished from the remaining enumerated powers of article I, was historically regarded as implying hidden constitutional prohibitions based upon an intrinsic constitutional antagonism to limited patent rights should be dispelled by the affirmative declaration in *McClurg v. Kingsland*¹⁰¹ that

the power of Congress to legislate upon the subject of patents is plenary by the terms of the Constitution, and as there are no restraints on its exercise, there can be no limitation of their right to modify [the patent laws] at their pleasure, so long as they do not take away the rights of property in existing patents.¹⁰²

98. *Id.*

99. *Id.* This language, which is no more than a repetition without elaboration of the constitutional terminology, was quoted in *Gardner v. Herz*, 118 U.S. 180, 191-92 (1886). *Cf.* *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 279 (1976) ("It has long been clear that the Constitution requires that there be some 'invention' to be entitled to patent protection.")

100. *Thompson v. Boisselier* has been interpreted as: a simple application of the statutory standard, Note, *After Black Rock: New Tests of Patentability—The Old Tests of Invention*, 39 GEO. WASH. L. REV. 123, 125 (1970); an expression of "the first overtones of a constitutional requirement," Note, *The 1966 Patent Cases: Creation of a Constitutional Standard*, 54 GEO. L. J. 1320, 1334 (1966); and an unequivocal declaration of a constitutional limitation equivalent to modern nonobviousness, *Irons & Sears, The Constitutional Standard of Invention—The Touchstone for Patent Reform*, 1973 UTAH L. REV. 653, 656. Even if it is assumed that *Thompson* or *Hollister* suggests the existence of a constitutional minimum standard, it must be remembered that the first mention of such a constitutional requirement appeared 95 years after enactment of the first patent act. Neither case suggests an earlier historical basis for such a constitutional limitation.

101. 42 U.S. (1 How.) 202 (1843). In *McClurg*, the defendants argued unsuccessfully that retroactive changes in the patent law that deprived them of licensing rights violated the constitutional prohibition against *ex post facto* laws.

102. *Id.* at 206. *See also* *United States v. Duell*, 172 U.S. 576 (1899):

Since, under the Constitution, Congress has power "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries," and to make all laws which shall be necessary and proper for carrying that expressed power into execution, it follows that Congress may provide such instrumentalities in respect of securing to inventors the exclusive right to their discoveries as in its judgment will be

In the course of development of United States patent law both before and after *Hotchkiss*,¹⁰³ the courts deferred to the plenary power of Congress under the intellectual property clause in a number of contexts. The absence of any early conception that the intellectual property clause establishes an implicit limitation on legislative power is most clearly demonstrated by comparing the constitutional challenges that were actually raised, litigated, and adjudicated in the "patent extension" and "non-use" cases.

B. The Patent Extension Cases

Long after the establishment of the general patent law that provided a uniform duration of exclusive rights,¹⁰⁴ Congress occasionally enacted private laws that extended the patent term in individual cases.¹⁰⁵ These enactments often protected the rights of licensees under the original patents,¹⁰⁶ but commonly denied intervening use rights to persons who had made use of the patents after the expiration of exclusive rights but before revival of such rights by special legislation.¹⁰⁷ Despite the pleas of defendants that the inventions were dedicated to the public at the expiration of the original patent terms, and that the expensive machinery installed on this expectation was unlawfully appropriated by the special acts extending patent rights,¹⁰⁸ the courts remained steadfast in obeying

best calculated to effect that object.

Id. at 583.

103. 52 U.S. (11 How.) 248. See *supra* note 53 and accompanying text.

104. Act of April 10, 1790, ch. 7, § 1, 1 Stat. 109, 110 (1845).

105. See, e.g., *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454 (1818); *Blanchard v. Sprague*, 3 F. Cas. 648 (C.C.D. Mass. 1839) (No. 1,518); *Bloomer v. Stolley*, 3 F. Cas. 729 (C.C.D. Ohio 1850) (No. 1,559). The tradition has not been exhausted. See, e.g., The Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, Title IX, Subtitle C, § 9201, 102 Stat. 1569-70 (extending the term of U.S. Patent 3,674,836 for three years and six months from the date of its expiration).

106. See *Evans v. Jordan*, 13 U.S. (9 Cranch) 199, 200 (1815); cf. *Wilson v. Rousseau*, 45 U.S. (4 How.) 646 (1846) (extension under statute, rather than private act, construed to extend license). But see *Bloomer v. Stolley*, 3 F. Cas. 729 (C.C.D. Ohio 1850) (No. 1,559).

107. Certainly the most famous of these cases is *Evans v. Jordan*, 13 U.S. (9 Cranch) 199 (1815), in which the defendants constructed infringing machinery after the expiration of the original *Evans* patent, but before the passage of a bill for Mr. *Evans*' relief. The private bill authorized the Secretary of State to issue a new patent securing exclusive rights for an additional fourteen years, with the provision that "no person who shall have used the said improvements, or have erected the same for use, before the issuing of the said patent, shall be liable to damages therefor." *Id.* at 200. The Supreme Court construed this provision to require immunity only for use in that period prior to the issuance of the new patent, but not for any use after the issuance of the new patent.

108. See, e.g., *id.* at 203; *Bloomer v. Stolley*, 3 F. Cas. 729 (C.C.D. Ohio 1850) (No. 1,559); cf. *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 230 (1832) (similar objection to broadened reissue patent).

the will of the legislature.

In the patent extension cases, the Constitution was often invoked by defendants as limiting congressional power to provide such enlargements of private "monopoly" in derogation of public rights, and the judiciary uniformly responded by denying the existence of any such constitutional limit. In *Evans v. Jordan*,¹⁰⁹ for example, Justice Marshall dismissed the argument that it would be unjust to deny defendants the use of machinery that they had erected after the expiration of Evans' first patent, observing that the Constitution grants to Congress, "without revision, the power of deciding on the justice as well as wisdom of measures relative to subjects on which they have the constitutional power to act."¹¹⁰ Similarly, in *Blanchard v. Sprague*,¹¹¹ Justice Story rejected a constitutional attack on the retrospective grant of a patent for an invention that was in public use with an assertion of general congressional power under the intellectual property clause:

For myself, I never have entertained any doubt of the constitutional authority of congress to make such a grant. The power is general, to grant to inventors; and it rests in the sound discretion of congress to say, when and for what length of time and under what circumstances the patent for an invention shall be granted. There is no restriction, which limits the power of congress to enact, where the invention has not been known or used by the public. All that is required is, that the patentee should be the inventor.¹¹²

In response to a number of constitutional objections in *Bloomer v. Stolley*,¹¹³ Justice MacLean also concluded that "[t.]o constitutional

109. 8 F. Cas. 872 (C.C.D. Vir. 1813) (No. 4,564), *aff'd*, 13 U.S. (9 Cranch) 199 (1815). See *supra* note 107.

110. *Id.* at 873. In unanimously affirming this judgment, the Supreme Court adopted its rationale, stating that "the legislature have not thought proper to extend the protection of these provisoes beyond the issuing of the patent under that law, and this Court would transgress the limits of judicial power by an attempt to supply, by construction, this supposed omission of the legislature." *Evans v. Jordan*, 13 U.S. (9 Cranch) 199, 203 (1815).

111. 3 F. Cas. 648 (C.C.D. Mass. 1839) (No. 1,518).

112. *Id.* at 650 (citing *Evans v. Eaton*, 20 U.S. (7 Wheat.) 356 (1822)); *Evans v. Hettich*, 20 U.S. (7 Wheat.) 453 (1822). See 3 J. STORY, COMMENTARIES ON THE CONSTITUTION OF THE UNITED STATES 1148, at 1149 (1st ed. 1833).

113. 3 F. Cas. 729 (C.C.D. Ohio 1850) (No. 1,559). Defendants asserted, *inter alia*, that the enactment of a special second extension violated the requirement of the intellectual property clause that the time be limited, *id.* at 730; that the 1836 act had exhausted congressional powers, *id.*; that a general provision applicable to all cases was the only constitutional method of making a grant of exclusive rights, *id.*; that Congress failed to consider the expenses and labor of defendants in providing for the extension, *id.* at 731; and that defendants could not constitutionally be deprived of previously acquired license rights. *Id.*

restriction appears to exist against the exercise of this power by congress."¹¹⁴ The patent extension cases thus underscore the early judicial conviction that the intellectual property clause grants plenary power to Congress in patent matters, rather than sets limits to the exercise of that power.

Judicial deference to the plenary congressional power to fix the prerequisites for patentability also was considered to be required by the Constitution. As Justice Baldwin explained in *Whitney v. Emmett*:¹¹⁵

It is the exclusive province of the legislature to discriminate between what acts are to be done to authorize a patent to issue, and those which will make it void if done or omitted. When this has been done in clear, explicit terms, a court cannot superadd requisites to the grant of the patent, or include other acts than those specified, which authorize them to declare it void. . . . [I]f a court, by construction, adds an object not so declared . . . it is judicial legislation of the most odious kind, necessarily retrospective, and substantially and practically *ex post facto*.¹¹⁶

While it might have seemed natural to the Supreme Court in *Graham* to conclude that entrusting the courts with the determination of patent validity necessarily provided them with a license to legislate new requirements as they saw fit,¹¹⁷ this notion was never seriously entertained by the early justices.¹¹⁸ As one commentator has pointed out, an anti-interpretive tradition prevailed in 1787, under which cosmopolitan Americans, such as Jefferson,¹¹⁹ "condemned judicial interpretation of statutes as a violation of the separation of governmental powers many

114. *Id.* at 730.

115. 29 F. Cas. 1074 (C.C.E.D. Penn. 1831) (No. 17,585).

116. *Id.* at 1080.

117. "Apparently Congress agreed with Jefferson and the board that the courts should develop additional conditions for patentability." *Graham*, 383 U.S. at 10.

118. See *Evans v. Jordan*, 8 F. Cas. 872, 874 (C.C.D. Vir. 1813) (No. 4,564) (Marshall, C.J.), *aff'd*, 13 U.S. (9 Cranch) 199 (1815) ("There may be powerful reasons with the legislature for guarding a renewed patent, by restrictions and regulations, not to be imposed on original patents, but these reasons address themselves to the legislature only. If they have been overlooked or disregarded in the hall of congress, it is not for this court to set them up."); *Whittemore v. Cutter*, 29 F. Cas. 1120, 1122 (C.C.D. Mass. 1813) (No. 17,600) (despite doubt as to the wisdom of congressional action changing common law of patents, courts "must administer the law as we find it").

119. Compare Jefferson's view that "[o]ur peculiar security is in the possession of a written Constitution. Let us not make it a blank paper by construction." Letter to Wilson Nicholas (Sept. 7, 1803), in *THE POLITICAL WRITINGS OF THOMAS JEFFERSON* 144 (E. Dumbauld ed. 1955).

believed necessary to a rational and free polity."¹²⁰ The contrary conclusion in *Graham* reveals another serious error in the Court's historical assumptions regarding the original intent behind the patent clause—that the framers expected the power vested in Congress to draft patent laws to be shared by, or delegated to, the judiciary.

C. The Patent Non-Use Cases

In the non-use cases, the Supreme Court reaffirmed the plenary power of the legislative branch in patent matters.¹²¹ *Continental Paper Bag Co. v. Eastern Paper Bag Co.*¹²² was the Court's first opportunity to consider a direct constitutional argument that the intellectual property clause implies a limit on congressional power to prescribe the extent of the exclusive rights secured by the patent grant. The defendants conceded patent validity¹²³ but urged that the non-use of the patented invention should prevent the issuance of an injunction against infringement. The defendants specifically argued that the non-use of an invention does not "promote the progress . . . of the useful arts" as required by the intellectual property clause.¹²⁴

Eliminating the possibility that Congress had overlooked the subject of non-use in providing exclusive patent rights, the Court assumed that Congress had deliberately permitted non-use¹²⁵ in establishing a "complete monopoly" under the patent statutes.¹²⁶ Turning to the question of whether such a complete monopoly, including the right to suppress a useful invention for seventeen years, was at variance with the constitutional purpose, the Court deferred to congressional judgment and declined to conduct an independent evaluation of whether the provision promoted the progress of the useful arts. Instead, the Court concluded, "[w]e may assume that experience has demonstrated its wisdom and beneficial effect upon the arts and sciences."¹²⁷

Whatever the wisdom of granting a patentee the exclusive rights to an

120. Powell, *The Original Understanding of Original Intent*, 98 HARV. L. REV. 885, 892-93 (1985). Powell concludes that in the sixty years following 1800, "[s]tatutory interpretation became even more frankly literalistic." *Id.* at 900.

121. These cases considered the constitutional power to secure exclusive rights in an invention without requiring its commercial exploitation.

122. 210 U.S. 405 (1908).

123. *Id.* at 413.

124. *Id.* at 422-23.

125. *Id.* at 429-30.

126. *Id.* at 423-24.

127. *Id.* at 429-30. The Court declined to disturb the congressional grant of a complete monopoly with the explanation that "[t]he patent law is the execution of a policy having its first expression in the Constitution, and it may be supposed that all that was deemed necessary to accomplish and safeguard it must have been studied and provided for." *Id.* at 423.

invention that is suppressed for economic advantage, *Continental Paper Bag* indicates that the conception of the constitutional limitation in article I, section 8 requiring independent judicial determination of whether the patent policy selected by Congress "promotes the progress . . . of useful arts," is of late provenance. Indeed, even after the appearance of the constitutional limitation theory in the era when the Court's "passion . . . for striking patents down" burned brightest,¹²⁸ the Supreme Court continued to follow *Continental Paper Bag*. In *Special Equipment Co. v. Coe*,¹²⁹ the Court rejected the theory that non-use of a patented invention would be contrary to the constitutional purpose expressed in the intellectual property clause.¹³⁰ Adhering to *Continental Paper Bag*, the Court emphasized congressional awareness that exclusive patent rights included non-use and stated, "[i]t by no means follows that such a grant is an inconsistent or inappropriate exercise of the constitutional authority of Congress 'to promote the Progress of Science and useful Arts.'"¹³¹ Once again, the Court declined to interpose its own evaluation of the effect of the statutory provision in fulfilling the stated constitutional purpose, instead deferring to congressional judgment under a standard which requires only a minimal rational relation between the constitutional purpose and the means selected by Congress.¹³² The majority clearly rejected the dissent's argument, written by Justice Douglas, that the rule of *Continental Paper Bag* violates a positive constitutional limitation found in the intellectual property clause.¹³³

The non-use cases are among the very few opinions that actually consider questions of constitutional limitations derived from the statement of

128. The quoted phrase is Justice Jackson's often-cited characterization of the moving spirit of the Supreme Court in patent cases during the 1940's, expressed in his dissenting opinion in *Jungerson v. Ostby & Barton Co.*, 335 U.S. 560, 572 (1949).

129. 324 U.S. 370 (1945).

130. *Id.* at 377. The Circuit Court for the District of Columbia had declined to order the Patent Office to allow claims to a subcombination, based upon the court's assumption that the goal of the applicant was to suppress the subcombination's noninfringing use in a complete machine. The circuit court indicated that the issuance of such a "blocking" patent to protect the entire machine would be contrary to the constitutional purpose and to the spirit, if not the letter, of the patent laws. *Id.* The circuit court opinion is reported at 144 F.2d 497 (D.C. Cir. 1944).

131. 324 U.S. at 378.

132. Applying a minimum rationality test, the Court considered that Congress had acted with the awareness that unpatented inventions could be suppressed, and that the disclosure of patented inventions itself could fulfill the constitutional purpose. The Court determined that Congress "could have concluded that the useful arts would be best promoted by compliance with the conditions of the statutes which it did enact. . . ." *Id.* (emphasis added).

133. *Id.* at 380, 381 (Douglas, J., dissenting, joined by Justices Black and Murphy). Arguing that the non-use of patents led to multiplication of patents "to protect an economic barony or empire, not to put new discoveries to use for the common good," the dissent concluded that non-use was irreconcilable with the purpose of the Constitution "to promote the progress of science and useful arts." *Id.* at 382-83.

purpose in the intellectual property clause. They indicate that, as late as 1945, the patent clause was regarded either as imposing no implied limitation on the exercise of congressional power to define patent rights, or as allocating to the legislative branch the constitutional responsibility for the determination of the policy that would effectively promote the progress of the useful arts. Under the latter view, judicial review of the congressional determination is limited to consideration of whether the legislature "could have concluded" that its policy would best promote the useful arts.¹³⁴

D. Early "Abhorrence of Monopoly"

The further historical postulate in *Graham*, that a restrictive interpretation of the patent power is mandated by an "abhorrence of monopoly" common to Jefferson and "other Americans,"¹³⁵ similarly fails upon closer examination. A limitation on the intellectual property power cannot be derived from an early history of general antimonopolist sentiment, in view of the noteworthy absence of judicial hostility to "monopoly" rights granted by patents.¹³⁶ Contrasting the earlier English view "that patent-rights were in the nature of monopolies, and, therefore, were to be narrowly watched, and construed with a rigid adherence to their terms, as being in derogation of the general rights of the community," Justice Story explained that the constitutional purpose of patents had always imposed a more liberal view in American law, where patents are "granted not as restrictions upon the rights of the community, but are granted 'to promote science and the useful arts.'"¹³⁷ This view was elaborated in unmistakable terms in *Ames v. Howard*:¹³⁸

Patents for inventions are not to be treated as mere monopolies odious in the eyes of the law, and therefore not to be favored; nor are they to be construed with the utmost rigor, as *strictissimi juris*. The constitution of the United States, in

134. *Id.* at 386.

135. *Graham*, 383 U.S. at 7.

136. See, e.g., *Blanchard v. Sprague*, 3 F. Cas. 648, 649-50 (C.C.D. Mass. 1839) (No. 1,518); *Davoll v. Brown*, 7 F. Cas. 197 (C.C.D. Mass. 1845) (No. 3,662) (Woodbury, J.); *Bloomer v. Stolley*, 3 F. Cas. 729, 731 (C.C.D. Ohio 1850) (No. 1,559) (MacLean, J.); *Seymour v. Osborne*, 78 U.S. (11 Wall.) 516, 533 (1870). The judicial antipathy to patents as monopolistic does not appear to have become well established until the era of *Atlantic Works v. Brady*, 107 U.S. 192 (1882), although occasionally references to patents as "monopolies" appeared in earlier opinions. See *Hogg v. Emerson*, 52 U.S. 587, 609 (1850) (Catron, J., dissenting).

137. *Blanchard*, 3 F. Cas. at 649-50.

138. 1 F. Cas. 755 (C.C.D. Mass. 1833) (No. 326).

giving authority to congress to grant such patents for a limited period, declares the object to be to promote the progress of science and the useful arts, an object as truly national, and meritorious, and well founded in public policy, as any which can possibly be within the scope of national protection. Hence it has always been the course of the American courts . . . to construe these patents fairly and liberally and not to subject them to any over-nice and critical refinements.¹³⁹

Apart from the express reiteration that patents are not to be regarded as odious monopolies, perhaps the most interesting aspect of this statement is its movement from the premise of the constitutional purpose of patents to the conclusion that the property right is therefore to be protected.¹⁴⁰ Whether or not the Constitution requires a liberal construction of patents, it is clear that no less an authority than Justice Story¹⁴¹ was able to conclude confidently that the intellectual property clause expressed no policy against "monopoly" rights or limits on the patent power.¹⁴²

Contrary to the evident opinion of Justices Douglas and Black,¹⁴³ the intellectual property clause did not enact Jefferson's proposed amendment against monopolies¹⁴⁴ in disguised form. History provides no support for the conclusion that antimonopolist sentiment influenced the original interpretation of the intellectual property clause, or that considerations of public policy were regarded as imposing a limitation in the grant of the patent power. To the contrary, the intellectual property clause's statement of purpose was often cited by early courts as evidence of constitutional solicitude for the quasi-natural property rights of inventors in the fruits of their mental labors. The judiciary expressed a

139. *Id.* at 756.

140. Compare *Blanchard*, 3 F. Cas. at 650, where Justice Story indicated that a liberal construction of patents is "a natural, if not a necessary result, from the very language and intent of the power given to congress by the Constitution on this subject."

141. Not only was Justice Story a preeminent authority in early patent law, but as the author of the COMMENTARIES ON THE CONSTITUTION OF THE UNITED STATES (1st ed. 1833), his opinions on the presence or absence of constitutional requirements must be entitled to significant weight. Justice Story displayed no disinclination to refer to the constitutional purpose in construing the patent statutes when necessary, as in his landmark opinion, *Pennock v. Dialogue*, 27 U.S. (2 Pet.) 1 (1829). In attempting to sift constitutional purposes from cases decided under the early statutes, however, it is particularly important to keep in mind the differences then carefully heeded between constitutional requirements and statutory limitations. See, e.g., *Blanchard*, 3 F. Cas. 648 (patent statute requires that invention not be in public use or on sale before application for patent, but Constitution requires only that patentee should be inventor).

142. See *supra* notes 138-41 and accompanying text.

143. See *A & P*, 340 U.S. at 154. See *supra* notes 47-51 and accompanying text.

144. See *supra* notes 61-62 and accompanying text.

uniformly benign view of patents as "a just reward to ingenious men"¹⁴⁵ and an enlightened legal recognition of the "inchoate and indefeasible property in the thing discovered."¹⁴⁶

In agreement with Chief Justice Marshall's conclusion that patents fulfilled, rather than injured the "great fundamental principles of right, and of property,"¹⁴⁷ the Supreme Court confirmed the inherent and absolute¹⁴⁸ right of the inventor to enjoy the fruits of his mental labor. Within this framework of great first principles, including "the sacred rights of property,"¹⁴⁹ the purpose of the Constitution to promote the progress of the useful arts was not served by preventing encroachment by private interests on the public domain, but rather by protecting and rewarding inventors' property rights — "some of the dearest and most valuable rights which society acknowledges, and the constitution itself means to favor."¹⁵⁰ As late as 1831, Justice Baldwin maintained that the *sole* intention of American patent law was to "promote the progress of the useful arts by the benefits granted to inventors; not by those accruing to the public, after the patent had expired, as in England."¹⁵¹ This extreme view was supplanted by the conception of patents as contracts benefiting both the patentee and the public,¹⁵² but the view demonstrates

145. *Blanchard*, 3 F. Cas. at 650; *see also* *Lowell v. Lewis*, 15 F. Cas. 1018, 1020 (C.C.D. Mass. 1817) (No. 8,568) (patent conferred "as an encouragement and reward for . . . ingenuity, and for the expense and labor attending the invention"); *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 241-42 (1832) (patent "is the reward stipulated for the advantages derived by the public for the exertions of the individual, and is intended as a stimulus to those exertions"); *Bloomer v. Stolley*, 3 F. Cas. 729, 731 (C.C.D. Ohio 1850) (No. 1,559) ("The expressed policy of the law is to compensate the inventor, not only for his expense, but for his labor and ingenuity. . .").

146. *Evans v. Jordan*, 8 F. Cas. 872, 873 (C.C.D. Vir. 1813) (No. 4,564) (Marshall, C.J.), *aff'd*, 13 U.S. (9 Cranch) 199 (1815).

147. *Id.*

148. As Justice Story explained for the Court in *Ex parte Wood*, 22 U.S. (9 Wheat.) 603 (1824):

The securing to inventors of an exclusive right to their inventions, was deemed of so much importance, as a means of promoting the progress of science and the useful arts, that the constitution has expressly delegated to Congress the power to secure such rights to them for a limited period. The inventor has, during this period, a property in his inventions; a property which is often of very great value, and of which the law intended to give him the absolute enjoyment and possession.

Id. at 608.

149. *Evans v. Jordan*, 8 F. Cas. 872, 873 (C.C.D. Vir. 1813) (No. 4,564), *aff'd*, 13 U.S. (9 Cranch) 199 (1815); *see also*, *Allen v. Blunt*, 1 F. Cas. 450, 460 (C.C.D. Mass. 1846) (No. 217) (patent rights "sacredly recognized both by the laws and the constitution").

150. *Ex parte Wood*, 22 U.S. at 608.

151. *Whitney v. Emmett*, 29 F. Cas. 1074, 1082 (C.C.E.D. Penn. 1831) (No. 17,585).

152. As early as *Lowell v. Lewis*, 15 F. Cas. 1018, 1020 (C.C.D. Mass. 1817) (No. 8,568), Justice Story had expressed the view that in the absence of the statutory requirement of a sufficient explanation of the invention to enable a person skilled in the art to construct

the extent to which the early judiciary concluded that to defend private property in patent rights *was* to promote the progress of useful arts in the constitutional sense.

There is no historical basis for the existence of an implicit constitutional limitation in the intellectual property clause.¹⁵³ The unprecedented legal conclusion in *Graham* that the intellectual property clause "is both a grant of power and a limitation"¹⁵⁴ rests solely upon a judicial revision of the early history of patent law that is irreconcilable with its actual course. The history of the intellectual property clause in the courts of the United States shows that its statement of purpose was never conceived in the early years of the Republic, or indeed at any time before *A & P*,¹⁵⁵ as imposing any limitation on the power of Congress to declare the terms and conditions for granting patents. The history of the statutory standard provides further proof that the doctrine fashioned in *Graham* was neither recognized nor envisioned by the framers and cannot be regarded as a constitutional requirement of United States patent law.

IV

The History of the Statutory Standard

The first patent act of the United States was passed in 1790 ("1790 Act" or "1790 Patent Act").¹⁵⁶ It was replaced by a second act in 1793

the patented invention, the advantage to the public contemplated by the act would be lost. *Cf. Whittemore v. Cutter*, 29 F. Cas. 1120, 1121-22 (C.C.D. Mass. 1813) (No. 17,600) (recognizing the policy in English law, but declining to read a written description defense into section 6 of the 1793 Act). In *Pennock v. Dialogue*, 27 U.S. (2 Pet.) 1, 19 (1829), Justice Story described the object of giving the public at large a right to make, use and vend the thing invented at the earliest possible time as of at least equal importance with the object of rewarding the efforts of inventors, thus establishing public use as a permanent consideration in patent policy debate.

153. In the history of the intellectual property clause prior to *Graham*, the Supreme Court had recognized only three constitutional limitations: the express requirement that the exclusive right to writings and discoveries be granted only "for limited times," see *Pennock v. Dialogue*, 27 U.S. (2 Pet.) 1, 16-17 (1829); the restriction implied from the powers retained by the states in the federal system that the right to sell, granted under the patent laws, must be subject to reasonable police power regulations of the states, see *Patterson v. Kentucky*, 97 U.S. 501 (1878), *cf. Webber v. Virginia*, 103 U.S. 344 (1880); and the limitation of patent rights to domestic application, see *Brown v. Duchesne*, 60 U.S. (19 How.) 183, 195 (1856).

154. *Graham*, 383 U.S. at 5.

155. 340 U.S. 147 (1950). See *supra* notes 47-52 and accompanying text.

156. Act of Apr. 10, 1790, ch. 7, 1 Stat. 109 (1845) [hereinafter 1790 Patent Act].

157. Act of Feb. 21, 1793, ch. 11, 1 Stat. 318 [hereinafter 1793 Patent Act].

("1793 Act" or "1793 Patent Act"),¹⁵⁷ which, although amended,¹⁵⁸ provided the statutory basis until the comprehensive revision of 1836 ("1836 Act" or "1836 Patent Act").¹⁵⁹ The original act provided for the issuance of a patent to "any person . . . [who] hath . . . invented or discovered any useful art, manufacture, engine, machine, or device, or any improvement therein not before known or used. . . ."¹⁶⁰ Examination was required by a board consisting of the Secretary of State, the Secretary for the Department of War, and the Attorney General, and a patent was to be issued if any two of them "shall deem the invention or discovery sufficiently useful and important."¹⁶¹ This provision of the statute granted the three administrators of the patent system a measure of discretion in determining whether to issue a patent for an invention or discovery meeting the requirements of novelty and utility. The provision also furnished the basis for the "general rules" described by Jefferson as applied under the 1790 Act:

One of these was, that a machine of which we were possessed, might be applied by every man to any use of which it is susceptible, and that this right ought not to be taken from him and given to a monopolist, because the first perhaps had occasion so to apply it. Thus a screw for crushing plaster might be employed for crushing corn-cobs. And a chain-pump for raising water might be used for raising wheat: this being merely a change of application. Another rule was that a change of material should not give title to a patent: As the making a ploughshare of cast rather than of wrought iron; a comb of iron instead of horn or of ivory, or the connecting buckets by a band of leather rather than of hemp or iron. A third was that a mere change of form should give no right to a

158. The 1793 Patent Act was subsequently amended by: the Act of June 7, 1794, ch. 58, 1 Stat. 393 (1845); Act of Apr. 17, 1800, ch. 25, 2 Stat. 37 (1845); Act of Feb. 15, 1819, ch. 19, 3 Stat. 481 (1846); Act of July 3, 1832, ch. 162, 4 Stat. 559 (1846); and Act of July 13, 1832, ch. 203, 4 Stat. 577 (1846); none of these Acts altered the statutory standard of patentability.

159. Act of July 4, 1836, ch. 357, 5 Stat. 117 (1856) [hereinafter 1836 Patent Act]. The 1836 Patent Act was supplanted by the Act of July 8, 1870, ch. 230, 16 Stat. 198 (1871). A comprehensive discussion of the requirements and operation of the early patent acts is beyond the scope of the present Article, which is limited to a brief indication of the pertinent patentability standards of novelty and utility. For a more thorough description of the early patent acts, see Federico, *The First Patent Act*, 14 J. PAT. OFF. SOC'Y 237 (1932); Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237 (1936); Seidel, *The Constitution and a Standard of Patentability*, 48 J. PAT. OFF. SOC'Y 5, 23-30 (1966); and Wyman, *The Patent Act of 1836*, 1 J. PAT. OFF. SOC'Y 203 (1919).

160. 1790 Patent Act, § 1.

161. *Id.*

patent, as a high-quartered shoe instead of a low one; a round hat instead of a three-square; or a square bucket instead of a round one. But for this rule, all the changes of fashion in dress would have been under the tax of patentees.¹⁶²

Jefferson also later expressed the opinion that a combination of known implements should not be patentable:

[I]f we have a right to use three things separately, I see nothing in reason, or in the patent law, which forbids our using them all together. A man has a right to use a saw, an axe, a plane separately; may he not combine their uses on the same piece of wood?¹⁶³

These subsidiary requirements implementing the statutory standard of patentability are discussed more fully below as new use,¹⁶⁴ change of material,¹⁶⁵ change of form¹⁶⁶ and combination of known elements.¹⁶⁷ Federico has questioned whether these rules were actually applied by the board, or were the product of hindsight, noting significant discrepancies between the practices of the board and Jefferson's recollections some twenty years later.¹⁶⁸ For example, while Jefferson later objected both to new use patents and to claims for combinations of known elements, the Board evidently failed to apply either rule in granting the famous Oliver Evans patent for improvements in the manufacture of flour, the third of only three patents issued in 1790.¹⁶⁹

Because of the impracticability of requiring three Cabinet officers to

162. Letter to Isaac McPherson (Aug. 13, 1813), in VI WRITINGS OF THOMAS JEFFERSON 181-82 (Washington ed. 1814).

163. Letter to Oliver Evans (Jan. 16, 1814), in VI WRITINGS OF THOMAS JEFFERSON 298 (Washington ed. 1814).

164. See *infra* notes 246-61 and accompanying text.

165. See *infra* notes 262-70 and accompanying text.

166. See *infra* notes 232-45 and accompanying text.

167. See *infra* note 231.

168. See Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237, 244 n.15 (1936).

169. See Fouts, *Jefferson the Inventor, and his Relation to the Patent System*, 4 J. PAT. OFF. SOC'Y 316, 324-26 (1922). The Evans improvements included the use of a string of buckets as an elevator for conveying flour, a device which had been used for thousands of years in conveying water and, which in Jefferson's later opinion, should not have been patentable under the new use rule. See Letter to Isaac McPherson, *supra* note 162, at 176-77. 182. The specification of the Evans patent as reissued in 1808 is reprinted in *Evans v. Eaton*, 20 U.S. (7 Wheat.) 356 (1822); the reissue claimed the same improvements as the original patent. *Evans v. Robinson*, 8 F. Cas. 886, 888 (C.C.D. Md. 1813) (No. 4,571).

examine each application.¹⁷⁰ the examination requirement was eliminated in the 1793 Patent Act, which instead expanded the list of enumerated defenses to validity that could be raised by a defendant in an infringement action.¹⁷¹ The revised Act abandoned the original requirement that an invention be "sufficiently useful and important," but established the statutory limitation that "simply changing the form or the proportions of any machine, or composition of matter, in any degree, shall not be deemed a discovery."¹⁷² Apart from redefining the categories of patentable subject matter, the 1793 Act retained the general standards of novelty and utility from its predecessor.¹⁷³ After the unsatisfactory experiment of deferring validity questions to judicial determination in the infringement context,¹⁷⁴ the 1836 Act created the Patent

170. Jefferson indicate' that because of an "abundance" of applications and the requirement of examination, which required "more time of the members of the board than they could spare from higher duties, the whole was turned over to the judiciary, to be matured into a system, under which every one might know when his actions were safe and lawful." Letter to Isaac McPherson, *supra* note 162, at 182.

171. Section 6 of the 1793 Patent Act provided that the defendant in an infringement action

shall be permitted to plead the general issue, and give this act and any special matter, of which notice in writing may have been given to the plaintiff or his attorney, thirty days before trial, in evidence, tending to prove, that the specification, filed by the plaintiff, does not contain the whole truth relative to his discovery, or that it contains more than is necessary to produce the described effect, which concealment or addition shall fully appear to have been made, for the purpose of deceiving the public, or that the thing, thus secured by patent, was not originally discovered by the patentee, but had been in use, or had been described in some public work anterior to the supposed discovery of the patentee, or that he had surreptitiously obtained a patent for the discovery of another person: in either of which cases, judgment shall be rendered for the defendant, with costs, and the patent shall be declared void.

1793 Patent Act, *supra* note 157, § 6.

172. *Id.* § 2.

173. Section 1 of the 1793 Act provided for the issuance of a patent to a United States citizen upon allegation that he had "invented any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement on any art, machine, manufacture or composition of matter, not known or used before the application. . . ." *Id.* § 1. While the express term "new" was added to the statute by this amendment, it did not modify the statutory standard, since novelty had also been a condition of patentability under the earlier requirement that an invention be "not before known or used." *See generally*, *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454, app. at 24 (1818) (patent right may be defeated upon proof of prior invention put into actual use, "for then the invention cannot be considered as new") (emphasis in original); *Earle v. Sawyer*, 8 F. Cas. 254 (C.C.D. Mass. 1825) (No. 4,247).

174. *See generally* Wyman, *The Patent Act of 1836*, 1 J. PAT. OFF. SOC'Y 203 (1919); Seidel, *The Constitution and a Standard of Patentability*, 48 J. PAT. OFF. SOC'Y 5, 28-30 (1966).

Office¹⁷⁵ and reinstated the examination requirement.¹⁷⁶ However, the basic novelty and utility standards of the earlier acts were maintained without significant modification,¹⁷⁷ except for eliminating the prohibition against simply changing the form or proportions of a machine or composition of matter.¹⁷⁸ Thus, while the early statutes imposed the basic requirements of novelty and utility, they did not expressly require an evaluation, beyond novelty, of the differences between the invention and the prior art, except in the special instance of a simple change in "form or proportions." It is against this statutory background that the early case law must be examined to determine the extent to which additional requirements relating to differences beyond novelty and utility were judicially developed by statutory construction.

A. *Judicial Construction of the Statutory Standards*

Under the 1793 Patent Act, Congress abandoned any requirement of substantive examination to determine whether a claimed invention or discovery satisfied the standards of novelty and utility, leaving this issue to be determined by the judiciary when specially pleaded as a defense to infringement under section 6 of the Act.¹⁷⁹ In this statutory scheme, the Secretary of State acted as a purely ministerial official, required to issue

175. 1836 Patent Act, *supra* note 159, § 1.

176. *Id.* § 7.

177. Section 6 of the 1836 Patent Act provided that upon satisfaction of formal requirements, a patent may be granted to "any person or persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in public use or on sale." 1836 Patent Act, *supra* note 159, § 6.

178. Section 7 of the 1836 Patent Act provided that in the absence of anticipatory prior art, including prior public use or sale, the Commissioner had the duty to issue a patent if the application were deemed "to be sufficiently useful and important," thus reinstating the language of the 1790 Act. 1836 Patent Act, *supra* note 159, § 7. Evidently the provision was never of much importance; although it survived until the 1952 revision, Federico indicates that "[t]he meaning of this old phrase was obscure and it has seldom been resorted to either in the Patent Office or in the Courts." FEDERICO, COMMENTARY ON THE NEW PATENT ACT, 35 U.S.C.A. § 1, 36 (1954). Former Judge Rich explained that the phrase was finally deleted in the 1952 revision "because of the possibility that, although disused and moribund, it might be construed as imposing some limitation on the statutory requirements of patentability over and above the requirements of sections 101, 102 and 103." Rich, *Principles of Patentability*, 28 GEO. WASH. L. REV. 393, 398 (1960).

179. By its express terms, section 6 did not provide for the defense of lack of utility. See *supra* note 171. However, it was established early that the list of enumerated defenses of this section was not intended to be exclusive, see *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454 (1818); *Grant v. Raymond*, 31 U.S. (6 Pet.) 218 (1832), and lack of utility and change of form or proportion defenses were regularly considered by the courts as defenses in infringement actions.

a patent for any application meeting the facial requirements of the statute, and unable to refuse issuance on the basis of a lack of novelty or utility.¹⁸⁰ Consequently, in the period from 1801 to 1836, the task of applying the statutory standards for validity was given to the nation-building Supreme Court of John Marshall and Joseph Story, which turned to its work with a will. Sitting both as the Supreme Court and on Circuit, the Justices issued over 150 reported patent opinions prior to Justice Story's retirement in 1845, while expressing regret that so few of their patent decisions had been published.¹⁸¹

Perhaps no better introduction to the early understanding of the statutory language can be found than the opinion of Justice Story in *Earle v. Sawyer*.¹⁸² *Earle* is one of the very few pre-Civil War decisions expressly considering whether the early patent acts imposed an additional requirement of a minimum difference beyond novelty between prior art and invention. The opinion not only provides the most authoritative early consideration of what later was to become the patentable invention standard, but also is significant because of Justice Story's views with respect to the existence of a constitutional standard.¹⁸³ The patent at issue related to an improvement in the plaintiff's own machinery for manufacturing shingles, previously patented as a "Shingle Mill." The former mill employed the combination of a perpendicular saw and the appropriate machinery to move it, including a carriage to move the block to be sawed. This provided alternate motion on a diagonal line so as to present first a thick and then a thin end to the saw.¹⁸⁴ The improvement patent claimed the substitution of a circular saw, with the appropriate machinery in the old machine, for the same purpose of sawing shingles. With the exception of this substitution, all the other parts of the old machine were unaltered.¹⁸⁵

At trial, it was proved that small circular saws had been used previously for the purpose of veneering and sawing picture frames. It was further testified that the machinery by which a circular saw could be substituted for the perpendicular saw in plaintiff's old machine "was so obvious to mechanics, that one of ordinary skill, upon the suggestion being made to him, could scarcely fail to apply it in the mode [sic] which

180. See *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 241 (1832). The difference in operation of the 1790 and 1793 Acts is described in Webster's argument. See *id.* at 228.

181. *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454, app. at 23 (1818).

182. 8 F. Cas. 254 (C.C.D. Mass. 1825) (No. 4,247).

183. See *supra* note 141 and accompanying text.

184. 8 F. Cas. at 254.

185. *Id.*

the plaintiff had applied his."¹⁸⁶ However, no evidence was presented to show that any person had ever applied a circular saw to plaintiff's old machine before his invention.¹⁸⁷

The jury found for the plaintiff, and defendants moved for a new trial, based on asserted error in the instructions to the jury.¹⁸⁸ Justice Story characterized the invention as the combination of the circular saw and the Shingle Mill, and the defense as resting not on proof that anyone had previously made the combination, but rather on the proposition that "the combination itself is so simple, that, although new, it deserves not the name of an invention."¹⁸⁹ The argument in favor of this doctrine was presented with remarkable insight:

It is not sufficient, that a thing is new and useful, to entitle the author of it to a patent. He must do more. He must find it out by mental labor and intellectual creation. If the result of accident, it must be what would not occur to all persons skilled in the art, who wished to produce the same result. There must be some addition to the common stock of knowledge, and not merely the first use of what was known before. The patent act gives a reward for the communication of that, which might be otherwise withholden. An invention is the finding out by some effort of the understanding. The mere putting of two things together, although never done before, is no invention.¹⁹⁰

Yet the eminent jurist, after considering this virtual catalogue of reasons

186. *Id.* at 255. This testimony was countered by "suggestions and proofs" of the difficulties encountered by plaintiff in making his own substitution. *Id.*

187. *Id.*

188. The instructions objected to, with Justice Story's additions, included the following:

3. That if the plaintiff were the first to take out the perpendicular saw from his original shingle mill, and put in a circular saw, (meaning, I presume, with the proper machinery), that if it be useful (meaning, I presume, new and useful), it is sufficient to entitle him to a patent:
4. That if the plaintiff were the first to apply or combine a circular saw with his original shingle mill for the purpose of making shingles, although the shingle mill were in common use, and the circular saw were in use, (meaning, I presume, separately, and not in combination), and there were nothing new in the mode or machinery, by which it was applied (but meaning, I presume, that the combination itself was new), still the plaintiff is entitled to a patent.

Id.

189. *Id.*

190. *Id.*

later advanced in support of the nonobviousness requirement.¹⁹¹ squarely rejected this "mode of reasoning upon the metaphysical nature, or the abstract definition of an invention" as inapplicable to cases under the 1793 Patent Act.¹⁹² He construed the first section of the Act¹⁹³ to require no more than novelty¹⁹⁴ and utility¹⁹⁵ as requisites for patentability, rejecting any additional requirement of "inventive" difference from the prior art with the explanation:

It is of no consequence, whether the thing be simple or complicated; whether it be by accident, or by long, laborious thought, or by an instantaneous flash of mind, that it is first done. The law looks to the fact, and not to the process by which it is accomplished. It gives the first inventor, or discoverer of the thing, the exclusive right, and asks nothing as to the mode or extent of the application of his genius to conceive or execute it.¹⁹⁶

Novelty is the proper first inquiry of the court in weighing patent validity,¹⁹⁷ he claimed, and if an improvement is new, is useful, and has not been known or used before, "it constitutes an invention within the

191. See, e.g., *Thompson v. Boisselier*, 114 U.S. 1, 11 (1885) ("[I]t is not enough that a thing shall be new, in the sense that in the shape or form in which it is produced it shall not have been before known, and that it shall be useful, but it must, under the Constitution and the statute, amount to an invention or discovery."); *Hollister v. Benedict & Burnham Mfg. Co.*, 113 U.S. 59, 73 (1885) (invention novel but not patentable since it is "in no sense the creative work of [the] inventive faculty"); *Pearce v. Mulford*, 102 U.S. 112, 118 (1880) (invention "must be the product of some exercise of the inventive faculties, and it must involve something more than what is obvious to persons skilled in the art to which it relates"); *Reckendorfer v. Faber*, 92 U.S. 347, 356 (1875) (patent law requires more than "juxtaposition of parts, or of the external arrangement of things, or of the order in which they are used, to give patentability"); *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966) ("[T]hings which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must 'promote the Progress of . . . useful Arts.'").

192. *Earle*, 8 F. Cas. at 255.

193. See *supra* note 173.

194. "It must be *new*, and not *known* or *used* before the application; that is, the party must have found out, created, or constructed some art, machine, &c. or improvement on some art, machine, &c. which had not been previously found out, created, or constructed by any other person." *Earle*, 8 F. Cas. at 256 (emphases in original).

195. "It must also be useful, that is, it must not be noxious or mischievous, but capable of being applied to good purposes; and perhaps it may also be a just interpretation of the law, that it meant to exclude things absolutely frivolous and foolish." *Id.*

196. *Id.*

197. *Id.*

very terms of the act, and in my judgment, within the very sense and intendment of the legislature."¹⁹⁸

With this pronouncement, nonobviousness lapsed into obscurity, seldom again being raised in reported cases until after *Hotchkiss*.¹⁹⁹ Justice Story's view that the patent statutes imposed no substantive patentability requirements beyond novelty and utility was accepted both by commentators and courts. Phillips expressly agreed:

The sufficiency of the invention depends not upon the labor, skill, study or expense applied or bestowed upon it, but upon its being diverse and distinguishable from what is familiar and well known, and also substantially and materially, not slightly and trivially so.²⁰⁰

This view was affirmed by Curtis, who maintained:

Our courts have, in truth, without always using the same terms, applied the same tests of the sufficiency of invention, which the English authorities exhibit, in determining whether alleged inventions of various kinds possess the necessary element of novelty. That is to say, in determining this question, the character of the result, and not the apparent amount of skill, ingenuity or thought exercised, has been examined; and if the result has been substantially different from what had

198. *Id.* Justice Story appears to have adhered to this view as long as he was on the bench. In *Lowell v. Lewis*, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8,568), he had affirmed the novelty of a pump on the basis that "the exact structure and position of a valve in a square pump, uniting the triangular and butterfly forms" had not previously been used in precisely the same manner, although both the butterfly valve "which approaches very near to it" and the triangular valve were well known. *Id.* at 1020. Later, in *Ryan v. Goodwin*, 21 F. Cas. 110 (C.C.D. Mass. 1839) (No. 12,186), involving a friction-match composition of matter patent, he instructed the jury on the question of novelty:

It is certainly not necessary, that every ingredient, or, indeed, that any one ingredient used by the patentee in his invention, should be new or unused before for the purpose of making matches. The true question is, whether the combination of materials by the patentee is substantially new. Each of these ingredients may have been in the most extensive and common use, and some of them may have been used for matches, or combined with other materials for other purposes. But if they have never been combined together in the manner stated in the patent, but the combination is new, then, I take it, the invention of the combination is patentable.

Id. at 111. See also, *Washburn v. Gould*, 29 F. Cas. 312 (C.C.D. Mass 1844) (No. 17,214), *Wyeth v. Stone*, 30 F. Cas. 723 (C.C.D. Mass. 1840) (No. 18,107).

199. *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248 (1851).

200. W. PHILLIPS, THE LAW OF PATENTS FOR INVENTIONS 127 (1837).

been effected before, the invention has been pronounced entitled to a patent; otherwise, the patent has failed.²⁰¹

Similarly, in *McCormick v. Seymour*,²⁰² in response to the argument that improvements in a reaping machine were “so simple and obvious, that the claim, even admitting it to have been new and not before in use, is not the subject of a patent,”²⁰³ Justice Nelson squarely denied the existence of any such patentability requirement:

Novelty and utility in the improvement seem to be all that the statute requires as a condition to the granting of a patent. If these are made out to the satisfaction of a jury, then the subject is patentable, and the inventor is entitled to the protection and benefit of the statute. Otherwise, he is not. That is, perhaps, the only general definition that can be given of the subject of a patent, and it is the only one that the law has given for our guide. The two questions, then, on this branch of the case, are—was this contrivance, as constructed by the patentee, new and not before known?—and, if so, is it useful? Both these questions being answered in the affirmative, the case comes directly within the definition of the statute.²⁰⁴

Nonobviousness was not again seriously considered as a separate statutory requirement for patent validity until the rise of the “patentable invention” standard after the Civil War.²⁰⁵ *Earle* is the only decision under the 1793 Act in which the obviousness of an invention in the modern sense was squarely argued as invalidating a patent. Justice Story’s opinion addresses this suggested defense in detail. Because this opinion provides the only explicit pre-*Hotchkiss* analysis of obviousness, any serious effort to determine the existence *vel non* of nonobviousness

201. G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 18 (1st ed. 1849). See also *id.* § 6, at 5: “It is often laid down, that provided the invention is substantially new, it is of no consequence whether a great or small amount of thought, ingenuity, skill, labor, or experiment has been expended, or whether it was discovered by mere accident.” Curtis adhered to this view even after *Hotchkiss*. See G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 41, at 30–31; § 46, at 34–35; § 47, at 36; and § 25, at 25 (4th ed. 1873).

202. 15 F. Cas. 1322 (C.C.N.D.N.Y. 1851) (No. 8,726), *rev’d on other grounds*, 57 U.S. (16 How.) 480 (1853).

203. *Id.* at 1323.

204. *Id.* See also *id.* at 1325; *Adams v. Edwards*, 1 F. Cas. 112, 113–14 (C.C.D. Mass. 1848) (No. 53); *Carr v. Rice*, 5 F. Cas. 140, 143 (C.C.S.D.N.Y. 1856) (No. 2,440).

205. See *infra* notes 283–303 and accompanying text.

as a separate requirement for patentability under the early acts must focus on his opinion.

B. The Substantial Novelty Standard

Apart from its discussion of the obviousness determination, *Earle* provides an introduction to the standards of novelty and utility applied under the 1793 Act. The utility requirement was construed at an early date to impose only minimal restraints on patentability,²⁰⁶ and only one early case invalidated a patent on this basis.²⁰⁷ The statutory novelty requirement was of much greater importance. To determine novelty, the first question to be asked is "whether the thing has been done before."²⁰⁸ More accurately, in the case of a machine, the proper inquiry is whether it has been "substantially constructed before" and in the case of an improvement, "whether that improvement has ever been applied to such a machine before, or whether it is substantially a new combination."²⁰⁹

This definition illustrates that novelty is a significantly narrower concept in modern patent law than under the first patent acts. Under the 1952 patent act, a claimed invention is not considered to be anticipated unless each element of the claim is described identically in a single prior

206. In accordance with the view expressed in *Earle* that the degree of utility required by the statute is minimal, 8 F. Cas. at 256. Justice Story had earlier limited the statutory requirement that an invention be "useful" in *Lowell v. Lewis*, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8,568). The defendant's argument that the utility standard required an advance over the prior art was rejected as "utterly without foundation" and the requirement was defined in terms of public morality rather than degree of operativeness:

All that the law requires is, that the invention should not be frivolous or injurious to the well-being, good policy, or sound morals of society. The word "useful," therefore, is incorporated into the act in contradistinction to mischievous or immoral. For instance, a new invention to poison people, or to promote debauchery, or to facilitate private assassination, is not a patentable invention. But if the invention steers wide of these objections, whether it be more or less useful is a circumstance very material to the interests of the patentee, but of no importance to the public. If it be not extensively useful, it will silently sink into contempt and disregard.

Id. This construction was widely adopted, and governed consideration of the utility standard during the period under discussion. See, e.g., the appendix to Justice Marshall's opinion in *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454, app. at 24 (1818); *Bedford v. Hunt*, 3 F. Cas. 37 (C.C.D. Mass. 1817) (No. 1,217); *Kneass v. Schuylkill Bank*, 14 F. Cas. 746 (C.C.D. Penn. 1820) (No. 7,875); *Many v. Jagger*, 16 F. Cas. 677 (C.C.N.D.N.Y. 1848) (No. 9,055); *Wilbur v. Beecher*, 29 F. Cas. 1181 (C.C.N.D.N.Y. 1850) (No. 17,634).

207. *Langdon v. De Groot*, 14 F. Cas. 1099 (C.C.S.D.N.Y. 1822) (No. 8,059).

208. *Earle*, 8 F. Cas. at 256.

209. *Id.*

art reference.²¹⁰ By the terms of the statute, a claim having even one element that is not described identically must be evaluated not as to novelty, but as to obviousness.²¹¹ In contrast, the early patent acts were construed to require an examination of the "substantial" novelty of a claimed invention.²¹² Under this standard, novelty could be defeated by a prior invention having one or more elements not identical but merely equivalent to the elements of the claimed process, composition or device.

In an analysis that survives today in the context of patent infringement,²¹³ the early courts applied a doctrine of equivalents in determining substantial novelty. The doctrine turns on whether a prior art device performed substantially the same function in substantially the same way to obtain substantially the same result as the claimed invention.²¹⁴ If so, the

210. See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715-16 (Fed. Cir. 1984); *Ralston Purina Co. v. Far-Mar-Co.*, 772 F.2d 1570, 1574 (Fed. Cir. 1985).

211. 35 U.S.C. § 103 (Supp. II 1984) governs patentability when "the invention is not identically disclosed or described as set forth in section 102. . . ." See *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715-16 (Fed. Cir. 1984). The procedural distinctions which follow from this classification are beyond the scope of the present Article. Generally, however, they include the important right in patent prosecution to submit extrinsic affidavit evidence to demonstrate the nonobviousness of the invention claimed to overcome a section 103 rejection. Such evidence may not be considered if a proper anticipation rejection is posed under 35 U.S.C. § 102 (1982).

212. See G. CURTIS, A TREATISE ON THE LAW OF PATENTS § 2 (1st ed. 1849); *id.* § 17 (patent law requires that "the subject-matter of a patent must be something substantially different from anything that has been known or used before; and this substantial difference, in all cases where analogous or similar things have been previously known or used, must be the measure of a sufficiency of invention to support the particular patent"). See also, G. CURTIS, A TREATISE ON THE LAW OF PATENTS § 32, at 25 (4th ed. 1873); *id.* § 41 at 30.

213. In the leading modern case, *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605 (1950), the Supreme Court confirmed that while infringement may be established by a device or composition that clearly falls within a claim of a valid patent, judicial inquiry is not limited to such literal infringement. The scope of a claim is not restricted to its literal terms, since permitting imitation of a patented invention that does not literally include each limitation of the claim would convert the patent grant into "a hollow and useless thing." *Id.* at 607. Even though it may differ with respect to one or more of the recited claim elements, an accused device infringes under the doctrine of equivalents if it performs substantially the same function in substantially the same way to accomplish substantially the same result. *Id.* at 608.

Accordingly, in *Graver Tank* an electric welding flux composition containing silicates of calcium and manganese, along with calcium fluoride, was found to infringe claims based on a combination of an alkaline earth metal silicate and calcium fluoride under the doctrine of equivalents (manganese is not an alkaline earth metal). Infringement was based on a showing that manganese and magnesium (the alkaline earth metal component used in patentee's commercial composition) served the same purpose in the two resulting fluxes, which were substantially identical in operation and result. *Id.* at 610-12. The Court noted prior art teaching the use of manganese in welding fluxes, and observed that there was no independent research by the infringer. *Id.* at 611.

214. See *Gray v. James*, 10 F. Cas. 1019, 1020 (C.C.D. Penn. 1817) (No. 5,719) (no anticipation when it cannot be pretended that patented invention and prior art "are substantially the same, and operate in the same manner to produce the same result"); *Whitney v.*

invention would not be substantially novel as required by the act, despite apparent differences in form, proportions or external mechanism.²¹⁵ Conversely, statutory standards for patentability were also applied often to determinations of infringement under the doctrine of equivalents. For example, the courts instructed that an accused device would not infringe if it were itself an invention or improvement for which a patent could have been granted,²¹⁶ rather than a mere change of form or proportions.²¹⁷

Applying the maxim, "that which infringes if later, anticipates if earlier,"²¹⁸ the courts developed a unitary equivalents standard that was applied to questions of both infringement and novelty, although the standard was often phrased in terms of whether the invention and the prior art embodied the same or different "principles," "results," and "effects."²¹⁹ Under this standard, which was often applied to improvement inventions, a patentee could show substantial novelty by indicating a different principle²²⁰ or by proving different results or effects, i.e., by

Emmett, 29 F. Cas. 1074, 1078 (C.C.E.D. Penn. 1831) (No. 17,585) (invention is not new if invention and prior art are "same in principle, structure, mode of operation and produce the same result . . . even though there may be a variance in some small matter for the purpose of evasion, or as a color for a patent"); Adams v. Edwards, 1 F. Cas. 112, 114-15 (C.C.D. Mass. 1848) (No. 53); Evans v. Eaton, 8 F. Cas. 856, 858 (C.C.D. Penn. 1818) (No. 4,560), *aff'd*, 20 U.S. (7 Wheat.) 356 (1822).

215. See Barrett v. Hall, 2 F. Cas. 914, 923 (C.C.D. Mass. 1818) (No. 1,047) (explanation in infringement context).

216. See Kneass v. Schuylkill Bank, 14 F. Cas. 746, 747 (C.C.D. Penn. 1820) (No. 7,875); Smith v. Pearce, 22 F. Cas. 619, 620 (C.C.D. Ohio 1840) (No. 13,089).

217. See Park v. Little, 18 F. Cas. 1107, 1108 (C.C.D. Penn. 1813) (No. 10,715); Lowell v. Lewis, 15 F. Cas. 1018, 1021 (C.C.D. Mass. 1817) (No. 8,568); cf. Langdon v. De Groot, 14 F. Cas. 1099, 1101 (C.C.S.D.N.Y. 1822) (No. 8,059).

218. See Miller v. Eagle Mfg. Co., 151 U.S. 186, 203 (1894). This defense often arose when defendants claimed to use only a prior art machine or process, and a finding of infringement would thus necessarily imply anticipation of the claims at issue. See, e.g., Barrett v. Hall, 2 F. Cas. 914 (C.C.D. Mass. 1818) (No. 1,047); Odiome v. Winkley, 18 F. Cas. 581 (C.C.D. Mass. 1814) (No. 10,432).

219. Cases applying the unitary standard to both novelty and infringement include Gray v. James, 10 F. Cas. 1015 (C.C.D. Penn. 1817) (No. 5,718); Lowell v. Lewis, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8,568); and Odiome v. Winkley, 18 F. Cas. 581 (C.C.D. Mass. 1814) (No. 10,432).

220. See Gray v. James, 10 F. Cas. 1015, 1016 (C.C.D. Penn. 1817) (No. 5,718) ("[I]t may safely be laid down as a general rule, that where the machines are substantially the same, and operate in the same manner, to produce the same result, they must be in principle the same. I say substantially, in order to exclude all formal differences; and when I speak of the same result, I must be understood as meaning the same kind of result though it may differ in extent.")

221. See Barrett v. Hall, 2 F. Cas. 914, 923 (C.C.D. Mass. 1818) (No. 1,047) ("The true legal meaning of the principle of a machine, with reference to the patent act, is the peculiar structure or constituent parts of such machine."); Lowell v. Lewis, 15 F. Cas. 1018, 1019-20 (C.C.D. Mass. 1817) (No. 8,568); Treadwell v. Bladen, 24 F. Cas. 144, 146 (C.C.E.D. Penn. 1827) (No. 14,154) ("contrivances" not found in the prior art "constitute the principles" of the patented improvement).

establishing any differences in structure,²²¹ operation,²²² effect or efficiency²²³ that would tend to show that the invention was more than a "colorable variation" of the prior art. Courts also considered these factors in cases of infringement,²²⁴ to determine whether the accused device was a mere variation of the patented invention, or sufficiently distinct to escape infringement under the doctrine of equivalents.

An interesting divergence of patentability and infringement standards appears in two respects. First, although improved economy or efficiency of operation were freely considered in the context of patentability, i.e., as indicia of the substantial novelty of an invention over a similar prior art device,²²⁵ courts were reluctant to accord such evidence similar weight in the context of infringement. For example, in *Gray v. James*,²²⁶ the defendants' machine operated with much greater efficiency than the patented apparatus (making two hundred nails per minute as opposed to thirty or forty). Nevertheless, Justice Washington considered this circumstance immaterial to the question of infringement, stating that the result obtained using the defendants' machine was the same result within the equivalents test, "whether the one produce more nails, for instance, in a given space of time than the other, if the operation is to make nails."²²⁷ Second, although the mechanic of ordinary skill in the art

222. See *Gray v. James*, 10 F. Cas. 1019, 1020 (C.C.D. Penn. 1817) (No. 5,719) (prior art device and invention are not substantially similar, and do not operate in the same manner to produce the same result, since they "are materially unlike in their parts, in their structure, and in their operation"); *Hall v. Wiles*, 11 F. Cas. 280, 283 (C.C.S.D.N.Y. 1851) (No. 5,954) (improvement must embody "some originality, and something substantial in the change producing a more useful effect and operation").

223. See *Woodcock v. Parker*, 30 F. Cas. 491, 492 (C.C.D. Mass. 1813) (No. 17,971) (substantially new machine includes "a new mode, method, or application of mechanism, to produce some new effect, or to produce an old effect in a new way"); *Whitney v. Emmett*, 29 F. Cas. 1074, 1078 (C.C.E.D. Penn. 1831) (No. 17,585) (invention includes new combination of parts of old machinery, "operating in a peculiar, better, cheaper, or quicker method"); *Hovey v. Stevens*, 12 F. Cas. 609, 612 (C.C.D. Mass. 1846) (No. 6,745) (novelty in principle may consist in a "new and valuable mode of applying an old power; affecting it, not merely by a new instrument or form of the machine or any mere equivalent, but by something giving a new or greater advantage"); *Treatwell v. Bladen*, 24 F. Cas. 144, 146 (C.C.E.D. Penn. 1827) (No. 14,154) (referring to greatly increased efficiency of invention biscuit maker over prior art device); *Davis v. Palmer*, 7 F. Cas. 154, 159 (C.C.D. Vir. 1827) (No. 3,645); *Hall v. Wiles*, 11 F. Cas. 280, 283 (C.C.S.D.N.Y. 1851) (No. 5,954) ("result, if greatly more beneficial than it was with the old contrivance . . . tends to characterize, in some degree, the importance of the change").

224. See cases cited *supra* notes 216-19. The infringement doctrine of equivalents developed in the circuit courts was adopted by the Supreme Court in *Winans v. Denmead*, 56 U.S. (15 How.) 330 (1853).

225. See cases cited *supra* note 223.

226. 10 F. Cas. 1015 (C.C.D. Penn. 1817) (No. 5,718).

227. *Id.* at 1016; accord *Wilbur v. Beecher*, 29 F. Cas. 1181, 1187 (C.C.N.D.N.Y. 1850) (No. 17,634) (infringement not avoided by improvements increasing efficiency over patented machine, since "a degree of imperfection . . . from a want of experience, always attends the first construction"); but cf. Justice Washington's opinion in *Kneass v. Schuylk-*

occasionally had appeared in the context of infringement, with the argument that the differences between a patented and infringing device would have occurred immediately to such a person, this test apparently had not been applied in the context of patentable novelty before *Hotchkiss*.²²⁸ These discrepancies suggest that the substantial novelty standard for patentability was at least occasionally considered to be less rigorous than that for determining infringement, i.e., that the quantum of objective difference sufficient to sustain a valid patent was less than the difference required to avoid infringement under the doctrine of equivalents. This is still the case in copyright law, where a mere "distinguishable variation" provides sufficient originality to sustain a copyright in the variation,²²⁹ but the same distinguishable variation in one work may not sufficiently alter its substantial similarity to another so as to avoid infringement.²³⁰

It is sufficient for the purposes of the present discussion to indicate that an invention easily could be found to be anticipated under the substantial novelty test, but could be found to be novel under the stricter modern statutory standard. However, the modern obviousness standard is considerably more restrictive than the standard applied to a determination of "substantial novelty." To illustrate, the substitution of a known circular saw for the reciprocating saw in *Evans v. Eaton* might well have been an obvious step to a mechanic of ordinary skill in the shingle-making art, but the resulting combination was nonetheless substantially novel, presumably because the substitution of a circular saw did not achieve the object in "substantially the same manner."

The substantial novelty requirement was developed in the courts through application of a number of subsidiary tests, the most important of which were the criteria of change of form or proportions, double use, and change of material.²³¹

ill Bank, 14 F. Cas. 746, 747 (C.C.D. Penn. 1820) (No. 7,875) (substantial improvement of printing process by substitution of steel for copper plates sufficient to avoid infringement).

228. 52 U.S. (11 How.) 248 (1850). See the dissenting opinion of Justice Woodbury, *id.* at 269.

229. See, e.g., *Alfred Bell & Co. v. Catalda Fine Arts, Inc.*, 191 F.2d 99, 105 (2d Cir. 1951); *Alva Studios v. Winninger*, 177 F. Supp. 265, 267 (S.D.N.Y. 1959); *Gerlach-Barklow Co. v. Morris & Bendien, Inc.*, 23 F.2d 159, 161 (2d Cir. 1927); *Eden Toys, Inc. v. Florelee Undergarment Co.*, 697 F.2d 27, 34-35 (2d Cir. 1982); *but see L. Batlin & Son, Inc. v. Snyder*, 536 F.2d 486, 490 (2d Cir.) (en banc), *cert. denied*, 429 U.S. 857 (1976); *Durham Indus. v. Tomy Corp.*, 630 F.2d 905, 910 (2d Cir. 1980); *Gracen v. Bradford Exchange*, 698 F.2d 300, 305 (7th Cir. 1983); *Sherry Mfg. Co. v. Towel King of Florida, Inc.*, 753 F.2d 1565 (11th Cir. 1985).

230. See 3 M. NIMMER, *NIMMER ON COPYRIGHT*, § 13.03 [A], n.4 (1985).

231. Jefferson indicated that these rules were also considered by the original patent board in determining patentability, see *supra* note 162 and accompanying text. The fourth rule urged by Jefferson, against patenting of a combination of old elements, see *supra* note 163 and accompanying text, was never applied by the courts. See, e.g., *Earle v. Sawyer*, 8

C. Change of Form or Proportions

The statutory prohibition that "simply changing the form or the proportions of any machine, or composition of matter, in any degree, shall not be deemed a discovery"²³² was not construed to impose any additional patentability requirement beyond novelty, but instead was treated as a particular application of the substantial novelty criterion. When raised as a defense, the difference of form or proportions limitation was not contrasted with the novelty requirement²³³ but rather appears to have been an explicit statement of one specific factor to be considered in determining substantial novelty.²³⁴

Courts frequently treated the difference of form or proportions interchangeably with the substantial novelty determination.²³⁵ Justice Story, for instance, in *Lowell v. Lewis*, instructed the jury that a patent must be for a machine "substantially new in its structure and mode of operation, and not merely changed in form, or in the proportion of its parts."²³⁶ Occasionally, the question was phrased in the somewhat confusing terms of whether a difference in "principle"²³⁷ as opposed to a difference in

F. Cas. 254 (C.C.D. Mass. 1825) (No. 4,247); *Lowell v. Lewis*, 15 F. Cas. 1018, 1020 (C.C.D. Mass. 1817) (No. 8,568); *Ryan v. Goodwin*, 21 F. Cas. 110, 111 (C.C.D. Mass. 1839) (No. 12,186); *Hovey v. Henry*, 12 F. Cas. 603, 604 (C.C.D. Mass. 1846) (No. 6,742); *Pennock v. Dialogue*, 19 F. Cas. 171, 173 (C.C.E.D. Penn. 1825) (No. 10,941), *aff'd*, 27 U.S. (2 Pet.) 1 (1829).

232. 1793 Patent Act, *supra* note 157, § 2.

233. Although occasionally juries were instructed on the defense that a patented invention embodied only a difference in "form or proportions" from the prior art, there is no indication in these cases that novelty was conceded or that the form or proportions limitation was considered to impose any additional requirement beyond novelty. See, e.g., *Pettibone v. Derringer*, 19 F. Cas. 387, 389 (C.C.D. Penn. 1818) (No. 11,043); *Davis v. Palmer*, 7 F. Cas. 154, 159 (C.C.D. Vir. 1827) (No. 3,645); *Treadwell v. Bladen*, 24 F. Cas. 144, 146 (C.C.E.D. Penn. 1827) (No. 14,154).

234. Even after elimination of this language from the statute, the substantial novelty requirement itself required consideration of whether the difference between the prior art and the invention was only a change of form or proportions. See *Winans v. Denmead*, 56 U.S. (15 How.) 330, 341 (1853). Courts did not construe the explicit inclusion of the form or proportions limitation in the statute to enlarge the degree of difference required to sustain validity.

235. See *Woodcock v. Parker*, 30 F. Cas. 491, 492 (C.C.D. Mass. 1813) (No. 17,971); *Whitney v. Emmett*, 29 F. Cas. 1074, 1078 (C.C.E.D. Penn. 1831) (No. 17,585); *Many v. Jagger*, 16 F. Cas. 677, 682 (C.C.N.D.N.Y. 1848) (No. 9,055).

236. 15 F. Cas. 1018, 1019-20 (C.C.D. Mass. 1817) (No. 8,568).

237. This phrasing was used most notably by Justice Washington. See, e.g., *Park v. Little*, 18 F. Cas. 1107, 1108 (C.C.D. Penn. 1813) (No. 10,715); *Pettibone v. Derringer*, 19 F. Cas. 387, 389 (C.C.D. Penn. 1818) (No. 11,043); *Pennock v. Dialogue*, 19 F. Cas. 171, 173-74 (C.C.E.D. Penn. 1825) (No. 10,941), *aff'd*, 27 U.S. (2 Pet.) 1 (1829); and *Treadwell v. Bladen*, 24 F. Cas. 144, 146 (C.C.E.D. Penn. 1827) (No. 14,154). As Justice Story observed, reliance on "principle" in patent litigation often led to confusion, even when there was agreement as to the precise factual differences at issue:

form existed. Nevertheless, in the bare terms of the statutory standard,²³⁸ judicial instructions stating that a new structure,²³⁹ combination,²⁴⁰ or effect²⁴¹ was sufficient to constitute a new principle once again indicate application of the substantial novelty standard.

Other considerations also support the view that issues of change of form or proportions were subsumed under the substantial novelty inquiry. The provision relating to change of form or proportion was eliminated in the 1836 act, evidently as surplusage, and without affecting the patentability standard, since the judiciary continued to apply it as implicit in the substantial novelty requirement.²⁴² More importantly, although the change of form standard could have produced an additional minimum difference requirement beyond novelty,²⁴³ restrictive early judicial construction prevented this result. In *Davis v. Palmer*,²⁴⁴ Justice Marshall responded to the argument that an improved plow mould-board having a particular concave surface was only a change of form and proportion on prior art plows by holding that in construing the provision,

the word "simply," has, we think, great influence. It is not every change of form and proportion which is declared to be no discovery, but that which is simply a change of form or proportion, and nothing more. If, by changing the form and proportion, a new effect is produced, there is not simply a change of form and proportion, but a change of principle also.²⁴⁵

In all my experience I can scarcely recollect a single instance, in which the general question, whether the principles of two machines were the same or different, has not produced from different witnesses, equally credible and equally intelligent, opposite answers.

Barrett v. Hall, 2 F. Cas. 914, 923 (C.C.D. Mass. 1818) (No. 1,047).

238. See *Dixon v. Moyer*, 7 F. Cas. 758, 760 (C.C.D. Penn. 1821) (No. 3,931).

239. See *Barrett v. Hall*, 2 F. Cas. 914, 923 (C.C.D. Mass. 1818) (No. 1,047).

240. See *Treadwell v. Bladen*, 24 F. Cas. 144, 146 (C.C.E.D. Penn. 1827) (No. 14,154).

241. See *Davis v. Palmer*, 7 F. Cas. 154, 159 (C.C.D. Vir. 1827) (No. 3,645).

242. See *Winans v. Denmead*, 56 U.S. (15 How.) 330, 341 (1853).

243. The decision in *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248 (1851), which is widely regarded as the first judicial application of the nonobviousness standard, involved a change of materials rather than a change of form, but its rationale would have been equally applicable to determining the patentability of a change of form, as was later recognized. *Cf.* *Winans v. Denmead*, 56 U.S. (15 How.) 330, 341 (1853) ("Merely to change the form of a machine is the work of a constructor, not of an inventor; such a change cannot be deemed an invention.").

244. 7 F. Cas. 154 (C.C.D. Vir. 1827) (No. 3,645).

245. *Id.* at 159.

D. New or Double Use

Another corollary of the substantial novelty requirement judicially imposed at an early date in American patent law was the doctrine prohibiting the patenting of a new use or double use of an existing invention. Well-established in English patent law²⁴⁶ and identified by Jefferson as a rule applied under the 1790 Patent Act,²⁴⁷ this principle was first judicially acknowledged in *Whittemore v. Cutter*.²⁴⁸ The double use restriction required that a machine itself must be substantially new in order to be patented. Correspondingly, if a machine was old and well-known, claims drawn either to the machine or to a new purpose to which it was applied were not patentable.²⁴⁹ As Justice Story reasoned in a favorite analogy, "[a] man, who should use a common coffee-mill for the first time to grind peas, could hardly maintain a patent for it."²⁵⁰ The principle was applied to process claims in *Howe v. Abbott*,²⁵¹ and was adopted by the Supreme Court in *Phillips v. Page*.²⁵²

246. See, e.g., *Boulton v. Bull*, 126 Eng. Rep. 651 (1795); *Brunton v. Hawkes*, 106 Eng. Rep. 1034 (1821); *Losh v. Hague*, 1 Web. Pat. Cas. 202 (1844); *Kay v. Marshall*, 8 Eng. Rep. 96 (1841); *Bush v. Fox*, Macr. 152, N.P. (1852); *Hiarwood v. Great Northern R.R.*, 11 Eng. Rep. 1488 (1865).

247. See *supra* note 162 and accompanying text.

248. 29 F. Cas. 1123, 1124 (C.C.D. Mass. 1813) (No. 17,601) ("[I]f new effects are produced by an old machine in its unaltered state, I apprehend that no patent can be legally supported, for it is a patent for an effect only."). Again, without citing specific authority, Justice Story later indicated, "It requires no commentary to establish, that the application of an old thing to a new use, without any other invention, is not a patentable contrivance." *Ames v. Howard*, 1 F. Cas. 755, 757 (C.C.D. Mass. 1833) (No. 326).

249. This is the classic formulation of the rule by Justice Story in *Bean v. Smallwood*, 2 F. Cas. 1142 (C.C.D. Mass. 1843) (No. 1,173), which invalidated claims to a rockerless rocking chair, having a stationary stool and a seat made to rock on top of it. The basic construction of the chair in two parts and the mode of connecting the stool and seat were held to be anticipated. A further apparatus, permitting the back of the seat to be reclined at any desired angle, had "been long in use, and applied, if not to chairs, at least in other machines, to purposes of a similar nature." *Id.* at 1143. This feature was held to be "at most . . . an old invention, or apparatus, or machinery, applied to a new purpose" and not a "substantially new" machine. *Id.*

250. *Ames v. Howard*, 1 F. Cas. 755, 757 (C.C.D. Mass. 1833) (No. 326). See also *Bean v. Smallwood*, 2 F. Cas. 1142, 1143 (C.C.D. Mass. 1843) (No. 1,173) ("A coffee mill applied for the first time to grind oats, or corn, or mustard, would not give a title to a patent for the machine.").

251. 12 F. Cas. 656 (C.C.D. Mass. 1842) (No. 6,766). There the patentee had applied to palm leaf fiber a known process of twisting, curling, baking, and steaming hair to create stuffing for beds, mattresses and cushions. Although there was evidence to show that the process had earlier been applied to other grasses, it was argued that palm leaf had not been thus treated until about the time that the patent at issue was granted. *Id.* at 657. Justice Story held the claim invalid since the process was well known before, although applied to a different material. *Id.* at 657-58.

252. 65 U.S. (24 How.) 164, 167 (1860). *Bean v. Smallwood* had earlier been approvingly cited in *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 177 (1852), but the Court's rationale is somewhat obscure, because it turns on questions of claim construction. *Id.* at

While the rule against patenting a new use might appear to duplicate the nonobviousness requirement, since to use a coffee mill to grind peas also might have been obvious, this prohibition was based on substantial novelty and statutory subject matter considerations, and extended even to nonobvious new uses. The few American cases before *Hotchkiss* arguably involved new uses that would have been obvious under any standard, and do not provide a clear basis for distinguishing new use from nonobviousness.²⁵³ However, the new use rule was adopted from English patent law.²⁵⁴ As developed in the English courts and as understood by American commentators, this legal bar extended to clearly non-obvious new uses. Perhaps the best illustration of this point is the frequently-cited statement of Justice Buller in *Boulton v. Bull*.²⁵⁵ The Justice stated that even the discovery of a new use for a common nostrum, such as the discovery that "Doctor James's fever powder" cures consumption, would not sustain a patent for the treatment, despite the fact that "the use of the medicine would be new, and the effect of it as materially different from what is now known, as life is from death."²⁵⁶ The harshness of the rule is well-illustrated by *Morton v. New York Eye Infirmary*,²⁵⁷ which held that the use of ether as an anesthetic was a non-statutory subject matter and, therefore, unpatentable as a new use of an old agent.

Accordingly, while the new use limitation served in some circumstances to invalidate patents which could also have been considered obvious, it differed from the modern obviousness inquiry in at least two legally significant respects. The new use bar precluded patentability even of startlingly nonobvious new applications of known machines,

176-77.

253. See *Winans v. Bost. & Prov. R.R.*, 30 F. Cas. 259 (C.C.D. Mass. 1843) (No. 17,858); cf. *Wyeth v. Stone*, 30 F. Cas. 723 (C.C.D. Mass. 1840) (No. 18,107).

254. See *supra* note 246. Justice Story's coffee-mill analogy is paralleled by the observation of Lord Abinger that "it would be a very extraordinary thing to say, that because all mankind have been accustomed to eat soup with a spoon, that a man could take out a patent because he says you might eat peas with a spoon." *Losh v. Hague*, 1 Web. Pat. Cas. 202, 208 (1838).

255. 126 Eng. Rep. 651 (1795). The influence of this case and *Hornblower v. Boulton*, 101 Eng. Rep. 1285 (1799) can be appreciated from the Supreme Court's indication that they were "very elaborately discussed, and contain more learning on the subject of patents than [sic] can be found in any other adjudications, and are, therefore, deserving of the most accurate attention of every lawyer." *Evans v. Eaton*, 16 U.S. (3 Wheat.) 454, app. at 18 (1818).

256. This statement is cited by PHILLIPS, *THE LAW OF PATENTS FOR INVENTIONS* 106 (1837) and CURTIS, *A TREATISE ON THE LAW OF PATENTS* § 54, at 45 n.1 (4th ed. 1873). The English double use cases were of considerable importance in the early development of American law, and are well-summarized by Curtis, *id.* at §§ 54-69.

257. 17 F. Cas. 879, 882-83 (C.C.S.D.N.Y. 1862) (No. 9,865).

processes and compositions of matter.²⁵⁸ It furthermore applied only to new applications of substantially the same machine or process and not to "obvious" variations deemed unanticipated due to minor differences in the machine or process,²⁵⁹ an exception that tempered the draconian new use rule.²⁶⁰ Although this anachronistic doctrine continued to be applied in United States patent law until the 1952 revision,²⁶¹ in its origins the new use bar cannot be equated meaningfully with later-developed and more comprehensive standards based on ordinary skill in the pertinent art.

E. Change of Material

Although proposed by Jefferson,²⁶² and long debated in English law,²⁶³ the principle that mere substitution of one material for another

258. As Judge Learned Hand summed up the doctrine in *Old Town Ribbon and Carbon Co. v. Columbia Ribbon and Carbon Mfg. Co.*, 159 F.2d 379 (2d Cir. 1947).

If [a patent] be merely for a new employment of some "machine, manufacture or composition of matter" already known, it makes not the slightest difference how beneficial to the public the new function may be, how long a search it may end, how many may have shared that search, or how high a reach of imaginative ingenuity the solution may have demanded. All the mental factors which determine invention may have been present to the highest degree, but it will not be patentable because it will not be within the terms of the statute. This is the doctrine that a "new use" can never be patentable.

Id. at 382. *Accord In re Thuau*, 135 F.2d 344, 346 (C.C.P.A. 1943).

259. *Old Town Ribbon and Carbon Co. v. Columbia Ribbon and Carbon Mfg. Co.*, 159 F.2d 379, 382 (2d Cir. 1947). *See generally* *Hovey v. Henry*, 12 F. Cas. 603 (C.C.D. Mass. 1846) (No. 6,742); *Wyeth v. Stone*, 30 F. Cas. 723 (C.C.D. Mass. 1840) (No. 18,107) (distinguishing "substantially new" machine from new use or application of old machine on basis of structural differences, with no discussion of obviousness).

260. For a general discussion of the later development of the new use doctrine, see Ryan, *Patentability of a New Use for an Old Composition of Matter*, 15 GEO. WASH. L. REV. 284 (1946).

261. 35 U.S.C. § 100(b) (1982) defines the term "process" as including "a new use of a known process, machine, manufacture, composition of matter, or material." This language was included in the 1952 revision to dispel all doubt that new use inventions are patentable and to overrule legislatively the longstanding judicially fashioned prohibition against new use patents, provided other conditions for patentability are satisfied. *See* FEDERICO, COMMENTARY ON THE NEW PATENT ACT, 35 U.S.C.A. § 1, 16-17 (1954); H.R. REP. NO. 1923, 82d Cong., 2d Sess. 17 (1952); *In re Waldbaum*, 457 F.2d 997, 1002-03 (C.C.P.A. 1972).

262. *See supra* note 162 and accompanying text.

263. *Compare, e.g.,* Webster's statement that "[n]o one can say that a silver and an earthen teapot are the same manufacture." T. WEBSTER, WEBSTER ON PATENTS § 25 (1854), *cited in Hotchkiss*, 52 U.S. at 255, with Sir John Leach's argument that "[t]he making of an old machine of new materials, could not be a discovery; and the plaintiff could claim no protection, for an invention, the only merit of which consisted in being made of brass instead of wood. When tea was first introduced into this country, earthen teapots were used; but could a person who made the first one of silver be entitled to a patent?"

was not patentable subject matter was not well-established in the American courts prior to *Hotchkiss*. In *Kneass v. Schuylkill Bank*,²⁶⁴ the leading early case, Justice Washington considered the question of whether the printing of banknotes with steel plates on the reverse face and letterpress on the front face infringed a patent claim for printing copperplate on the reverse face as a security against counterfeiting. Over the patentee's assertion that the substitution of steel plates for copper was a mere evasion, the court instructed the jury that if the use of steel plates were an improvement on printing from copperplate, for which a patent could have been obtained, the use of steel plates by the defendants could not be considered an infringement.²⁶⁵ By equating the substantial novelty test for infringement with the patentability standard, *Kneass* established the rule to be applied in change of material cases as the general statutory standard of substantial novelty.

Harmonized with and governed by the substantial novelty standard, the substitution of material rule required an inquiry into whether the asserted invention performed substantially the same function, in substantially the same manner, to obtain substantially the same result, as the prior art. Accordingly, following *Kneass* and English precedent, American commentators concluded that a difference in "effect" or result—such as a better, more useful or cheaper manufacture—was sufficient to sustain patent claims to manufactures involving substituted material.²⁶⁶ As with change of form and new use cases, the legal determination in change of materials cases focused upon the substantial and material differences between the invention and the prior art,²⁶⁷ and not upon the

Walker v. Converse, 29 Rep. Arts 2d at 311, cited in W. PHILLIPS, THE LAW OF PATENTS FOR INVENTIONS 133-34 (1837).

264. 14 F. Cas. 746 (C.C.D. Penn. 1820) (No. 7,875).

265. *Id.* at 747.

266. Evidently influenced by the holding of Justice Buller in *Rex v. Arkwright*, 1 Web. Pat. Cas. 64, 71 (1785), that "if there be any thing material and new, which is an improvement of the trade, that will be sufficient to support a patent." Curtis considered that "the mere substitution of one metal for another, in a particular manufacture, might be the subject of a patent, if the new article were better, more useful, or cheaper than the old." G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 8, at 7 (1st ed. 1849).

267. Writing in 1873, Curtis reaffirmed:

If such substitution involves a new method of attachment or construction, or leads to any new mode of operation, or develops a new application of the properties of matter, so as to change the use of the manufacture or machine, there may be in the use of the new material a patentable invention.

G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 75 (4th ed. 1873).

labor, skill, study, or expense required or applied to derive the invention from the prior art.²⁶⁸

In early American patent law, the unitary standard of substantial similarity was applied equally in cases of change of form, new use, and change of material. The analysis employed by the courts did not permit consideration of the degree of inventive skill required to make the change from the prior art, which was regarded as immaterial. A number of early cases contained remarkably clear analyses of the invention, the prior art, and the pertinent differences between the two, but failed to proceed to the essential nonobviousness inquiry of whether the skill required to make the changes exceeded the ordinary skill in the art.²⁶⁹ This standard was first altered by the Supreme Court in the limited context of patents claiming a change of material in *Hotchkiss v. Greenwood*.²⁷⁰ Rather than constituting an extension of the patentability standard applied by the judiciary in the previous sixty years, *Hotchkiss* represented an abrupt departure from the earlier substantial novelty criterion.

F. The *Hotchkiss* Nonobviousness Standard

The majority opinion in *Hotchkiss* acknowledged the patentees' basic factual argument that the substitution of clay for wood or metal produced a doorknob that was both better and cheaper than the prior doorknobs, but declared that

this, of itself, can never be the subject of a patent. No one will pretend that a machine, made, in whole or in part, of materials better adopted to the purpose for which it is used than the

268. See *id.* at 69; see also *infra* note 283.

269. In many cases, improvement patents were held invalid for overclaiming, i.e., for including prior art devices as part of the claimed invention rather than specifically limiting the claims to the improvement invented. See, e.g., *Whittemore v. Cutter*, 29 F. Cas. 1120 (C.C.D. Mass. 1813) (No. 17,600); *Odiome v. Winkley*, 18 F. Cas. 581 (C.C.D. Mass. 1814) (No. 10,432); *Barrett v. Hall*, 2 F. Cas. 914 (C.C.D. Mass. 1818) (No. 1,047); *Woodcock v. Parker*, 30 F. Cas. 49 (C.C.D. Mass. 1813) (No. 17,971); *Whitney v. Emmett*, 29 F. Cas. 1074 (C.C.E.D. Penn. 1831) (No. 17,585). Another frequently-litigated prior art issue was whether an improvement was described with sufficient particularity to distinguish it from the prior art, a requirement imposed by section 3 of the 1793 Patent Act. See, e.g., *Evans v. Eaton*, 20 U.S. (7 Wheat.) 356, 434-35 (1822); *Lowell v. Lewis*, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8,568); *Barrett v. Hall*, 2 F. Cas. 914 (C.C.D. Mass. 1818) (No. 1,047); *Dixon v. Moyer*, 7 F. Cas. 758 (C.C.D. Penn. 1821) (No. 3,931); *Isaacs v. Cooper*, 13 F. Cas. 153 (C.C.D. Penn. 1821) (No. 7,096). Except as applied to the issue of enablement, these cases uniformly ignored the ordinary level of skill in the art.

270. 52 U.S. (11 How.) 248 (1851).

materials of which the old one is constructed, and for that reason better and cheaper, can be distinguished from the old one; or, in the sense of the patent law, can entitle the manufacturer to a patent.²⁷¹

This apparently absolute rule, requiring a "new mechanical device or contrivance,"²⁷² is irreconcilable with the *Kneass* standard, which submitted the question of improvement to the jury and clearly imposed no requirement of a new mechanical contrivance or arrangement as a precondition for consideration of patentability.²⁷³ In *Hotchkiss*, the Court affirmed the lower court's refusal to submit to the jury the question of whether the knob produced by the substitution was better and cheaper, or to allow evidence of commercial success.²⁷⁴ The Court declined to find error in the refusal to submit to the jury the question of whether skill, thought, and invention were required to make the substitution. At the same time, the Court indicated that the degree of skill possessed by the ordinary artisan was the proper threshold standard of patentability.²⁷⁵ The Court's refusal to permit consideration either of the superiority of the new article or of evidence of commercial success largely vitiated the obviousness inquiry, since these considerations as well as long-felt need are highly relevant factual considerations underlying the modern non-obviousness determination.²⁷⁶ In effect, the Court ruled as a matter of law that in the absence of a new mechanical arrangement or contrivance, the mere substitution of materials could "never be the subject of a patent."²⁷⁷ It is worthy of note that the majority cites no authority for this

271. *Id.* at 266.

272. *Id.* Justice Nelson denied the possibility of patentability absent "some new contrivance or arrangement in the manufacture." *Id.*

273. *Kneass v. Schuylkill Bank*, 14 F. Cas. 746 (C.C.D. Penn. 1820) (No. 7,875).

274. See *Hotchkiss*, 52 U.S. at 255 (counsel for patentees' argument).

275. This question was raised by patentees, *id.* at 254, and as the Supreme Court later held, was a proper determination for the jury. *Cf. Tucker v. Spalding*, 80 U.S. (13 Wall.) 453 (1871).

276. See *Graham*, 383 U.S. at 17-18.

277. *Hotchkiss*, 52 U.S. at 266. The holding of *Hotchkiss* was tempered in *Smith v. Goodyear Dental Vulcanite Co.*, 93 U.S. 486 (1876), which found considerations of long-felt need and commercial success to be decisive in favor of patentability in the case of substituting a cheap, durable and elastic material—vulcanized rubber—for gold plates earlier used in forming the plate and gums to which artificial teeth are attached. *Id.* at 495. The cheapness of the new artificial teeth, along with their new uses and properties were also emphasized as material by the Court. *Id.* at 494. The Court in *Goodyear Dental Vulcanite* read *Hotchkiss* as limited to cases concerning substituted materials resulting in a product which is only cheaper and more durable but found that in this case a new product resulted. *Goodyear Dental Vulcanite* significantly modified the absolute proscription stated in *Hotchkiss*, both by its reliance on the superior properties of the new article, which were dismissed as immaterial in *Hotchkiss*, and by its refusal to require a change of mechanical form as an absolute precondition to patentability.

proposition, apart from a single anecdotal reference to a case tried by the author of the opinion.²⁷⁸

The magnitude of the change in the settled law of patents wrought by this standard is emphasized by the dissent. Justice Woodbury cited both English law and *Earle v. Sawyer*²⁷⁹ for the principle that the degree of skill required to make an invention is manifestly immaterial to the patentability inquiry.²⁸⁰ He then urged that the true test of patentability was whether the invention was new, better, and cheaper than what preceded it, relying upon English authority and *Kneass*.²⁸¹ The review of pre-*Hotchkiss* case law presented above supports the *Hotchkiss* dissent's conclusion that the majority's test "has not the countenance of precedent, either English or American."²⁸²

At first, the significance of this departure from the established substantial novelty requirement in favor of an unprecedented and more restrictive nonobviousness standard was not appreciated, either by the Supreme Court or by legal commentators. The judicial creation of an additional patentability requirement, that the difference from the prior art exceed the ordinary level of skill possessed by a mechanic, was initially interpreted as limited to the factual context of substitution of material cases.²⁸³ The author of the *Hotchkiss* opinion, Justice Nelson, later

278. Justice Nelson refers to a suit in which an action asserting infringement of a patent for an improved button, having a wood foundation covered with tin, was given up by the plaintiff after evidence of an earlier button, made in precisely the same way except for a foundation of bone, was introduced. *Hotchkiss*, 52 U.S. at 266.

279. 8 F. Cas. 254 (C.C.D. Mass. 1825) (No. 4,247).

280. *Hotchkiss*, 52 U.S. at 269. In urging that the skill inquiry was immaterial to patentability or at least was "entirely subordinate" to the question of whether the invention was cheaper and better, the dissent refers to the restricted use of the test of ordinary skill that was applied occasionally under the substantial novelty standard in order to determine if an accused device was sufficiently new or distinguished from a former invention to prevent it from being an infringement, or to determine whether an invention was original, that is, whether it was a trifling change and merely colorable. *Id.* at 268-69 (citing *Odiome v. Winkley*, 18 F. Cas. 581 (C.C.D. Mass. 1814) (No. 10,432); and *Lowell v. Lewis*, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (No. 8,568)).

281. Justice Woodbury considered *Kneass v. Schuylkill Bank*, 14 F. Cas. 746 (C.C.D. Penn. 1820) (No. 7,875), to very closely resemble the case under consideration. *Hotchkiss*, 52 U.S. at 271.

282. *Hotchkiss*, 52 U.S. at 270. The further objection, that the test "seems open to great looseness or uncertainty in practice" seems equally justified with the benefit of a century of hindsight. See sources cited *supra* note 90.

283. Curtis, for example, writing in 1873 concluded:

The amount of ingenuity or skill or invention involved in the attaching of the knob and the shank was therefore not a material issue in the case; and the sole material issue was, whether the substance of a knob, so attached, was new, and whether *that* novelty made the new knob a patentable invention. The case therefore presented the naked question of the superiority of a new material for the purposes for which that material was used in an old manufacture as the ground for a patent.

specifically rejected the existence of a nonobviousness requirement for patents claiming combinations of old elements in *McCormick v. Seymour*.²⁸⁴ He evidently regarded the *Hotchkiss* rule as not controlling outside the limited context of substitution of materials cases. Of equal interest is the opinion of Justice McLean in *Heinrich v. Luther*,²⁸⁵ which formulated the requirement of patentability as whether "the invention is found to be new and useful, and the applicant . . . is the first and original inventor," with no mention of an additional obviousness inquiry.²⁸⁶ In that case, the principal controversy involved the novelty of providing a beak on the handle of tailor's shears, which served to keep the handles apart. Defendants argued that the invention was not novel, in view of prior art shears employing a screw to keep the handles apart, "answering the same purpose as the beak."²⁸⁷ The court distinguished *Hotchkiss*²⁸⁸ and instructed that if the beak claimed by the plaintiff "be more substantial than the screw, being cheaper and fastened to the handle of the shears in a new mode, different from the screw or the wire formerly used, it is an invention for which a patent may issue."²⁸⁹ Conspicuously absent is any inquiry into whether it would have required any degree of

G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 69 (4th ed. 1873) (emphasis in original).

284. 15 F. Cas. 1322, 1323, 1325 (C.C.N.D.N.Y. 1851) (No. 8,726), *rev'd on other grounds*, 57 U.S. (16 How.) 480 (1853). In *Hall v. Wiles*, 11 F. Cas. 280 (C.C.S.D.N.Y. 1851) (No. 5,954), he instructed the jury on the question of novelty without reference to the standard of ordinary skill, instead maintaining:

An improvement upon an old contrivance, in order to be of sufficient importance to be the subject of a patent, must embody some originality, and something substantial in the change producing a more useful effect and operation. And, in determining this question, the jury have a right to take into consideration, in connection with the change, the result which has been produced.

Id. at 283. *But cf.* *Many v. Jagger*, 16 F. Cas. 677, 683 (C.C.N.D.N.Y. 1848) (No. 9,055) (substantial novelty of invention evaluated both in terms of new and useful result and "ingenuity other than ordinary mechanical skill").

285. 11 F. Cas. 1037 (C.C.D. Ohio 1855) (No. 6,327).

286. *Id.* at 1037. Justice McLean authored the circuit court opinion in *Hotchkiss*, 12 F. Cas. 551 (C.C.D. Ohio 1848) (No. 6,718), *aff'd*, 52 U.S. (11 How.) 248 (1851).

287. 11 F. Cas. at 1038. Other witnesses testified that a wire had been used for the same purpose. *Id.*

288. Without citing *Hotchkiss*, the court explained:

A knob of porcelain on a door is common. As porcelain was well known before it was so applied, and as knobs were common of other materials, the use of porcelain for this purpose gave no right to a patent. But if a new and useful mode of fastening the knob on the spindle was invented, that is a sufficient invention for a patent. And so in regard to the beak claimed by the plaintiff.

Id.

289. *Id.*

skill to substitute a beak for the prior art screw or wire.²⁹⁰

That *Hotchkiss* established a special rule applicable only to substitution of materials cases is supported by the fact that the initial Supreme Court cases applying *Hotchkiss* involved only changes of material.²⁹¹ For nineteen years after the *Hotchkiss* decision, the Supreme Court did not invalidate a single patent on the basis of obviousness.²⁹² More importantly, in sustaining the validity of patents before it, the Court routinely failed to conduct any inquiry into the degree of skill required to derive an invention over the disclosure of the prior art. This was the case even when the Court considered the validity of rather simple combination patents over close prior art.²⁹³ In a case notable for its thorough description of the prior art, *Seymour v. Osborne*,²⁹⁴ the Court considered one of the first direct obviousness attacks on patent validity. It rejected the view of the circuit court that the combination of elements taught in the prior art was "not invention, but merely the exercise of ordinary skill."²⁹⁵ Justice Clifford, writing for a unanimous Court, failed even to consider whether the combination of old elements required inventive skill. Instead, he held that "if the change of construction and operation actually adapts the machine to a new and valuable use not known before,

290. See also, *McCormick v. Seymour*, 15 F. Cas. 1322, 1323 (C.C.N.D.N.Y. 1851) (No. 8,726), *rev'd on other grounds*, 57 U.S. (16 How.) 480 (1853); *Hall v. Wiles*, 11 F. Cas. 280, 283 (C.C.S.D.N.Y. 1851) (No. 5,954); *Tuck v. Bramhill*, 24 F. Cas. 259, 261-62 (C.C.S.D.N.Y. 1868) (No. 14,213); *Bray v. Hartshorn*, 4 F. Cas. 38, 40 (C.C.D. Mass. 1860) (No. 1,820); *Treadwell v. Parrott*, 24 F. Cas. 154, 156 (C.C.S.D.N.Y. 1866) (No. 14,158).

291. See *Hicks v. Kelsey*, 85 U.S. (18 Wall.) 670 (1873) (substitution of iron for wood in wagon-reach without change of shape or function); *Union Paper Collar Co. v. Van Dusen*, 90 U.S. (23 Wall.) 530, 562-63 (1875) (substitution of improved paper for paper or linen in shirt collars); cf. *Brown v. Piper*, 91 U.S. 37 (1875) (new use of ice cream freezer to freeze fish). Before *Hicks v. Kelsey*, the only Supreme Court reference to *Hotchkiss* occurs in the dissenting opinion in *Winans v. Denmead*, 56 U.S. (15 How.) 330, 345 (1853), where it was urged that the claim at issue for the use of "the conical form" in the body of a railroad car for transporting coal was invalid as a double use. No question of validity was presented in *Winans v. Denmead*, which turned on the issue of claim construction and application of the doctrine of equivalents.

292. See *infra* note 301. Patents were invalidated on other grounds. See *Phillips v. Page*, 65 U.S. (24 How.) 164, 166-67 (1860) (overclaiming and new use, with the indication that if the particular changes in the construction of the old machine had been properly claimed, the patent might have been sustained); *Jones v. Morehead*, 68 U.S. (1 Wall.) 155, 163 (1863) (sole claim infringed was anticipated); *Burr v. Duryee*, 68 U.S. (1 Wall.) 531 (1863) (process claims anticipated); cf. *Stimpson v. Baltimore & Susquehanna R.R.*, 51 U.S. (10 How.) 329, 345 (1850) (apparently simple combination of prior art grooved rails depressed to the level of the pavement surface held not infringed by different combination).

293. See *Hogg v. Emerson*, 52 U.S. (11 How.) 587 (1850); *Le Roy v. Tatham*, 63 U.S. (22 How.) 132 (1859); cf. *Le Roy v. Tatham*, 55 U.S. (14 How.) 156 (1852); *Seymour v. McCormick*, 60 U.S. (19 How.) 96 (1856); *Mowry v. Whitney*, 81 U.S. (14 Wall.) 620 (1871).

294. 78 U.S. (11 Wall.) 516 (1870).

295. *Id.* at 527.

and it actually produces a new and useful result, then a patent may be granted for the same, and it will be upheld as a patentable improvement."²⁹⁶

Lower courts and commentators continued to consider the degree of skill required legally immaterial.²⁹⁷ Obviousness, when it was considered at all, was a factor to be taken into account under the substantial novelty standard,²⁹⁸ particularly in applying the doctrine of equivalents in infringement determinations.²⁹⁹ Only after the Civil War was non-

296. *Id.* at 548.

297. See *Clark Patent Steam & Fire Regulator Co. v. Copeland*, 5 F. Cas. 987 (C.C.S.D.N.Y. 1862) (No. 2,866), where Judge Shipman charged the jury, "[w]ith regard to the *degree* of mental labor and inventive skill required in the work of invention, the law has no nice or rigid standard. There must be *some* inventive skill exercised, but the *degree* of that skill is not material." *Id.* at 990 (emphases in original). In accordance with this minimal skill requirement, the court considered that the patent at issue was valid unless the change made was "so obvious that it required no invention or labor of thought to make that change." *Id.* See also, *Adams v. Edwards*, 1 F. Cas. 112, 113 (C.C.D. Mass. 1848) (No. 53).

298. Curtis denied that the "apparent amount of skill, ingenuity or thought exercised" should be taken into account in determining sufficiency of invention. G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 41, at 31 (4th ed. 1873). Adhering to the rule of *Earle v. Sawyer*, 8 F. Cas. 254 (C.C.D. Mass. 1825) (No. 4,247), but reflecting on the increasing number of cases discussing the presence or absence of the "inventive faculty," he harmonized these disparate requirements in what could be termed a "minimal nonobviousness" standard as "one test by which we can determine whether there is a substantial novelty in the alleged invention, as compared with what existed before." G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS §§ 31-32, at 24-25. According to this test,

[w]hile the law does not look to the mental process by which the invention has been reached, but to the character of the result itself, it may still require that the result should be such as not to exclude the possibility of some skill or ingenuity having been exercised. . . . If . . . the character of the alleged invention be such that no design or study could possibly have been exercised in its production, then its character tends strongly to show that it does not differ substantially from what had been produced before; or that it is frivolous and immaterial. While therefore, the law does not regard the process by which an invention has been produced as a decisive test of its patentable qualities, it is often necessary to see whether the character of the invention excluded the possibility of thought, design, ingenuity or labor having been exercised in its production, or exercised to any considerable extent.

Id. See also, G. CURTIS, TREATISE ON THE LAW OF PATENTS FOR USEFUL INVENTIONS § 6, at 6 (1st ed. 1849). This test of minimum effort or skill was essentially the criterion proposed by the patentees and rejected by the trial court in *Hotchkiss* and applied in *Clark Patent Steam & Fire Regulator Co. v. Copeland*, 5 F. Cas. 987, 990 (C.C.S.D.N.Y. 1862) (No. 2,866).

299. As the *Hotchkiss* dissent urged, this had been the traditional application of the ordinary skill standard. *Hotchkiss*, 52 U.S. at 269. The ordinary skill standard had been applied as a measure of infringement under the doctrine of equivalents by Justice Nelson, author of the majority opinion in *Hotchkiss*. See *Wilbur v. Beecher*, 29 F. Cas. 1181, 1186-87 (C.C.N.D.N.Y. 1850) (No. 17,634); *Many v. Jagger*, 16 F. Cas. 677, 683 (C.C.N.D.N.Y. 1848) (No. 9,055).

obviousness regularly applied by courts as a general condition of patentability,³⁰⁰ with the requirement to sustain the patentability of any invention as the exercise of more than the ordinary skill of a mechanic.³⁰¹ Indeed, as late as 1882, the Court had to remind counsel that obviousness could be raised as a general defense to patent validity.³⁰² Apart from the late appearance of any constitutional requirement of minimum difference beyond novelty as a condition for patent validity, the statutory standard applied before *Hotchkiss* is itself inconsistent with any conception of nonobviousness as a fundamental requirement in early United States patent law. Prior to *Hotchkiss*, the Supreme Court had never invalidated a patent on the basis of insufficient difference beyond novelty. In determining patentability, both the lower courts and commentators considered legally immaterial the degree of skill necessary to produce an invention based upon the disclosure of the prior art. Neither the statutory

300. This conclusion does not ignore the few relatively clear statements of the patentable invention standard as requiring for patent validity the exercise of more skill or ingenuity than that possessed by the ordinary mechanic. See *Teese v. Phelps*, 23 F. Cas. 832, 834 (C.C.N.D. Calif. 1855) (No. 13,819) (citing *Hotchkiss* for rule); *Larabee v. Cortlan*, 14 F. Cas. 1136 (C.C.D. Md. 1851) (No. 8,084). As early as *Cochrane v. Waterman*, 5 F. Cas. 1145 (C.C.D.D.C. 1844) (No. 2,929), a district court had held claims to the substitution of a known mechanical equivalent unpatentable (i.e., the substitution of an endless screw to communicate motion to a cog wheel for a prior art pinion). However, the failure of the Supreme Court to apply this test to patents for combinations of old elements, even in cases containing a clear description of the prior art (after obviousness had been sustained as a defense below), demonstrates that nonobviousness was not established as a general requirement for patentability until the 1870's. See *Seymour v. Osborne*, 78 U.S. (11 Wall.) 516 (1870).

301. The first post-*Hotchkiss* Supreme Court case to suggest that a patent was invalid on the basis that the difference between the invention and the prior art "required no invention" and "involved simply mechanical skill, which is not patentable" was *Stimpson v. Woodman*, 77 U.S. (10 Wall.) 117, 121 (1869). There a machine for pebbling leather differed from a prior art machine only in using a roller with a figured surface for pebbling the leather, while the prior art machine employed a smooth roller for this purpose. A figured roller was old in the art, and the majority suggested that such a substitution would be unpatentable. *But see* Justice Clifford's later opinion for the Court in *Seymour v. Osborne*, 78 U.S. (11 Wall.) 516 (1870).

The patentable invention standard was further developed in the aggregation cases, including *Hailes v. Van Wormer*, 87 U.S. (20 Wall.) 353, 368, 374 (1873), although this case was not expressly based upon an obviousness determination. The ascendancy of the obviousness criterion was assured by the broad statement of the invention requirement in *Union Paper Collar Co. v. Van Dusen*, 90 U.S. (23 Wall.) 530, 562 (1874) and *Reckendorfer v. Faber*, 92 U.S. 347, 356 (1875), both citing *Hotchkiss* and equating invention under the patent statutes with the exercise of skill beyond the merely mechanical. The non-obviousness requirement was consistently applied from that time on to invalidate increasing numbers of patents. See, e.g., *Dunbar v. Myers*, 94 U.S. 187, 197 (1876); *Pearce v. Mulford*, 102 U.S. 112, 118 (1880); *Atlantic Works v. Brady*, 107 U.S. 192 (1882); *Slawson v. Grand Street R.R.*, 107 U.S. 649 (1882).

302. In *Slawson v. Grand Street R.R.*, 107 U.S. 649, 652 (1882), the Court permitted obviousness to be raised on *certiorari* over the objection that it had not been pleaded as a defense below.

requirement of substantial novelty, nor the subsidiary tests of validity applied by the courts, required consideration of the obviousness of an invention. In the first eighty years of United States patent law, non-obviousness was not recognized as a general statutory prerequisite of patentability.

V

Constitutional Parochialism

This chronicle of the most important statutory and judicial events in the early history of United States patent law provides a sufficient basis for critical evaluation of the Court's historical postulates and methodology in *Graham v. John Deere Co.*³⁰³ In the effort to determine the original meaning of a constitutional term, as in any legal history, a *sine qua non* is consideration of the most coherent and persuasive available data, contained in statutes and published decisions. In *Graham*, the Court was able to posit a climate in which the framers, suspicious of a history of abuse by the English crown in the sixteenth and seventeenth centuries,³⁰⁴ intended to combine "both a grant of power and a limitation" in the patent clause. The Court could reach such a conclusion only by ignoring the actual history of the early patent acts and their frequent construction by the Supreme Court and its justices on circuit.³⁰⁵ The Court's sole reliance on Jefferson's often-changing views illustrates the principal flaw in its historical methodology. This flaw represents an extreme eclecticism that fails to consider either the views of Jefferson's contemporaries or the extensive early consideration by the courts of the patent power and its limitations. The legal evidence is uncontradicted that in rejecting Jefferson's proposals, including a statutory nonobviousness standard,³⁰⁶ the second Congress disavowed the proposition that a high standard of patentability was required by the plain meaning of the patent clause or by the original intent of the constitutional framers. After the 1793 Act abolished the requirement of substantive examination, the courts similarly failed to discover any constitutional or statutory requirement beyond substantial novelty for patent validity. The theory that non-obviousness was required for a patentable invention did not surface in the United States courts until 1825. Even then, Justice Story's detailed

303. 383 U.S. 1 (1966).

304. *Id.* at 5.

305. *Id.*

306. See *supra* notes 68-69 and accompanying text.

refutation in *Earle v. Sawyer*.³⁰⁷ was sufficient to lay this incongruous and metaphysical notion to rest until after the Civil War. The available evidence from legal history unequivocally suggests that no framer considered the patent clause as including any requirement beyond novelty for patentability, or as permitting the judiciary to impose such a requirement.

The second historical pillar of the *Graham* opinion, that the patent clause was written in reaction to and against the backdrop of the English abuse of monopolies, crumbles when subjected to historical examination. The Court elaborated its theory that a constitutional nonobviousness requirement was historically rooted in an antipathy to the patent grant:

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.³⁰⁸

Even brief consideration of English history strongly suggests the opposite conclusion. The Statute of Monopolies was enacted in 1624,³⁰⁹ and the appropriate "backdrop" must include not only English law at the time of the Plymouth landing but also English patent practice almost two hundred years later at the beginning of the Industrial Revolution. Long after the Statute of Monopolies, the Crown continued to grant patents not only to "inventors" in the modern sense, but also to importers of new and useful articles, i.e., to those who *a fortiori* exercised no inventive skill or effort in their production.³¹⁰ This practice continued after the adoption of

307. 8 F. Cas. 254 (C.C.D. Mass. 1825) (No. 4,247).

308. *Graham*, 383 U.S. at 5. A comparison with the Court's reliance upon general English sentiment in prior centuries in *O'Callahan v. Parker*, 395 U.S. 258 (1969), is instructive. See *supra* notes 14–20 and accompanying text.

309. 21 Jac. I ch. 3 (1623–24).

310. See the famous statement by counsel in *Darcy v. Allin* (1602), Noy Rep. 173 (1669):

[W]here any man by his own charge and industry, or by his own wit and invention, doth bring any new trade into the realm, or any engine tending to the furtherance of a trade, that never was used before, — and that for the good of the realm — that in such cases the king may grant him a monopoly patent for some reasonable time, until the subjects may learn the same, in consideration of the good that he doth bring by his invention to the Commonwealth, otherwise not.

the intellectual property clause, and Justice Story distinguished English from American law precisely on this basis.³¹¹

The English background suggests that under the intellectual property clause Congress might have the power to grant "monopoly" rights, as in England, to those who merely imported rather than invented a useful article. In English legal practice during this period, the terms "inventor" and "importer" were used interchangeably in many instances.³¹² No less a founder than George Washington encouraged the first Congress to consider "the expediency of giving effectual encouragement, as well to the introduction of new and useful inventions from abroad, as to the exertions of skill and genius in producing them at home."³¹³ Indeed, unless Jefferson himself considered that the powers granted to Congress by the intellectual property clause were broad, his insistence on their limitation by further amendment is problematic. Apart from restricting the duration of exclusive rights to a definite period, Jefferson's proposed article 9 would have limited the grant of rights to persons "for their own productions in literature, and their own inventions in the arts."³¹⁴ One clear effect of this provision would have been to restrict the power of Congress to grant exclusive rights to mere importers of useful discoveries. Considered in the context of English patent law, Jefferson's comments on the extant patent provision of the United States Constitution suggest that he, like Washington, entertained an expansive concept of the legislative power actually granted.

The further historical assumption in *Graham*, that a constitutional limitation on the patent power can be inferred from a general antipathy

311. Justice Story wrote:

How, indeed, can it be possible, that an English court should deem some intellectual labour, beyond the novelty of the combination, necessary for a patent, when it is the acknowledged law of England (different in that respect from our own), that the first importer of an invention, known and used in foreign parts, may be entitled to a patent as the inventor in England? . . . An inventor, in the sense of the English law, is the first maker, or constructor, or introducer, in England.

Earle v. Sawyer, 8 F. Cas. 254, 256 (C.C.D. Mass. 1825) (No. 4,247). At least with respect to obviousness, the relevance of the English background to the discussion of early American patent law is marginal, and has been omitted in the present study.

312. *Id.* See generally, Prager, *Standards of Patentable Invention from 1474 to 1952*, 20 U. CHI. L. REV. 69, 70 (1952) (citing Hulme, *History of the Patent Law*, 18 L. Q. REV. 280 (1902)); Cooper, *Some Ghosts of the Law*, 23 J. PAT. OFF. SOC'Y 319 (1941); Daniell, *Inventions and Invention*, 11 JURID. REV. 151 (1899).

313. 1 ANNALS OF CONGRESS 993 (Jan. 8, 1790). See Federico, "The First Patent Act," 14 J. PAT. OFF. SOC'Y 237, 243 (1932).

314. See *supra* note 62.

to monopoly among the framers,³¹⁵ is similarly belied by the early history of the patent acts. There was no appreciable general hostility to patents as "monopolies" in the early decades of the Republic, when the judiciary routinely and meticulously distinguished the patent grant from odious monopolies largely on the basis that the patent clause commanded judicial solicitude for this legal manifestation of "sacred" rights of property.³¹⁶

The "history" presented in *Graham* is a highly selective account illustrating an inherent weakness in the Court's methodology. Without dissent, the Court failed even to consider the most concrete evidence of history, contained in its own copious early precedent. By basing its analysis on the privately expressed personal views of a single historical figure and by extending those views to the historical American populace in general, the Court acted as if it were in possession of an eighteenth-century opinion poll without margin for error. This dubious basis for judicial decision is manifestly insufficient for suggesting a historically discernible limitation on the intellectual property power, which on its face is as plenary as the remaining enumerated legislative powers.

Whatever the pertinence of the expectations and assumptions of the actual framers of constitutional provisions, a basic disregard for historical facts deprives *Graham* of any claim to historical accuracy, and points to serious limits on the use of extrinsic history in defining constitutional norms. It has been suggested that judicial eclecticism is a structural flaw resulting from the adversary character of litigation.³¹⁷ As Tushnet observes, when historical inquiry is conducted by advocates charged with the adversary ethic, "[t]he standard criticism is that lawyers are bad historians because they overemphasize fragmentary evidence and minimize significant bodies of conflicting or complicating evidence in the service of their partisan goals."³¹⁸ While he concludes that interpretivism "need not rest on that sort of bad history,"³¹⁹ it is unclear how courts are to avoid this evil in practice. Lawyers typically have no formal historical training that would provide a basis for critical examination of historical sources or their interpretation,³²⁰ or for questioning the

315. *Graham*, 383 U.S. at 6.

316. See *supra* notes 136-51 and accompanying text.

317. See, e.g., Kelly, *Clio and the Court: An Illicit Love Affair*, 1965 SUP. CT. REV. 119, 155-58.

318. Tushnet, *Following the Rules Laid Down: A Critique of Interpretivism and Neutral Principles*, 96 HARV. L. REV. 781, 793 (1983).

319. *Id.*

320. This trend is unlikely to be reversed, if Gordon is correct in concluding that "legal history and the sociology of law have become marginal subspecialties in American law curricula. . . ." Gordon, *Historicism in Legal Scholarship*, 90 YALE L. J. 1017, 1051 (1981).

"universalizing" tradition of doctrinal analysis.³²¹ As the length of the previous two sections might indicate, judges cannot be expected to develop an adequate chronology, much less provide an adequate interpretation of the historical record in the procedural confines of litigation.³²² Further, the briefs and the briefing schedule are too short to permit more than cursory consideration of historical questions and sources.³²³ Finally, even if historiographical precepts were carefully followed, such analytical methods are unlikely to provide an unambiguous basis for reaching a decision in a concrete dispute between parties.³²⁴

Each of these factors tends to detract significantly from the reliability of historically-based decisions. Reliance upon dispassionate scholarly consideration is unlikely to remedy this deficiency. As Brest admits, "most of our writings are not political theory but advocacy scholarship—amicus briefs ultimately designed to persuade the Court to adopt our various notions of the public good."³²⁵ Moreover, because most scholarly commentary is undertaken in response to significant court decisions, it is unlikely to address highly pertinent historical considerations when they are most needed, at the time the questions are first presented to the Court.

Even if highly selective reconstructions of historical fact could be avoided in the judicial process, the elimination of eclecticism would not overcome a second, more fundamental objection. The difficulty posed by "historicism," i.e., "the perspective that the meanings of words and actions are to some degree dependent on the particular social and historical conditions in which they occur,"³²⁶ is acute in the case of legal terms, as the patent history illustrates. Although the patent statutes have uniformly required that an invention be new and useful for a valid patent to issue, the concept of novelty has narrowed significantly from its original

321. See generally Horwitz, *The Historical Contingency of the Role of History*, 90 YALE L. J. 1057 (1981) ("By and large, the dominant tradition in Anglo-American legal scholarship today is unhistorical. It attempts to find universal rationalizing principles.").

322. In the 1985–86 term, the nine justices of the Supreme Court had 5158 cases on their docket. 55 U.S.L.W. 3038 (July 29, 1986).

323. For the 171 cases accorded full Supreme Court review in the same term (argued and submitted), briefs on the merits were limited to 50 printed pages (Sup. Ct. Rule 34.3), and were due 45 days after the order granting *certiorari* or noting probable jurisdiction (Sup. Ct. Rule 35.1).

324. Tushnet continues, "the difficulty goes deeper. . . . The universal experience of historians . . . belies the interpretivists' expectations. Where the interpretivist seeks clarity and definiteness, the historian finds ambiguity." Tushnet, *supra* note 318, at 793. By revealing the essential contingency of legal concepts, historical analysis introduces a principle of uncertainty: the more closely terms are investigated, the less definite and constant their meanings become.

325. Brest, *The Fundamental Rights Controversy: The Essential Contradictions of Normative Constitutional Scholarship*, 90 YALE L. J. 1063, 1109 (1981).

326. Gordon, *Historicism in Legal Scholarship*, 90 YALE L. J. 1017 n.1 (1981).

meaning of "substantial novelty," which required a doctrine of equivalents analysis.³²⁷

George Washington,³²⁸ Justice Story³²⁹ and Justice Douglas³³⁰ had radically different conceptions of the meaning of the constitutional term "inventor." Similarly, the statutory requirement of an "invention" has metamorphosed from simple substantial novelty³³¹ to include a requirement of skill greater than that possessed by the average mechanic in the art.³³² This standard was followed by the heightened requirement that an invention disclose the "flash of creative genius,"³³³ and afterward was formulated into the current essentially neutral term expressing the requirement of statutory subject matter.³³⁴ For this reason, any historical patentability requirement must be considered carefully in the context of the original expression and its relation to particular facts. A serious question exists as to whether *Hotchkiss*,³³⁵ the "cornerstone" of the modern nonobviousness requirement,³³⁶ was intended to express anything more than an application of the early bar on "double use" patents.³³⁷ The author of the opinion apparently failed to appreciate that *Hotchkiss* announced a new and fundamental "general condition of patentability,"³³⁸ contrary to the assumption in *Graham*.³³⁹

Perhaps the most egregious recent example of judicial "[f]ailure to recognize the difference between modern and circa-1800 usage"³⁴⁰ is Justice Douglas' interpretation of the word "science" appearing in the intellectual property clause. In *A & P*,³⁴¹ his concurring opinion with Justice Black explained,

Every patent is the grant of a privilege of exacting tolls from the public. The Framers plainly did not want those monopolies freely granted. The invention, to justify a patent had to serve the ends of science—to push back the frontiers of

327. See *supra* notes 205–31 and accompanying text.

328. See *supra* note 313 and accompanying text.

329. See *supra* notes 191, 194, 311 and accompanying text.

330. See *supra* note 85, *infra* note 333.

331. See *supra* notes 205–31 and accompanying text.

332. See *supra* note 301.

333. *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U.S. 84 (1941).

334. See *supra* note 91.

335. *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248 (1851).

336. *Graham*, 383 U.S. at 11.

337. See *supra* note 291 and accompanying text.

338. See *supra* notes 277–90 and accompanying text.

339. *Graham*, 383 U.S. at 11.

340. Powell, *The Original Understanding of Original Intent*, 98 HARV. L. REV. 885, 896 n. 56 (1985).

341. 340 U.S. 147 (1950).

chemistry, physics and the like; to make a distinctive contribution to scientific knowledge. . . . It is not enough that an article is new and useful. The Constitution never sanctioned the patenting of gadgets. Patents serve a higher end—the advancement of science.³⁴²

Evidently, this view is based on a reading of the intellectual property clause that makes the purpose of the patent power "to promote the progress of science." Apart from the dubious merits of including the promotion of "science" in the patent clause,³⁴³ Justice Douglas fashions an entirely unprecedented standard of patentability based on an evident misunderstanding of the term "science" as referring to the present-day natural sciences, such as chemistry and physics, to the exclusion of the useful arts. According to this view, patentability of an invention does not depend upon the objective differences between the invention and the prior art, but rather upon the subjective determination of whether the invention makes "a distinctive contribution to scientific knowledge"³⁴⁴ or whether it is a "gadget" that has "no place in the constitutional scheme of advancing scientific knowledge."³⁴⁵ Philological studies³⁴⁶ demonstrate that the original understanding of the term "science" was approximately coextensive with "knowledge" in general, such as "the seven liberal arts."³⁴⁷ Its original meaning would not have been limited to the modern natural sciences, which were then referred to collectively as "natural history"³⁴⁸ or simply "philosophy."³⁴⁹

While this is an extreme illustration of judicial projection of current

342. *Id.* at 154.

343. *See supra* note 36.

344. 340 U.S. at 154.

345. *Id.* at 156. The outrage of the patent bar at this misstatement was typified by the comment that "[t]his was about as clearly wrong as a judicial opinion on an intricate matter can possibly be. It was based on a complete disregard for the constitutional promotion of the useful arts." Prager, *Standards of Patentable Invention from 1474 to 1952*, 20 U. CHI. L. REV. 69, 86 (1952).

346. *See, e.g.,* Seidel, *The Constitution and a Standard of Patentability*, 48 J. PAT. OFF. SOC'Y 5, 9-17 (1966); Lutz, *Patents and Science—A Clarification of the Patent Clause of the United States Constitution*, 18 GEO. WASH. L. REV. 50 (1949).

347. Pope's enumeration of the "sciences" of "grammar, rhetorick, logick, arithmatick, musick, geometry, astronomy," is quoted in JOHNSON, *A DICTIONARY OF THE ENGLISH LANGUAGE* (1818), s.v. 4.

348. *See* THE OXFORD ENGLISH DICTIONARY (1971), s.v. "history," 5 ("A systematic account (without reference to time) of a set of natural phenomena, as those connected with a country, some division of nature or group of natural objects, a species of animals or plants, etc. . . . [In this sense following the similar use of *ιστορία* by Aristotle and other Greek writers, and of *historia* by Pliny]").

349. *Id.* s.v. "philosophy" 3 ("(= *natural philosophy*.) The knowledge or study of nature, or of natural objects and phenomena: 'natural knowledge': now usually called *science*").

concepts into the past without consideration of whether they fit the context, it illustrates a profound underlying parochialism. The universalizing bias of conventional legal analysis³⁵⁰ fosters, if it does not require, a judicial tendency to live in an eternal conceptual present, even when judges ostensibly construe the Constitution by reference to plausible "history." However, precisely because of their abstraction, legal terms and concepts are creatures of their time, manifestations of a particular *Zeitgeist*.³⁵¹

A more pervasive historical failure of the Court than its simple failure to develop the facts has been the absence of significant consideration of the context in which original terms were conceived and used. Even if it could be demonstrated conclusively that the framers had approved of Jefferson's views regarding the desirability of a nonobviousness requirement, would this conclusion from an age in which patentable subject matter was largely confined to churns, mills, matches, harnesses and sundries be historically relevant to an age in which patentable subject matter includes monoclonal antibodies, new animal varieties, and semiconductor chip designs? The former classes have the characteristic that once the invention is conceived, production is largely mechanical and can be accomplished with minimal research and development investment. In this context, the requirement of nonobviousness and emphasis on mental "conception" may provide a reasonable method of distinguishing patentable from nonpatentable subject matter. However, in the cases of monoclonal antibodies, new plant or animal varieties produced by genetic engineering or mutation, and design layouts for semiconductor chips, a conception may be obvious to one of ordinary skill in an art populated by Ph.D. researchers, while the execution of the concept requires years of labor and millions of dollars of design investment.³⁵² Judges who

350. See sources cited *supra* note 321.

351. Tushnet assents:

[T]he contents or meanings of beliefs and intentions are shaped by the entire societal context in which those beliefs and intentions arise and that they in turn alter. When interpretivists presume that they can detach the meanings that the framers gave to the words they used from the entire complex of meanings that the framers gave to their political vocabulary as a whole and from the larger political, economic and intellectual world in which they lived, interpretivists slip into the error of thinking that they can grasp historical parts without embracing the historical whole.

Tushnet, *Following the Rules Laid Down: A Critique of Interpretivism and Neutral Principles*, 96 HARV. L. REV. 781, 797 (1983).

352. This was a principal reason for enactment of the Semiconductor Chip Protection Act of 1984, 17 U.S.C. §§ 901-14 (Supp. IV 1986). The House Report concluded that patent and copyright law offer little protection against misappropriation of layout designs:

Patent law can protect the basic electronic circuitry for new microprocessors or

fulminate against the patentability of "gadgets" should not derive *constitutional* limitations appropriate for doorknobs that may in practice retard or eliminate progress in the most advanced technological arts. As Justice Story warned in *Martin v. Hunter's Lessee*:³⁵³

The constitution unavoidably deals in general language. It did not suit the purposes of the [framers] to provide for minute specifications of its powers, or to declare the means by which those powers should be carried into execution. It was foreseen that this would be a perilous and difficult, if not impracticable, task. The instrument was not intended to provide merely for the exigencies of a few years, but was to endure through a long lapse of ages, the events of which were locked up in the inscrutable purposes of Providence. It could not be foreseen what new changes and modifications of power might be indispensable to effectuate the general objects of the charter; and restrictions and specifications, which, at the present, might seem salutary, might, in the end, prove the overthrow of the system itself. Hence, its powers are expressed in general terms, leaving to the legislature, from time to time, to adopt its own means to effectuate legitimate objects, and to mould and model the exercise of its powers, as its own wisdom, and the public interests, should require.³⁵⁴

other new such products. But patent law does not protect the particular layouts and design work by the different chip manufacturers in adapting those electronic circuits for a particular industrial purpose, because the creativity involved does not rise to the inventive level required by the patent laws. Yet, it is those layouts and design works that consume the resources of the innovating firms and that are copied by free riders.

H.R. REP. NO. 781, 98th Cong., 2d Sess. 3, *reprinted in* 1984 U.S. Code Cong. & Admin. News 5759, 5752. The Senate agreed that patent protection for chips is "neither adequate nor always appropriate" and that "[a]s a practical matter, the layout of a chip, as embodied in a mask, will rarely, if ever, satisfy this standard of invention. A chip may be the product of millions of dollars and thousands of hours effort, but it is the result of hard work, not 'invention.'" S. REP. NO. 425, 98th Cong., 2d Sess. 8 (1984).

353. 14 U.S. (1 Wheat.) 304 (1816).

354. *Id.* at 326-27.

VI

CONCLUSION

Apart from philosophical questions of the ultimate validity of history as a source of authority in constitutional construction, the "framers" invoked by the Court in *Graham* are not historical figures involved in the drafting of the Constitution, but mythopoeic creations summoned to dignify and to elevate to constitutional status the personal, social and economic theories of individual justices. The "history" propounded in *Graham* is highly eclectic and illustrates various fallacies to which purportedly historical analyses by the Court are subject. Even if a court could discover and consider the full spectrum of statements and opinions historically expressed, the "facts" discovered will be historically contingent upon expectations and assumptions that escape judicial notice. Any effort to isolate the general sentiment of a historical era is probably beyond the particular competence of judges in the adversary context. Because of the radically different assumptions about the nature of law and its interpretation in previous eras, it is perilous for advocates or judges to attempt to rely directly upon general history as a guide to constitutional construction.

At best, as an institution working within the confines of the adversary process, the Court is inherently parochial and lacks the resources and training to perform adequate historical research outside the confines of case precedent or legislative history. At worst, the Court's manipulation of history raises significant doubt as to the utility of extrinsic sources in answering questions of constitutional construction. Whether or not eclecticism is an inherent flaw of the adversary system, it should at least make history a suspect basis for constitutional decision.