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"WITHIN THE LIMITS OF THE CONSTITUTIONAL GRANT": CONSTITUTIONAL LIMITATIONS ON THE PATENT POWER

Edward C. Walterscheid*

I. INTRODUCTION

Congressional authority to legislate concerning patents is derived from the constitutional grant of power set forth in the following language: "Congress shall have Power ** To promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries." For convenience sake, I will refer to this language as the Patent Clause or simply the Clause. In 1966, in Graham v. John Deere Co. the Supreme Court declared that the Patent Clause "is both a grant of power and a limitation." The Court was speaking in the context of its view that the Clause contains an inherent constitutional standard of invention that must be met in order for an invention to be patentable, but at the same time it indicated that the Clause precludes Congress from authorizing "the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already publicly available." In 1989, the Court reiterated these points, and noted a further

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2 383 U.S. at 5.

3 That standard is addressed in the text accompanying infra notes 120-66.

4 383 U.S. at 6. This view that the Patent Clause absolutely precludes Congress from issuing patents that "remove existent knowledge from the public domain" is more restrictive than that held by the Court in the first half of the nineteenth century. In 1815, the Court upheld the validity of an act of Congress authorizing the reissue to Oliver Evans for an additional term of 14 years a patent that had expired three years earlier. See Evans v. Jordan, 13 U.S. (9 Cranch) 199 (1815). Based on such authority, through much of the nineteenth century term renewals and extensions authorized after the original patent had expired and the subject matter was in the public domain were judicially upheld. See, e.g., Agawam Woolen Co. v. Jordan, 74 U.S. (7 Wall.) 583 (1868); Blanchard v. Sprague, 3 F. Cas. 648, 650 (C.C.D. Mass. 1839) (No. 1,518).
limitation, namely, that "Congress may not create patent monopolies of unlimited duration."\(^5\)

The Court has thus made clear that there are constitutional limitations on the patent power of Congress. In setting standards or conditions for patentability, Congress may be more restrictive than the limitations set by the constitutional language,\(^6\) but it may not avoid or ignore those limitations. Phrased differently, there are requirements set forth in the Patent Clause which Congress must conform to in enacting patent legislation. Care must be taken to distinguish clearly between standards for patentability and patentable subject matter because they are not the same thing at all. While there are clearly constitutional requirements that must be met in setting standards of patentability, the nature of any constitutional restrictions on patentable subject matter is less clear.

The purpose of this article is to delineate and analyze the limitations placed on the patent power of Congress by the Patent Clause. It is useful to begin with the views expressed by Chief Justice Marshall first in *Marbury v. Madison*\(^7\) in 1803 and later in 1824 in *Gibbons v. Ogden*.\(^8\) In *Marbury* he noted that "[i]t cannot be presumed, that any clause in the constitution is intended to be without effect,"\(^9\) and then declared:

The powers of the legislature are defined and limited; and that those limits may not be mistaken or forgotten, the constitution is written. To what purpose are powers limited, and to what purpose is that limitation committed to writing, if these limits may, at any time, be passed by those intended to be restrained? The distinction between a


\(^4\) The reason is that nothing in the Constitution requires Congress to issue patents, so it can be as highly restrictive as it chooses in setting the conditions for patentability. See *Mast, Foos, & Co. v. Stover Mfg. Co.*, 177 U.S. 485, 494 (1900) (stating that Congress, having created the monopoly, may put such limitations upon it as it pleases).

\(^7\) 5 U.S. (1 Cranch) 137 (1803).

\(^8\) 22 U.S. (9 Wheat.) 1 (1824).

\(^9\) 5 U.S. at 174. In 1822, President Monroe would make the same point, saying: "no part of the Constitution can be considered useless; no sentence or clause in it without a meaning." James Monroe, Views of the President of the United States on the Subject of Internal Improvements (May 4, 1822) in 2 *MESSAGES AND PAPERS OF THE PRESIDENTS, 1789-1908* 144, 163 (James D. Richardson, ed., 1909). I am indebted to Daniel Preston for bringing this paper by President Monroe to my attention.
government with limited and unlimited powers is abolished, if those limits do not confine the persons on whom they are imposed, and if acts prohibited and acts allowed are of equal obligation.10

The import of this is that powers are both granted and limited in the Constitution, and that limitations may not be ignored.

In Gibbons he emphasized his opposition to any narrow construction of the enumerated powers but went on to state:

[T]he enlightened patriots who framed our constitution, and the people who adopted it, must be understood to have employed words in their natural sense, and to have intended what they said. If from the imperfection of human language, there should be serious doubts respecting the extent of any given power, it is a well settled rule, that the objects for which it was given, especially when those objects are expressed in the instrument itself, should have great influence in the construction. ** ** We know of no rule for construing the extent of such powers, other than is given by the language of the instrument which confers them, taken in connexion with the purposes for which they were conferred.11

In the context of the Patent Clause, these views have added significance, for they clearly indicate that in 1824 the Court was of the view that a statement of purpose or objects "should have great influence" on its interpretation. Phrased somewhat differently, the statement of purpose, i.e., "to promote the progress of . . . useful arts," constitutes a limitation on the extent or scope of the patent power which must be taken into account when interpreting it. I shall have cause to return to this important point.

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10 5 U.S. at 176.
11 22 U.S. at 188-89.
II. CONGRESSIONAL DISCRETION

In the nineteenth century, the Supreme Court on a number of occasions set forth inconsistent views on the scope of congressional authority to set the terms and conditions of patents. In this regard, several opinions suggested that congressional power under the Patent Clause was plenary, i.e., without qualification. Thus, for example, in 1843 in *McClurg v. Kingsland* the Court stated “the powers 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.” In 1899, it declared:

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 best calculated to effect the object."

Unfortunately, in making these pronouncements, the Court let itself be carried away by its rhetoric, for the power of Congress respecting patents is not plenary, but rather is qualified and restricted by certain express language of the Patent Clause as well as such other constitutional limitations as may exist. Thus, on several other occasions in the nineteenth century,

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13 42 U.S. (1 How.) 202, 206 (1843).
15 Nonetheless, the idea that the patent power, if not plenary, was the next thing to it was commonplace in the nineteenth century. Thus, for example, in his magisterial patent treatise published in 1890, Robinson states:

The authority thus conferred on Congress [by the Patent Clause] is unrestricted as to the method of its exercise. The subject of the exclusive right must be a writing or discovery of the person to whom the right is granted, and the period during which
it had expressly recognized this to be the case. For example, in 1829 in *Pennock v. Dialogue* it declared that the constitutional language "contemplates . . . that [the] exclusive right shall exist but for a limited period." In 1856 it held that the power granted to Congress by the Clause "is domestic in its character, and necessarily confined within the limits of the United States." In 1878 it held that the exclusive property right authorized by the Clause and encompassed within the patent grant does not preemp the authority of a state to regulate the sale of patented material under the reasonable exercise of its police power. Despite these cases, one modern commentator still argues that there was an "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." What there was early on was a less than critical analysis of the qualified nature of the power actually granted to Congress.

The *Graham* Court sought to avoid any such impression by citing to *Gibbons* in stating that "[w]ithin the limits of the constitutional grant, the Congress may, of course, implement the stated purpose of the Framers by selecting the policy which in its judgment best effectuates the constitutional aim." In addition, it cited to *McClurg* in support of its view that "[w]ithin the scope established by the Constitution, Congress may set out conditions and tests for patentability." While this latter statement is clearly correct, it is not supported by *McClurg* where the Court stated that the congressional patent power was plenary, i.e., unqualified or unlimited.

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The emphasized language above clearly indicates that while Congress has discretion to set the terms and conditions of patentability, that discretion is not unbounded but rather is constrained by "the limits of the constitutional grant." Nonetheless, the Graham Court would have better served all concerned by simply acknowledging that the views expressed in McClurg were overbroad, and then emphasizing that the congressional patent power of necessity is qualified by the language of the Patent Clause. Be that as it may, if the patent power is not plenary, what are the constitutional limitations on that power?

III. LIMITATIONS ON THE PATENT POWER

The Graham Court noted that the qualified authority given to Congress with regard to the issuance of patents "is limited to the promotion of advances in the 'useful arts.'" Consequently, "Congress in the exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose." It did not, however, provide any clear-cut explanation of the nature of those restraints or of the nature of any limitations on the patent power imposed by other language of the Patent Clause. Here, I consider in some detail what those restraints or limitations are and the extent to which they serve as a predicate for the statutory conditions for patentability set by Congress.

For terms that are so fundamentally important to the patent law, it is remarkable that the Supreme Court has never attempted to define what is meant by the terms "inventors" and "discoveries" as used in the Clause. Neither, for that matter, has Congress, although in the Patent Act of 1952

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23 383 U.S. at 6.
24 383 U.S. at 5 and 6.
25 The Court early on had an opportunity to address the meaning to be given to these terms but declined to do so. See Evans v. Eaton, 16 U.S. (3 Wheat.) 454, 513 (1818). Burchfiel suggests that Justice Black's dissent in Exhibit Supply Co. v. Ace Patents Corp., 315 U.S. 126, 137, 52 U.S.P.Q. (BNA) 275 (1942) is predicated "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 the invention." See Burchfiel, supra note 19, at 170. Justice Black had stated: "The Constitution authorizes the granting of patent privileges only to inventors who make 'discoveries.' * * * To call the device here an invention or discovery such as was contemplated by the Constitution...is, in my judgment, to degrade the meaning of those terms." 315 U.S. at 138. However, he did not attempt any definition of the meaning to be given to "inventors" and "discoveries" as used in the Constitution.
it did define "invention" to mean "invention or discovery." Aside from being more than a bit circular and vague, the congressional definition of "invention" ignores the fact that in the early republic there was a considerable dispute as to whether "discovery" and "invention" were to be considered synonymous. Moreover, the Framers seem not to have contemplated that the terms "inventors" and "discoveries" could—and would quickly—be viewed in a restrictive light by Congress and the courts.

A. A CONSTITUTIONAL QUID PRO QUO

The Patent Clause authorizes Congress to create a limited-term exclusive property right in inventors of patentable subject matter. It does not, however, provide any express indication of what, if anything, the inventor is required to do in return for this exclusive right. It is now commonplace to treat a patent as a contract between the inventor and the public as represented by the government, but this concept had yet to be developed at the time the Constitution was drafted in 1787.

27 It is akin to saying "a rose is a rose is a rose," but without the aesthetic value. According to Federico (who along with Giles Rich) was largely responsible for drafting the Patent Act of 1952, that Act was intended 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. P.J. Federico, Commentary on the New Patent Act, 35 U.S.C.A. § 1, 17 (1954). In this view, the terms "inventors" and "discoveries" as they appear in the Patent Clause have little or no relevance in the determination constitutionally of patentable subject matter.
28 In 1816 Oliver Evans, for example, argued strenuously that "discoveries" had a much broader meaning than "invention." As he put it:

"What ideas then do the terms invention or discovery, inventor or discoverer, as used in the patent laws, convey? They certainly are not synonymous, for may not a thing be discovered without invention? Certainly it can; a plant unknown may be discovered, or a new use of a known plant, by diligence and search, without invention. A new and useful principle or law in nature may, by expensive and laborious researches or experiments, be discovered, though the aid of invention may be necessary to apply them to useful purposes. A man may travel over Europe, Asia and Africa at great expense, on purpose to discover what improvements are in use there, "not known or used" in the United States, and in case he introduces them for the benefit of his country, did neither the framers of the constitution, nor congress, contemplate a reward for such expensive and patriotic labours to promote the welfare of his fellow citizens? Certainly they did intend to secure to the discoverers of things new and useful, in the United States, the exclusive right to their respective discoveries, for limited times.

OLIVER EVANS, EXPOSITION OF PART OF THE PATENT LAW BY A NATIVE BORN CITIZEN OF THE UNITED STATES 60-61 (1816).
The earliest known published statement that a patent represents a contract between the inventor and the public in the United States, or for that matter, Great Britain appears to have been made by Joseph Barnes in 1792 in Philadelphia. As he put it,

"a system for securing property in the products of genius, is a mutual contract between the inventor and the public, in which the inventor agrees, on proviso that the public will secure to him his property in, and the exclusive use of his discovery for a limited time, he will, at the expiration of such time, cede his right in the same to the public; thenceforth the discovery is common right, being the compensation required by the public, stipulated in the contract, for having thus secured the same."

Barnes implied that, under this contract thesis, the consideration for the grant was an enabling disclosure provided by the inventor in the form of a specification to the patent. The views expressed by Barnes were predicated on an at times subtle but nonetheless clear transition as the eighteenth century progressed in the British crown’s views on the consideration for the patent grant. Early in that century, it had been assumed that what the inventor gave in return for the exclusive grant was the working or practicing of the invention within the country. But the crown came increasingly to recognize that working the invention was an insufficient consideration for the grant, and that instead wider dissemination to the public in general should be the desideratum. Just

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29 It was not until the beginning of the nineteenth century that the English courts expressly set forth this view. Although Inlow contends that by about 1780 "the idea of the contract in the patent grant was being previewed," he cites no authority for this view and none has been found. He incorrectly states that "[t]he equitable concept of contract was first actually advanced by Lord Eldon in Cartwright v. Amatt in 1800." See E.G. INLOW, THE PATENT GRANT 63, 68 (1950). The correct reference should be to Cartwright v. Earner. No report of this case has been found, but it is mentioned in Harmer v. Playne, 11 East, Reports, 1 Abbott's P.C. 171 (K.B. 1809).

30 JOSEPH BARNES, TREATISE ON THE JUSTICE, POLICY, AND UTILITY OF ESTABLISHING AN EFFECTUAL SYSTEM OF PROMOTING THE PROGRESS OF USEFUL ARTS, BY ASSURING PROPERTY IN THE PRODUCTS OF GENIUS 25 (1792).

31 He argued that nothing more should be required of the inventor than an accurate specification and "[a] patentee's right in his patent shall cease, and be declared void . . . on proof being given of his not having specified the true means of producing the proposed effect." Id. at 32.
as importantly, the common law courts began to voice the same view. In 1787, it was argued that "[t]he consideration, which the patentee gives for his monopoly, is the benefit the public are to derive from his invention after his patent is expired: and that benefit is secured to them by means of a specification of the invention." By 1795 an English judge stated unequivocally that "[t]he specification is the price the patentee is to pay for the monopoly." In essence, there was a change in perception—from viewing the patent as a contract between the crown and the patentee to viewing it as a "social contract" between the patentee and society.

Clearly, the Patent Clause does not speak in terms of any consideration for the patent grant. But such is implicit in the introductory language of the Clause, to wit: "to promote the progress of . . . useful arts." Unless the patentee by some mechanism teaches how to make and use the invention to the public, there is no progress in the useful arts as a result of the grant. The question then becomes one of whether working or practicing the invention is constitutionally required or whether providing an enabling disclosure in the specification of the patent is sufficient to meet the object of promoting the progress of useful arts.

The issue was first brought before the Supreme Court in 1908 in Continental Paper Bag Co. v. Eastern Paper Bag Co. wherein it was argued that an injunction against patent infringement could not lay because non-use of the patent by its owner violated the constitutional purpose of promoting the progress of useful arts. For whatever reason, the Court declined to specifically address whether the statement of purpose in the Clause obligated a refusal to enjoin infringement, but instead held only that Congress had selected another policy and had continued that policy for a number of years. The Court simply assumed that such a policy had been beneficial and was appropriate.

Nonetheless, implicit in Continental Paper Bag was an assumption that the introductory language did not obligate Congress to assure that the

34 HAROLD I. DUTTON, THE PATENT SYSTEM AND INVENTIVE ACTIVITY DURING THE INDUSTRIAL REVOLUTION, 1750-1852 75 (Manchester 1984). However, it would not be until early in the nineteenth century that the common law courts would begin to expressly speak in terms of a patent being a contract.
35 210 U.S. 405, 422-23 (1908).
36 Id. at 429-30.
subject matter of a patent would be put in use or worked during the term of the grant of the exclusive right. A divided Court thereafter would make the point clear in Special Equipment Co. v. Coe, decided in 1945, by reversing a lower court opinion invalidating a patent on the ground that non-use was contrary to the constitutional purpose. The majority noted congressional awareness of non-use and that Congress could predicate patent validity upon use of the patented subject matter if it so chose. But, emphasized the majority, “it by no means follows” that a patent grant not so conditioned “is an inconsistent or inappropriate exercise of the constitutional authority of Congress ‘to promote the Progress of Science and useful Arts’ by securing to inventors ‘the exclusive Right to their . . . Discoveries.’” Rather, Congress “could have concluded that the useful arts would be best promoted” by the statutory requirement of a full disclosure of the invention and the manner of making and using it. In other words, it was not use but full disclosure in a published patent that could be viewed as conforming to the constitutional purpose.

A dissent by Justice Douglas argued that: “The purpose ‘to promote the progress of science and useful arts’ . . . provides the standards for the exercise of the power and sets the limits beyond which it may not go.” In his view, non-use was irreconcilable with this purpose. He seems to have been influenced in no small measure by his view that “[o]f the various enumerated powers it [the intellectual property clause] is the only one which states the purpose of the authority granted to Congress.” But even a cursory glance at the enumerated powers shows that each contains a statement of purpose explicit or implicit in the grant of power.

These so-called patent non-use cases indicate that while there is no constitutional requirement that makes patent validity contingent on the working or use of the patented invention during the term of the patent, there is a requirement that Congress ensure statutorily that the public is

38 Id. at 378. The majority pointed out that Congress had in fact chosen to do so in the Patent Act of 1832, when it conditioned patents to aliens upon the use of the patented invention. Id.
39 Id.
40 Id.
41 Id. at 381.
42 Id. He seems to have taken this view on the assumption that the grant of power resides only in the “by” portion of the Clause. I have elsewhere strongly challenged such an assumption. See EDWARD C. WALTERScheid, THE NATURE OF THE INTELLECTUAL PROPERTY CLAUSE: A STUDY IN HISTORICAL PERSPECTIVE Ch. 5 (2002).
given a full, enabling disclosure of the invention so that when the term expires the public may have full use of the invention. It is for this reason that the United States patent law has always contained a requirement that a patent have a fully enabling disclosure teaching what the invention is and how to make and use it. One consequence of this is that Congress may not constitutionally authorize secret patents.

B. THE NAME ON THE PATENT

The Patent Clause authorizes Congress to secure to "Inventors the exclusive Right to their . . . Discoveries . . ." This language clearly limits congressional authority to the issuance of patents to inventors for their discoveries. The term "their" represents one of only two positive or express limitations on congressional power in the Clause. It is for this reason that

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43 The Supreme Court has subsequently declared that "[t]he basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from [the patented] invention . . . ." Brenner v. Manson, 383 U.S. 519, 534, 148 U.S.P.Q. (BNA) 689, 695 (1966). The quid pro quo can only be achieved if the patent teaches how to make and use the invention.

44 Thus, as set forth in the Patent Act of 1790, the Specification shall be so particular . . . as not only to distinguish the invention or discovery from other things before known and used, but also to enable a Workman or other person skilled in the Art or Manufacture whereof it is a branch or wherewith it may be nearest connected, to make, construct, or use the same, to the end that the public may have the full benefit thereof after the expiration of the Patent term.

Act of April 10, 1790, 1 Stat. 110. The current patent law states:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.


45 For several decades early in the nineteenth century, the first Superintendent of Patents, William Thornton, sought to keep the specifications of issued patent secret from the public, but was ultimately overruled and the practice ceased. EDWARD C. WALTERSCHEID, TO PROMOTE THE PROGRESS OF USEFUL ARTS: AMERICAN PATENT LAW AND ADMINISTRATION, 1787-1836 281 (1998). On very rare occasions, Congress has issued secret patents through private legislation. See, e.g., Act of July 3, 1832, 6 Stat. 502. But early in the nineteenth century no attempt was made to challenge these practices on constitutional grounds. Today, while classified patent applications may be filed, no classified or secret patent may issue. Instead issuance is delayed until the classification or secrecy order is removed. 35 U.S.C. § 181 (1994).

46 U.S. CONST., art. I, § 8, cl. 8.

47 Id. The other resides in the phrase "for limited Times."
patents are always applied for and issued in the name of the inventor regardless of who or what entity may actually own the rights to the patent.48

But for reasons that it has never satisfactorily explained, Congress has approached copyrights quite differently. A leading copyright treatise states that “[t]here would appear to be no constitutional objection to permitting the assignee of an author to claim copyright in the work assigned.”49 The basis for this statement is declared to be that the “author’s property right derived from the Constitutional authority is unquestionably assignable.”50 While this latter statement is indeed true, it does not follow from the mere fact of assignability that the Copyright Clause51 contemplates that the copyright should issue in the name of the assignee.

In the patent statutes, Congress has not only assumed but declared that a patent must issue to the inventor, even though all rights in the invention may be assigned to another entity.52 But in the copyright statutes, Congress has taken a very different tack. The issue arises in the context of so-called “works made for hire,” but it should be noted that from the middle of the nineteenth century congressional enactments on copyright made little or no distinction between the author of a work or the proprietor or assignee of the work when it came to filing a claim or application for copyright. In

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48 See 35 U.S.C. §§ 111, 116, 117, 118, 151, and 152 (1994). See also Kennedy v. Hazelton, 128 U.S. 667 (1888). Robinson made the point expressly in his magisterial patent treatise published in 1890. ROBINSON, supra note 15, at § 363 (“Without a change in the language of the Constitution, no patent could be conferred except upon an inventor, and for his own invention or discovery.”). More recently, the D.C. Circuit has expressly declared that the Patent Clause contemplates the grant of a patent only to the true inventor “either directly or through his assignee.” A.F. Stoddard & Co. v. Dann, 564 F.2d 556, 562, 195 U.S.P.Q. (BNA) 97 (D.C. Cir. 1977).

49 MELVILLE B. NIMMER & DAVID NIMMER, 1 NIMMER ON COPYRIGHT 1-66.22 (2000).

50 Id. (citing to American Tobacco Co. v. Werckmeister, 207 U.S. 284 (1907)).

51 This is the analog to the Patent Clause and reads: “Congress shall have Power... To promote the Progress of Science... by securing for limited Times to Authors... the exclusive Right to their... Writings...” U.S. CONST., art. I, § 8, cl. 8.

52 Thus, 35 U.S.C. § 118 (1994) declares that a person to whom the inventor has assigned or agreed in writing to assign the invention or who otherwise shows sufficient proprietary interest in the matter justifying such action, may make application for patent on behalf of and as agent for the inventor on proof of the pertinent facts and a showing that such action is necessary to preserve the rights of the parties or to prevent irreparable damage; and the Director may grant a patent to such inventor upon such notice to him as the Commissioner deems sufficient, and on compliance with such regulations as he prescribes (emphasis added).

Note that even though the invention may be fully owned and prosecuted by the assignee, nonetheless the patent issues in the name of the inventor and not that of the assignee.
particular, unlike the patent statutes which required that a patent be obtained in the name of the inventor, there was no specific requirement that a copyright be obtained in the name of the author.\textsuperscript{53}

In the Copyright Act of 1909 Congress expressly defined the term “author” to include “an employer in the case of works made for hire.”\textsuperscript{54} This definition was reiterated in the 1976 Act,\textsuperscript{55} and was declared to adopt “one of the basic principles of copyright law.”\textsuperscript{56} Congress has thus made explicit its view that the “author” of works made for hire includes the entity to whom the property right in the copyrighted work had been assigned as well as that person who was the creator or originator of the work. Although this is a highly expansive interpretation of both “authors” and “their” as found in the Copyright Clause, Congress has never seen fit to address the constitutionality of such an expansive definition of these terms.\textsuperscript{57}

The legislative history accompanying the Copyright Act of 1909 contains an interesting discussion of the constitutional aspects of copyright law, whereas the constitutional aspect is only minimally treated in the legislative history of the Copyright Act of 1976.\textsuperscript{58} Thus, the legislative history of the 1909 Act expressly states that the constitutional authority of Congress to create copyrights is limited by several conditions, one of which is “that the subjects which are to be secured are 'the writings of authors.'”\textsuperscript{59} But after so stating, Congress did not see fit to give any explanation whatever as to why the term “author” could constitutionally be interpreted to include an employer “in the case of a work made for hire.”\textsuperscript{60} Instead, it merely stated

\textsuperscript{53} Indeed, the Copyright Act of 1856 specifically referred to copyrights granted to proprietors as well as authors. \textit{Nimmer \& Nimmer, supra note 49} at App. 7-57.

\textsuperscript{54} \textit{Id.} at App. 6-29.

\textsuperscript{55} 17 U.S.C. § 201(b) (2001) (“In the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author for purposes of this title.”).

\textsuperscript{56} \textit{Nimmer \& Nimmer, supra note 49} at App. 4-114.

\textsuperscript{57} In the 1976 Act Congress expressly acknowledged that copyright initially vests in the author or authors of a work. This certainly is consonant with the constitutional language. But in defining the owner of a work made for hire as an author (see \textit{supra} note 55), Congress appears to have gone well beyond a reasonable interpretation of the constitutional language.


\textsuperscript{59} \textit{Nimmer \& Nimmer, supra note 49} at App. 13-10.

\textsuperscript{60} Although Congress was only statutorily defining an “author” to include an employer “in the case of a work made for hire,” of necessity it was assuming that the term “authors” in the Clause also read just as expansively. See \textit{supra} note 55. While Congress clearly has authority to restrict the definition of
that the relevant section of the Act "places an interpretation and construction upon the use of certain words." In the legislative history of the 1976 Act, Congress gave as its reason for the expanded definition that:

The presumption [sic] that initial ownership rights vest in the employer for hire is well established in American copyright law, and to exchange that for the uncertainties of the shop right doctrine would not only be of dubious value to employers and employees alike, but might also reopen a number of other unspecified issues.

Patterson & Lindberg point out that these unspecified issues include arguments that invalidating these so-called "corporate" copyrights would create confusion in the publishing industry and would leave many works unprotected. They suggest that such arguments are both venerable and effective although not necessarily valid, for were such invalidation to occur it is quite possible that the copyright would revert to and vest "in the responsible hands of the authors who actually created the works.

The Register of Copyrights has suggested that Congress expanded the definition of "author" to include employers in the case of works made for hire because of the perception "that there are great advantages of convenience and simplicity in assimilating employers to 'authors' for all purposes," and that "the advantages of making the employer an 'author' for purposes of the statute outweigh any conceptual difficulties involved in doing so." As Nimmer & Nimmer have succinctly put it, "[t]he fiction of the employer as author was employed . . . not in order to achieve substantive results that

"authors," as encompassed in the Clause, for copyright purposes, it has no constitutional authority to expand that definition and grant copyright to individuals who are not "authors" within the meaning of the Clause.


A doctrine in patent law whereby the employer has certain rights in inventions made by his or her employees in the course of their employment.

Nimmer & Nimmer, supra note 49 at App. 4-114.

They are similar to arguments used by the booksellers in England during the eighteenth century to protect their interests.


could not have been otherwise achieved, but rather because of the 'convenience and simplicity' of this manner of achieving [the desired] results.\textsuperscript{67} That this legal fiction might run afoul of the constitutional language seems not to have been contemplated.

"The troubling problem," as Patterson & Lindberg stress, "is that the reasons that make the work-for-hire doctrine unconstitutional are the very reasons that make it a convenient and powerful instrument of monopoly."\textsuperscript{68} Note that the Copyright Clause makes no reference to publishers and does not purport to authorize Congress to give a limited copyright monopoly to them. Given the history of copyright in England in the seventeenth and eighteenth centuries, it is very likely that this was deliberate. Indeed, the House report on the 1909 Act at least implicitly recognized "that to grant the publisher a copyright would be to grant a corporate entity the rights intended to protect only the author, and that those rights could be used to form oppressive monopolies—but then overlooked [or deliberately ignored] its relevance to the work-for-hire doctrine."\textsuperscript{69}

It is reasonable therefore to ask on what basis ownership of a work can be said to define authorship in the constitutional sense. The short answer is that it cannot. In common parlance, the one who writes or creates a work is viewed as the author, and was so viewed at the time the Constitution was drafted.\textsuperscript{70} As Chief Justice Marshall stated in 1824, those "who framed our constitution, and the people who adopted it, must be understood to have employed words in their natural sense, and to have intended what they said."\textsuperscript{71} It thus took a massive legal fiction for Congress to declare that for copyright purposes the employer is an author of a work made for hire. Simply creating a legal fiction that an employer is the author of a work for hire does not mean that such fiction passes constitutional muster. As the

\textsuperscript{68} \textit{Patterson & Lindberg, supra} note 65, at 86.
\textsuperscript{70} The standard English dictionary in use at the time the Constitution was drafted contained four definitions of "author," to wit: (1) "The first beginner or mover of anything; he to whom any thing owes its original"; (2) "The efficient; he that effects or produces any thing"; (3) "The first writer of any thing; distinct from the translator or compiler"; and (4) "A writer in general." \textit{Samuel Johnson, A Dictionary of the English Language} (1755).
\textsuperscript{71} See \textit{supra} note 11 and accompanying text.
Supreme Court has stated: "The power to create presumptions is not a means of escape from constitutional restrictions."\(^\text{72}\)

Although this issue has been noted in judicial opinions, it has never been definitively ruled on. On occasion, however, *dicta* have suggested that the term "authors" as used in the Copyright Clause may properly be interpreted to include the owner of a work for hire. Thus, for example, the Second Circuit has declared that: "Though the United States is perhaps the only country that confers 'authorship' status on the employer of the creator of a work for hire . . ., its decision to do so is not constitutionally suspect."\(^\text{73}\)

It gave no basis for this conclusion, even though it recognized that "the employer has shown skill only in selecting employees, not in creating protectable expression," and that declaring an employer an author "seems more like a justification for transfer of ownership than for recognition of authorship."\(^\text{74}\)

There is thus a clear dichotomy in the congressional treatment as to who may obtain patents and copyrights. But the statutory requirement that patents issue in the name of the inventor is consonant with the clear meaning of the constitutional language. As the D.C. Circuit has declared, there is a "constitutional objective of *granting* a patent (or a reissue patent) to the true inventor"\(^\text{75}\) which effectively precludes granting a patent in the name of an assignee of the inventor's rights.

C. A CONSTITUTIONAL REQUIREMENT OF NOVELTY

Implicit in the use of the terms "inventors" and "discoveries" in the Patent Clause is the premise that before an exclusive right can be granted, the discovery to be patented must be novel. Novelty is also implicit in the statement of purpose, i.e., "to promote the progress of . . . useful arts."\(^\text{76}\)

Simply put, novelty is a constitutional requirement.\(^\text{77}\) Interestingly, it was

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\(^{72}\) Bailey v. Alabama, 219 U.S. 219, 239 (1911).


\(^{74}\) Id. at 506, 507 n.5.

\(^{75}\) A.F. Stoddard & Co. v. Dann, 564 F.2d 556, 562 (D.C. Cir. 1977).

\(^{76}\) Although certain commentators dispute it, a statement of purpose does indeed constitute a constitutional limitation on patentability. See, e.g., Walterscheid, supra note 42, at 154-65; and Paul J. Heald & Suzanna Sherry, *Implied Limits on the Legislative Power: The Intellectual Property Clause as an Absolute Constraint on Congress*, 2000 Ill. L. Rev. 1119, 1120 (2000).

\(^{77}\) See Burchfiel, supra note 19, at 162. Cf. Federico, supra note 27.
not until 1966 that the Supreme Court so held, albeit in an indirect sense, when it stated: "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 [publicly] available." The requirement in the first United States patent legislation that in order to be patentable a discovery be "not before known or used" is simply an incorporation of the constitutional requirement of novelty.

Regardless of whether a constitutional statement of purpose is viewed as a limitation on the grant of authority, the constitutional requirement that an invention must be novel to be patentable clearly arises out of the definitions of "inventors" and "discoveries" that were in common use in 1787. Seidel points out that the most authoritative English dictionary of its day was Samuel Johnson's A Dictionary of the English Language and that the fourth edition of this dictionary, published in 1818, "carries the word meanings of the late 1700's." Johnson defined "inventor" as "one who produces something new; a deviser of something not known before"; and "discovery" as "the act of finding anything hidden; the act of revealing or disclosing any secret."

At the end of the eighteenth century then, novelty was synonymous with new, but new in what sense? Under the British practice at the time the Constitution was drafted, novelty meant new in the realm. The fact that a particular art or manufacture was known or practiced outside Great Britain did not preclude its patentability, provided only that it was not known in the country. Novelty thus had a very broad connotation, and originality was only peripherally involved. This, of course, was what permitted patents of importation under the English practice.

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79 Act of April 10, 1790, 1 Stat. 109, 110.
81 Id. at 13, n.17.
82 Id. at 15, n.19.
83 In Edgeberry v. Stephens, 2 Salk. 447, 1 Abbott's P.C. 8, 90 Eng. Rep. 1162 (King's Bench 1691), the court held:
  if the invention is new in England, a patent may be granted though the thing was practiced beyond the sea before; for the statute [of Monopolies] speaks of new manufactures within this realm; so that, if they be new here, it is within the statute; for the act intended to encourage new devices, useful to the kingdom, and whether learned by travel or by study it is the same thing.
In other words, novelty was not affected by what was known or used outside England, and "true and first
In 1846 Hindmarch summarized the English law relating to novelty in the following manner:

If the public once becomes possessed of an invention by any means whatever, no subsequent patent for it can be granted, either to the true and first inventor himself, or any other person, for the public cannot be deprived of the right to use the invention, and a patentee of the invention could not give any consideration to the public for the grant, the public already possessing every thing he could give. 84

He went on to state:

The want of this requisite novelty in an art or invention may . . . be established in any way which shows that the public had a knowledge of the invention, or the means of knowing it before the date of the patent. Public knowledge of an invention may be shown by the existence of some public record, or the publication of some work or paper before the date of the patent, containing a description of the invention,—or by some public use of the invention prior to the grant of the patent. 85

This was the law in Great Britain at the time the Constitution was drafted. Novelty of an invention was determined not by what was known or used or published in the rest of the world but by what was in public use, available to the public, or published within Great Britain itself.

No delegate has left any record as to what the convention intended "inventors" and "discoveries" to mean. Madison engaged in private correspondence which appeared to suggest that he narrowly interpreted these terms, but his rationale was less than clear. 86 The lack of any specific

84 WILLIAM HINDMARCH, A TREATISE ON THE LAW RELATIVE TO PATENT PRIVILEGES FOR THE SOLE USE OF INVENTIONS: AND THE PRACTICE OF OBTAINING LETTER PATENTS FOR INVENTIONS, WITH AN APPENDIX OF FORMS AND ENTRIES 21 (Harrisburg 1847).
85 Id. at 66 (emphasis added).
86 See infra notes 95-97 and accompanying text.
interpretation by the delegates themselves is unfortunate because the argument has been made that "[t]he statement that patents are to issue to 'inventors' for 'their discoveries' was clearly meant to prevent grants for imported technology, the English 'patents of importation.'" It is not at all obvious, however, that such a narrow scope of novelty was what the Framers intended or even contemplated.

There is no reason to believe that they were not conversant with the fact that the common law had interpreted "true and first inventor" as it appeared in the Statute of Monopolies to include the first importer. Moreover, they had chosen not to use the words "true and first" to modify "inventors." Thus, on its face, the constitutional language seemed to suggest that an exclusive right could be granted to someone who fell within the definition of "inventor," but who was in actuality not the literal "true and first" inventor. In addition, the commonly accepted definitions of "inventor" and "discovery" in the late eighteenth century did not per se require novelty in the modern sense. Simply put, there is nothing in the constitutional language which obligated Congress to use statutory language that would obligate an interpretation of novelty in any way materially different than the contemporaneous British view that novelty was dependent on what was known and used within the country.

Yet Congress thought it did. As a consequence, although it was not immediately apparent, the new American patent law would not accept the English interpretation of the limited relationship between originality and novelty. Instead, to be patentable in the United States a discovery had to be original to the inventor, i.e., not known or used anywhere in the world and not merely in the United States.

The patent bill, H.R. 41, which ultimately became the Patent Act of 1790, was first read in the House on February 16, 1790. As introduced, the phrase "not before known or used" therein was modified by "in the United States" thereby clearly indicating that an invention known or used outside the United States could be patented in the United States. To make this point unequivocally, section 6 was added expressly stating that the first importer

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9 H.R. 41 is reproduced in 6 DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS OF THE UNITED STATES OF AMERICA, LEGISLATIVE HISTORIES (L.G. De Pauw et al., eds., 1982) at 1623-37.
of any art, machine, engine, device or invention, or any improvement thereon should be treated as if he or she were the original inventor or improver within the United States.

But this language would be short-lived, because during subsequent debate the House and the Senate would delete both section 6 and "in the United States." The congressional record is totally silent as to why these deletions occurred. Historians have largely ignored this major—and in its time radical—departure from the European patent custom and practice and have failed totally to recognize that it was initiated in the House.90 They have also failed to address the question of why Congress chose to ignore Washington's recommendation91 in so doing.92 But certain of Tench Coxe's correspondence suggests that it came about primarily because of a concern expressed by James Madison that patents of importation were unconstitutional.

On March 7, 1790, the day the House deleted section 6 from H.R. 41, Rep. Thomas Fitzsimmons of Philadelphia wrote to Coxe, describing the proceedings of the day. He stated in relevant part:

The bill for promoting Useful Arts has been so far gon thr. To be new Engrossed-& will probably go to the senate in a day or two. Many alterations in Stile & some in Substance has been made-Among which are some Suggested in your Letter to me the 6th Section, allowing to Importers, was left out, the Constitutional power being Questionable-

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90 Thus, for example, Ben-Atar gives a misleading impression in stating that "[t]he House ... version of the bill [i.e., the version passed by the House] followed English law in giving to the first importer of technology the monopoly privileges accorded to original inventors." Doron Ben-Atar, Alexander Hamilton's Alternative: Technology Piracy and the Report on Manufactures, 52 WM. & MARY Q. 403 (1995). It is quite possible that if the Senate had not deleted "within the United States" as a modifier to "not before known or used" the courts would have interpreted this language as permitting patents of importation, but Ben-Atar fails to note that the House deleted section 6 which would have expressly authorized patents of importation and in so doing it clearly intended to preclude patents of importation. For a detailed discussion of the enactment of the Patent Act of 1790, see E.C. Walterscheid, Charting a Novel Course: The Creation of the Patent Act of 1790, 25 AIPLA Q.J. 445 (1997).

91 On January 8, 1790, President Washington had recommended to Congress "the expediency of giving effectual encouragement . . . to the introduction of new and useful inventions from abroad, as to the exertions of skill and genius in producing them at home." J Documentary History of the First Federal Congress of the United States of America, Legislative Histories, supra note 89, at 253.

92 Ben-Atar actually raises the question but only in a rhetorical sense. See supra note 90, at 404.
but if it is not the inconvenience is too Manifest of Admitting Patents in such Cases except some better guards could be provided.\textsuperscript{93}

Fitzsimmons thus makes clear section 6 was deleted primarily because of concerns raised about the constitutionality of patents of importation. He does not indicate who raised the constitutional concerns or what their nature was. But closely contemporaneous correspondence between Coxe and Madison several weeks after the House action suggests that Madison was largely—if not primarily—responsible for the refusal of Congress to specifically authorize patents of importation in the Patent Act of 1790.

Two weeks after section 6 was deleted from H.R. 41 by the House, Coxe wrote to Madison, saying:

I saw with regret the truth of your apprehension, that the benefit of a patent could not be constitutionally extended to imported objects-nor indeed, if it were within the verge of the powers of Congress, do I think any clause [meaning statutory provision] to that effect could be safely modified. Private acts would be wise and safe, if they could be thought constitutional; but I think they cannot without an Amendment, by striking out all of the clause that follows the word "by" in the 8th parag. of the 8th Sec. of the first Article\textsuperscript{94}—or something to that purpose.\textsuperscript{95}

How did Coxe know of Madison's concern that patents of importation were unconstitutional, and why did he refer to "any clause to that effect"? The answer is that he was closely following the progress of H.R. 41 because of

\textsuperscript{93} Letter from Rep. Thomas Fitzsimmons of Philadelphia to Tench Coxe (Mar. 7, 1790) (on file in Coxe Papers, Incoming Box 20, Pennsylvania Historical Society). Coxe's letter to Fitzsimmons is missing, but the one thing Coxe did not desire was the deletion of section 6 from H.R. 41.

\textsuperscript{94} He was referring to the Patent Clause.

\textsuperscript{95} Letter from Coxe to Madison (Mar. 21, 1790), in 13 THE PAPERS OF JAMES MADISON 111-14 (Charles F. Hobson et al., eds., 1981).
his interest in obtaining patents of importation,96 and thus was fully apprized of the House action with respect to section 6.

In his response to Coxe on March 28th, Madison acknowledged his view that patents of importation were unconstitutional.97 There is no contemporaneous record which expressly indicates what Madison’s rationale was for this view, and unfortunately neither Madison nor Coxe, nor apparently anyone else, has set forth Madison’s reasoning. Nowhere in his voluminous writings did Madison indicate that the convention had ever addressed the issue of patents of importation, and there is nothing in the records of the convention, including Madison’s Notes, which in any way suggests that the Framers consciously intended to preclude Congress from having authority to grant patents of importation. Nor does Madison ever seem to have stated or otherwise indicated that the granting of patents of importation would not promote the progress of useful arts and manufactures.

Rather, implicit in his letter to Coxe is that his reasoning was predicated on the perceived rejection by the convention of certain broader powers that he and Charles Pinckney had proposed. If so, it was a short-lived approach

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96 On January 17, 1790 Coxe had written to George Clymer that “we” are about to apply for a patent for various items of Richard Arkwright’s fabulously successful cotton processing machinery developed in England. He acknowledged that “we” were not original inventors of this machinery, and accordingly urged Clymer to use his influence to ensure that the patent bill pending before Congress allowed patent privileges for those who “introduced” valuable foreign machinery. See A.F.C. Wallace & D.J. Jeremy, William Pollard and the Arkwright Patents, 34 WM. & MARY Q. 404, 409-11 (1977). Indeed, in his letter to Madison he candidly stated that he possessed several objects, “some of wch. are not inventions, but importations.” Letter from Coxe to Clymer, in 13 THE PAPERS OF JAMES MADISON, supra note 95, at 113. He also told Madison that “the Artist, who undertook to make the machine for spinning flax, hemp & wool by water has completed the model &... it is now in my hands ready for an application for a patent, which he will make as soon as the law shall pass.” Id. at 112. The “artist” was George Parkinson, who was one of the “we” mentioned in Coxe’s letter to Clymer on January 17.

97 In his March 21 letter to Madison, Coxe sought support for his (Coxe’s) scheme to encourage the diffusion of European technology to the United States by offering land premiums for the importation of such technology. Madison now gave short shrift to such an idea, saying:

Your idea of appropriating a district of territory to the encouragement of imported inventions is new and worthy of consideration. I cannot but apprehend however that the clause in the constitution which forbids patents for this purpose will lie equally in the way of your expedient. Congress seems to be tied down to the single mode of encouraging inventions by granting the exclusive benefit of them for a limited time, and therefore to have no more power to give a further encouragement out of a fund of land than a fund of money. The Latitude of authority wished for was strongly urged and expressly rejected.

Letter from Madison to Coxe (Mar. 28, 1790), in 13 THE PAPERS OF JAMES MADISON, supra note 95, at 128.
to constitutional interpretation. Within a few years, he would expressly reject as the basis for constitutional interpretation the fact that a particular proposal had been rejected by the convention.\(^9\) Several decades later, in 1832, he suggested that even though the convention had rejected certain specific proposals with respect to congressional power, this did not mean that the delegates did not intend for Congress to have broad equivalent powers to protect and encourage domestic manufacture.\(^9\) Although Madison was speaking in the context of authority under the Commerce Clause to place import duties on foreign manufactures, his argument is just as applicable to interpreting the Patent Clause in the context of authority to create patents of importation.

In 1790 and 1791, however, he seems to have been quite willing to predicate constitutional interpretation on rejection of particular language by the convention, with the result that the future course of the United States’ patent law was fundamentally changed. But being the erudite fellow that he was, he quite likely was aware that the common law had interpreted “true and first inventor” in the Statute of Monopolies as reading on one who first imports as well as one who first invents. Why then did he refuse to accept this common law interpretation and apply it to the constitutional language? The most likely reason is that he was convinced that the Constitution had not incorporated the common law as the law of the land,\(^{10}\) as indeed it had

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\(^9\) As he put it:

The intention is inferred from the rejection or not adopting of particular propositions which embraced a power to encourage them [i.e., domestic manufactures]. But, without knowing the reasons for the votes in those cases, no such inference can be sustained. The propositions might be disapproved because they were in bad form or not in order; because they blended other powers with the particular power in question; or because the object had been, or would be, elsewhere provided for. No one acquainted with the proceedings of deliberative bodies can have failed to note the frequent uncertainty of inferences from a record of naked votes.

Letter from Madison to Professor Davis, in 3 RECORDS OF THE FEDERAL CONVENTION OF 1787, at 518, 520 (Max Farrand, ed., New Haven 1937).

\(^{10}\) See Letter from Madison to Washington (Oct. 18, 1787), in 3 RECORDS OF THE FEDERAL CONVENTION OF 1787, supra note 99, at 129-30 (containing Madison’s explication of the common law and its incorporation into the constitution).
not, and he was not about to depend on the common law for an interpretation of the meaning of any of the terms used in the Patent Clause.

As passed by the House, H.R. 41 retained the qualifier “in the United States” to the phrase “not before known or used.” The reason for this seems to have been that in the press of business Madison and possibly others addressed their concerns about constitutionality of patents of importation only to section 6, apparently not realizing that retention of the qualifying phrase would also authorize patents of importation. Because it agreed with the House that the new patent statute should not authorize patents of importation, the Senate deleted the qualifier. Aware that the House had acted with insufficient precision, the Senate seems to have viewed this amendment as merely one of house-keeping to implement the intent of the House with which it concurred.

The result was that the first federal patent legislation did not contain express language authorizing patents of importation, but neither did it contain language expressly precluding such patents. The Act of 1790 was replaced with new patent legislation which also provided no express authorization for patents of importation, although it too did not expressly preclude them. Instead, it retained the ambiguous language from the Act of 1790 that in order for an invention to be patentable it must be “not before known or used.” At the end of the eighteenth century, all other countries with patent systems granted patents of importation as a means of promoting the development of new industries within their borders. It was only in the United States that such patents were being argued to be precluded by law.

Cf. Crosskey’s view that “the men of the Convention apparently considered the standing national law of the United States to be the ‘Common Law of England,’ in all its applicable portions.” WILLIAM W. CROSSKEY, 1 POLITICS AND THE CONSTITUTION 549 (1952).

Although the wording of his views on the Clause could be interpreted as suggesting that the common law was indeed applicable to interpreting the Clause. See THE FEDERALIST NO. 43 (James Madison).

Its reasons for doing so are nowhere found. It may have simply agreed with the constitutional concerns. Alternatively, it may have believed there were other good and sufficient reasons why the United States should not issue such patents. In this regard, note that Fitzsimmons had indicated to Coxe that even in the absence of constitutional concerns, “the inconvenience is too manifest of admitting patents in such cases except some better guards could be provided.” See supra note 93 and accompanying text. Moreover, the Senate had received a copy of a petition by one Richard Wells which strongly objected to patents of importation, primarily because he believed they would make it more difficult to pirate English inventions. For a discussion of this petition, see E.C. Walterscheid, *Patents and Manufacturing in the Early Republic*, 80 J. PAT. & TRADEMARK OFF. SOC’Y 855, 875-77 (1998).
the Act of 1790 or the Act of 1793 prohibited patents of importation, that conclusion would soon be drawn from the interpretation given to novelty under these Acts.  

It is interesting to note that at least part of the language of the Act of 1793 appears to have been intended by its sponsor to allow United States citizens to obtain patents of importation, while precluding foreigners from doing so. While the Act of 1790 had permitted anyone, citizen or not, to obtain a patent, the Act of 1793 restricted patents to American citizens. Maryland Congressman William H. Murray, who proposed this change, candidly stated that its purpose was to prevent foreigners from obtaining patents in the United States for inventions for which they had already obtained patents in Europe "by which means the citizens of the United States might be prevented from obtaining patents for the same or similar inventions." Inherent in this view was the supposition that U.S. citizens might indeed properly obtain patents for inventions that had already been patented by others in Europe.

There never would be a federal judicial opinion expressly holding that patents of importation were unconstitutional. But there was a state opinion indicating this to be the case. In 1812 in Livingston v. Van Ingen, a unanimous appellate court in New York held that federal patents of importation were forbidden by the Constitution, but that this ban did not apply to state patents of importation. The judges argued that the term "inventors" as used in the Constitution was what precluded such patents,

104 Conversely, however, for several decades to come, arguments would be presented that the United States should indeed grant patents of importation because it was in her economic interest to do so. See, e.g., THOMAS GREENE FESSENDEN, AN ESSAY ON THE LAW OF PATENTS FOR NEW INVENTIONS 213-16 (Boston 1810); JOSEPH COOPER, THE EMPORIUM OF ARTS AND SCIENCES 436 (Philadelphia 1813); and I.L. SKINNER, THE AMERICAN JOURNAL OF IMPROVEMENTS IN THE USEFUL ARTS, AND MIRROR OF THE PATENT OFFICE OF THE UNITED STATES 34 (Washington 1828).

105 The first reported United States patent case, decided in 1804, held that patents of importation were precluded by American law, but gave no basis whatever for this holding. Reutgen v. Kanowrs, 20 F. Cas. 555, 556 (C.C.O. Pa. 1804). Subsequent cases would base such a holding on an interpretation of statutory language in the Patent Act of 1793.

106 9 Johns. 507 (N.Y. 1812).

107 Thus, Chief Justice Kent stated that "it seems to be admitted that Congress are authorized to grant patents only to inventors of the useful art. * * * There cannot, then, be any aid or encouragement, by means of an exclusive right under the law of the United States, to importers from abroad of any useful invention or improvement." Id. at 583.
although there is nothing to indicate that the Framers intended a more narrow definition than that encompassed in the common law.\textsuperscript{109}

As late as 1824, however, the Attorney General of the United States contended that there was nothing in the Patent Clause that forbade federal patents of importation. As he put it:

\begin{quote}
But it was argued that the power of Congress is limited to inventors, and that the power to encourage by patents the introduction of foreign discoveries, stands clear of this constitutional grant. If it were necessary, this doctrine might be questioned. The statute [of monopolies] uses the same word with the constitution, "inventors"; and the decisions upon the construction of this statute might be referred to, in order to show that it has been considered as embracing discoveries imported from abroad.\textsuperscript{110}
\end{quote}

But without any citation of authority, Story in his Commentaries published in 1833 stated with respect to the Patent Clause: "The power, in its terms, is confined to authors and inventors; and cannot be extended to the introducers of any new works or inventions."\textsuperscript{111} He thus accepted the view that the literal language of the Constitution, i.e., its use of the term "inventors," precluded patents of importation.

If patents of importation were precluded by the literal language of the Patent Clause as Story indicated, a New York court opined, and Madison appeared to believe,\textsuperscript{112} then the Clause obligated a narrow interpretation of

\textsuperscript{109} The common law interpreted the phrase "true and first inventor" in the Statute of Monopolies to include the first introducer as well as the original inventor. See supra note 83 and accompanying text. Moreover, as Cohen notes, "the framers of the Constitution were generally fluent in Latin and ... the Latin word 'inventor' means 'one who finds out, a contriver, author, discoverer (from the verb 'invenio' meaning sensu stricto, 'I come upon,' 'I find,' 'I discover'). ..." See I. BERNARD COHEN, SCIENCE AND THE FOUNDING FATHERS 241 (New York 1995). Originality was not a requirement.

\textsuperscript{110} Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1, 173 (1824).

\textsuperscript{111} JOSEPH STORY, COMMENTARIES ON THE CONSTITUTION OF THE UNITED STATES § 1153 (Boston 1833).

\textsuperscript{112} Although Madison's letter to Coxe seemed to indicate that his belief that patents of importation were unconstitutional was predicated on the rejection by the convention of proposals that were sufficiently broad to encompass such patents, implicit in any such view was that the terms "inventors" and "discoveries" as used in the Clause must be construed to refer only to one who is the first and original discoverer of the subject matter for which an exclusive right is sought. Otherwise, there was nothing to prevent "inventor" to be defined as including the first introducer or importer.
novelty and a broad interpretation of what constitutes an anticipation precluding patentable novelty. While early judicial opinions would indeed conclude that novelty under the United States patent law meant new and original with respect to the world at large, and not merely the United States, they would do so on the basis of an interpretation of certain language of the Patent Act of 1793 and not on any interpretation of "inventors" and "discoveries" as used in the Patent Clause. As a result, novelty in the United States would come to have quite a different meaning than it had under the existing common law. Specifically, originality would be interpreted to be a fundamental component of novelty in the United States, i.e., the invention would have to be both new and original, not only in the United States but in the entire world.

The legislative history of the Patent Act of 1790 seemed to suggest that the phrase "not before known or used" was intended to mean not before known or used anywhere in the world and not simply in the United States.113 But this legislative history was not known or reported, and even if it had been, it would not have been considered relevant under the rules of statutory construction then in vogue.114 Instead, the courts would ultimately rely upon other language in the Act of 1793, i.e., "not originally discovered by the patentee,"115 to hold that what is now termed "prior art" is not limited to that known or used in the United States.116

These holdings were not predicated on any supposed contemporary definition of "inventors" and "discoveries" in the manner that the New York judges had in Livingston v. Van Ingen in 1812 when they declared that the Patent Clause precluded federal patents of importation.117 If there had been any general feeling that "in common parlance" the terms "inventors" and "discoveries" in the Constitution precluded any expansive definition of patentable novelty, it would have been extremely easy for federal judges to say so, but they did not. Indeed, Chief Justice Marshall, when given the opportunity, refused to interpret the terms "inventors" and "discoveries" as they appear in the Patent Clause, and instead relied on statutory language to

113 Walterscheid, supra note 90.
114 See, e.g., H.J. Powell, The Original Understanding of Original Intent, 98 HARV. L. REV. 885, 897 (1985) ("The modern practice of interpreting a law by reference to its legislative history was almost wholly nonexistent. . . . ").
117 See supra notes 107 and 108 and the accompanying text.
require that patentable invention be both new and original.\textsuperscript{118} Thus, the American emphasis on originality as a fundamental component of novelty originated in statutory interpretation and not as the result of any interpretation of the constitutional language. All that the Patent Clause literally requires is that the invention be new in the United States in order to be patentable. Nonetheless, it is reasonable to suppose that in light of the rapid information transfer and retrieval now available worldwide that the Supreme Court would interpret novelty under the Clause as requiring originality.\textsuperscript{119}

D. A CONSTITUTIONAL STANDARD OF INVENTION

Accepting that novelty is a constitutional requirement for patentability, is there any higher standard set forth in the Patent Clause than simple novelty with regard to what may be declared to be patentable invention? In the middle third of the twentieth century, justices of the Supreme Court began, for the first time, to argue that there was.\textsuperscript{120} The first intimation of this view occurred in 1941 in \textit{Cuno Engineering Corp. v. Automatic Devices Corp.} where Justice Douglas for the Court declared the invention in question not to be patentable because the inventor’s “skill in making this contribution” failed to reach “the level of inventive genius which the Constitution (Art. I, \$ 8) authorizes Congress to reward.”\textsuperscript{121} He pointed to no particular language of the Patent Clause obligating a specific “level of inventive genius” before a patent could be proper.

A year later, Justice Black, joined by Justice Douglas, dissenting in \textit{Exhibit Supply Co. v. Ace Patents Corp.}, seemed to suggest that the constitutional meaning of “inventors” and “discoveries” were somehow dependent on how individual justices viewed the intrinsic worth of the particular invention.\textsuperscript{122} But it was in 1950 that Justices Douglas and Black, concurring in \textit{Great

\textsuperscript{118} See supra note 116.

\textsuperscript{119} Thus the present patent statute defining originality as an essential component of novelty for purposes of patentability would likely in an appropriate circumstance be judicially treated as constitutionally required. See 35 U.S.C. \$ 102 (West 2001).

\textsuperscript{120} This despite the fact that in 1891 the Court had declared that the term “invention” “cannot be defined in such manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not.” \textit{McClain v. Ortmayer}, 141 U.S. 419, 427 (1891).

\textsuperscript{121} 314 U.S. 84, 91, 51 U.S.P.Q. (BNA) 272 (1941).

\textsuperscript{122} See supra note 25.
Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp., really got the attention of the patent bar, with their constitutional theory that "every patent case involving validity represents a question which requires reference to a standard written into the Constitution." In their view, that standard is imposed by the statement of purpose in the Patent Clause. Had they stopped there, their views would have been controversial, but not historically absurd. But they went much further and argued that constitutionally "an invention, to justify a patent, had to serve the ends of science—to push back the frontiers of chemistry, physics, and the like; to make a distinctive contribution to scientific knowledge. * * * The Constitution never sanctioned the patenting of gadgets. Patents serve a higher end—the advancement of science." The only supposed authority cited for this view was certain earlier references by members of the Court to variations on the phrase "inventive genius" in a number of earlier opinions. But until Cuno the Court had never suggested that "inventive genius" was a constitutional standard for patentability, and even then there had been no suggestion that "advancement of science" was a constitutional requirement for patentability.

Such a view had never seriously been suggested by anyone, and besides reading the phrase "useful arts" out of the Clause, it relied on a totally anachronistic interpretation of "science" as used in the Clause. Quiet likely for these reasons, the Court has declined to read into the Clause any requirement that scientific advancement is a predicate for patentability.

It has, however, accepted their view that the introductory language of the Clause sets forth a constitutional standard of patentability. Thus, in 1966, in Graham v. John Deere Co. the Court relied heavily on the introductory

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123 340 U.S. 147, 154, 87 U.S.P.Q. (BNA) 303 (1950). They had actually initially taken this position five years earlier in Special Equipment Co. v. Coe, 324 U.S. 370, 381, 64 U.S.P.Q. (BNA) 525 (1945) ("The purpose 'to promote the progress of science and useful arts'... provides the standards for the exercises of the power and sets the limits beyond which it may not go.").

124 340 U.S. at 155.

125 See id. at 155, n.1.

126 Douglas and Black contended that "[t]he invention, to justify a patent, had to serve the ends of science—to push back the frontiers of chemistry, physics, and the like; to make a distinctive contribution to scientific knowledge." 340 U.S. at 154. Burchfiel calls this statement "[p]erhaps the most egregious recent example of judicial [f]ailure to recognize the difference between modern and circa-1800 usage" (citing to Powell, supra note 114, at 896 n.56). See Burchfiel, supra note 19, at 214. Prager is even more blunt, saying: "This was about as clearly wrong as a judicial opinion on an intricate manner can possibly be. It was based on a complete disregard for the constitutional promotion of the useful arts." See Frank D. Prager, Standards of Patentable Invention from 1474 to 1952, 20 U. CHI. L. REV. 69, 86 (1952).
language to support its view that there is a constitutional standard of invention that must be met for there to be patentability. It began by noting that the qualified authority given to Congress with regard to the issuance of patents "is limited to the promotion of advances in the 'useful arts,'" and went on to state:

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. And it is in this light that patent validity "requires reference to a standard written into the Constitution."\(^{127}\)

In so stating, the Court accepted the earlier view of Justices Douglas and Black that the Patent Clause sets forth a constitutional standard of patentability but "clearly rejected any reading of the intellectual property clause that would require that an invention advance the frontiers of natural science."\(^{128}\)

In 1969 the Court reiterated the views it had expressed in *Graham v. John Deere Co.* but did not amplify upon them or explain them.\(^{129}\) Nor has it done so since then. In the Court's view something more than simple novelty is constitutionally required, but what that something is—aside from encompassing "innovation, advancement, and things which add to the sum

\(^{127}\) 383 U.S. 1, 5-6 (1966) (citing the concurring opinion of Justices Douglas and Black in *A. & P. Tea Co. v. Supermarket Corp.*).

\(^{128}\) Burchfiel, *supra* note 19, at 164.

of useful knowledge"—is unclear. Needless to say, these terms are not particularly helpful in defining a constitutional standard of invention.

Despite the Court's failure to give any indication what is intended by the quoted language, commentators have generally assumed that it elevated to constitutional status the "general condition for patentability" first stated in 1851 in Hotchkiss v. Greenwood. There the Court declared that "unless more ingenuity and skill . . . were required . . . than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention." As the Graham Court pointed out: "In practice, Hotchkiss has required a comparison between the subject matter of the patent, or patent application, and the background skill of the calling. It has been from this comparison that patentability was in each case determined." 3

In 1952 Congress first set forth the present statutory requirement that in order to be patentable the subject matter of an invention must be nonobvious, saying:

A patent may not be obtained . . . 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.

In Graham the Court concluded that this language "was intended merely as a codification of judicial precedents embracing the Hotchkiss condition, with congressional directions that inquiries into the obviousness of the subject

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131 383 U.S. at 11.


133 52 U.S. at 267.

134 383 U.S. at 12.

matter sought to be patented are a prerequisite to patentability.” 136 If the Hotchkiss “condition” is a constitutional requirement, as various commentators have inferred, 137 then it followed that the language “innovation, advancement, and things which add to the sum of useful knowledge” in Graham was intended to mean that the statutory requirement of unobviousness for patentability was also a constitutional requirement. While not expressly so stating, the Court certainly seemed to infer this when it declared “[t]he emphasis on nonobviousness is one of inquiry, not quality,” 138 and, as such, comports with the constitutional strictures.” 139

Congress, however, has not interpreted Graham as setting forth a constitutional requirement for nonobviousness. Thus, in 1996 it amended the patent statute to eliminate the nonobviousness requirement for some biotechnological processes. 140 Heald and Sherry, while conceding that nonobviousness was not a requirement for patentability under British law at the time the Constitution was drafted, nonetheless argue that something more than mere novelty was required and that this something more was incorporated into the Patent Clause. 141 They are correct, but that something more was a constitutional requirement for utility, which will be subsequently discussed. 142

In otherwise setting forth a statutory requirement that an invention be unobvious in order to be patentable, Congress had gone further and also stated that “[p]atentability shall not be negatived by the manner in which the invention was made.” 143 The Graham Court noted that it “seems apparent that Congress intended” by this language “to abolish the test it believed this Court announced in the controversial phrase ‘flash of creative genius,’ ” in Cuno. 144 If there was a certain “level of creative genius” required by the

136 383 U.S. at 17.
137 See supra note 130.
138 This certainly seemed to indicate disagreement with the views of Justices Douglas and Black that “advancement of science” was a constitutional requirement. See supra note 124 and accompanying text.
139 383 U.S. at 17.
140 According to 35 U.S.C. § 103(b)(1) (2001), a “biotechnological process using or resulting in a composition of matter that is novel under section 102 and nonobvious under subsection (a) of this section shall be considered nonobvious if [the composition of matter and process are claimed in the same patent application and are owned by the same person].”
141 Heald & Sherry, supra note 76, at 1186-87.
142 See infra Part III.E.
144 383 U.S. at 15.
Constitution, as Justice Douglas' opinion in *Cuno* certainly seemed to suggest, then Congress clearly did not have authority to negate such a requirement by statutory enactment, and any statutory language seeking to do so would be unconstitutional.

To avoid this problem, the *Graham* Court now sought to "explain" *Cuno* as nothing more than a "rhetorical embellishment" which "merely rhetorically restated the requirement that the subject matter sought to be patented must be beyond the skill of the calling." According to the *Graham* Court, in *Cuno* "[i]t was the device, not the invention, that had to reveal the 'flash of creative genius.'" Never mind that in *Cuno* the device *was* the invention. Be that as it may, the *Graham* Court sought to indicate that the *Cuno* standard and the one it was pronouncing were basically the same. In essence, invention did not depend on the state of mind of the inventor, i.e., invention could be made accidentally as well as deliberately, and invention, regardless of how made, was patentable as long as it was unobvious to one of ordinary skill in the art.

This was well and good, but what was the basis for the *Hotchkiss* test as originally set forth in 1851? The *Hotchkiss* Court cited no authority, judicial or statutory, for the test it set forth, as indeed it could not, for there was none. Moreover, the *Hotchkiss* Court made no reference to any constitutional basis for the test. Rather it engaged in an early case of judicial activism predicated neither on statutory nor constitutional interpretation.

The *Graham* Court thus found itself in a quandary in attempting to establish a historical basis for its interpretation of the Patent Clause as establishing a constitutional standard of invention beyond simple novelty.

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16 Instead of engaging in such semantics (some would call it sophistry), the Court would have been better served by never having included this supposed distinction between "the device" and "the invention."

17 The *Graham* Court noted that the ultimate determination in *Hotchkiss*, namely, that substitution of porcelain or clay for wood or metal in doorknobs did not constitute a patentable invention, "flows directly" from one of the rules followed by the Patent Board under the Act of 1790. 383 U.S. at 11 n.4. However, the Court failed to note that the particular "rule" was never publicly disclosed while it was supposedly in effect, had never been incorporated into any subsequent statutory enactment, and had never been followed or even mentioned in any judicial proceeding at the time that *Hotchkiss* was decided. Indeed, it is highly unlikely that the *Hotchkiss* Court was even aware that any such rule had ever existed during the brief period that the Patent Act of 1790 was in effect.

18 In so doing, it effectively usurped the legislative authority of Congress which alone has authority to set the conditions for patentability, provided only that it acts within the restraints imposed by the constitutional language.
It had no contemporaneous documentation by any of the Framers to set forth their interpretation of the introductory language of the Clause, nor did it have any other contemporaneous documentation relating to the introductory language. Consequently, it turned to an imaginative—and in many ways incorrect—reconstruction of the views of Jefferson based on letters written over a period of twenty-six years as somehow representing the views and intentions of the Framers with regard to interpretation of the Patent Clause. 149

The gist of its argument was that Jefferson (and presumably the Framers) favored a high standard of patentability, 150 that Jefferson and the patent board which issued patents under the Act of 1790 believed “that the courts should develop additional conditions for patentability,” and that Congress apparently agreed with such an approach. 151 This argument that Congress agreed that interpretation of the constitutional standard of invention should be determined by judicial activism was developed by negative implication. Despite numerous other changes to the patent statutes between 1790 and 1950 Congress set no statutory requirements for patentability “beyond the bare novelty and utility tests reformulated” in the Act of 1793. 152 Why the failure of Congress to set a higher standard of patentability than merely novelty and utility was deemed to be proof that Congress had chosen to defer to judicial activism to set additional standards of patentability was not apparent or obvious. 153 In any case, the relevance of this to the delineation of a constitutional standard of invention was not indicated.

The Graham Court’s reliance on the supposed views of Thomas Jefferson has been sharply challenged. 154 The challenge has been on three levels. The first is that with the exception of his exchange of correspondence with

149 383 U.S. at 7-11.
150 As the Court put it, “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.” 383 U.S. at 9.
151 383 U.S. at 10.
152 Id.
153 Taken to its logical conclusion, this argument suggests that the failure of Congress to be more restrictive than the limitations set in any of the enumerated grants of power permits the Court to set more restrictive standards whenever it sees fit. In other words, this is an argument for a grant of legislative power to the Court which plays havoc with the separation of powers doctrine.
154 See Edward C. Walterscheid, The Use and Abuse of History: The Supreme Court’s Interpretation of Thomas Jefferson’s Influence on the Patent Law, 39 IDEA 195 (1999) (stating the Court has overrated Jefferson’s influence on the early development and interpretation of the patent law through selective use of the historical record); Burchfiel, supra note 19, at 165-67, 209, and 212.
Madison in 1787-1789,\textsuperscript{155} none of his letters pertaining to patent matters ever mention the Patent Clause, much less seek to interpret it. Secondly, there is nothing whatever to indicate that the views held by Jefferson were those of the Framers themselves or those of either the first federal Congresses or the early federal judiciary,\textsuperscript{156} or, for that matter, the general populace.\textsuperscript{157} In this regard, the Graham Court completely ignored the rejection by the second federal Congress of Jefferson’s proposal that a good defense to infringement should be that the invention “is so unimportant and obvious that it ought not to be the basis of an exclusive right.”\textsuperscript{158} Thirdly, in a number of instances the Court either misstated Jefferson’s role\textsuperscript{159} or took his views out of context or attributed views to him that he did not hold. Thus, for example, contrary to the conclusion reached by the Court, Jefferson did not think “that the courts should develop additional conditions for patentability.”\textsuperscript{160} Rather, his views were just the opposite, and he clearly thought that judges were ill-equipped for this responsibility.\textsuperscript{161} Perhaps most

\begin{itemize}
  \item See Letter from Thomas Jefferson to James Madison (Dec. 20, 1787), letter from Thomas Jefferson to James Madison (July 31, 1788), letter from James Madison to Thomas Jefferson (Oct. 17, 1788), and letter from Thomas Jefferson to James Madison (Aug. 28, 1789), in 1 THE REPUBLIC OF LETTERS 1776-1790, at 511, 543, 566 and 627 (James Morton Smith ed.) (1995) (Jefferson stated that he would be pleased if the Constitution would allow for their own literary works and their own inventions for a term not exceeding ___ years). Editors note: Jefferson did not specify the number of years.
  \item Burchfiel, \textit{supra} note 19, at 166 and 167.
  \item As Burchfiel puts it, “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.” \textit{Id.} at 212.
  \item See \textsc{Walterscheid, supra} note 45, at 200-06. According to Burchfiel, “[t]he legal evidence is uncontradicted that in rejecting Jefferson’s proposals, including a statutory nonobviousness standard, 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.” Burchfiel, \textit{supra} note 19, at 209.
  \item Contrary to the Court’s repeated assertion, Jefferson did not draft the Patent Act of 1793. \textsc{Walterscheid, supra} note 45, at 202-12.
  \item Graham v. John Deere Co., 383 U.S. 1, 10 (1966).
  \item In 1813 Jefferson wrote:

Instead of refusing a patent in the first instance, as the board was authorized to do, the patent now issues of course, subject to be declared void on such principles as should be established by the courts of law. This business, however, is but little analogous to their course of reading, since we might in vain turn over all the lubberly volumes of the law to find a single ray which would lighten the path of the mechanic or the mathematician. It is more within the information of a board of academical professors, and a previous refusal of patent would better guard our citizens against harassment by lawsuits.

Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 THE WRITINGS OF THOMAS
\end{itemize}
critically, the *Graham* Court's assertion that Jefferson "clearly recognized the social and economic rationale of the patent system" is belied by the historical record.162

The view that the introductory language of the Clause serves to limit or qualify congressional patent power in any way, much less establish a constitutional standard of invention as stated by the *Graham* Court, has also been strongly challenged.163 Pragmatically, the effect of such an argument is to read the introductory language out of the Clause and to render it meaningless. It is also contrary to the well-established principle that, to the extent possible, legislative language must be read so as to give effect to all of its parts without doing violence to any.164 But saying that the introductory language qualifies the congressional patent power does not per se suggest that it creates a constitutional standard of invention above and beyond the requirement of novelty.165 It does suggest, however, that it qualifies

JEFFERSON 326, 336-37 (Andrew A. Lispcomb et al., eds.) (1904). A year later, he would emphasize the point, arguing that "when so new a branch of science has been recently engraved on our jurisprudence, one with which its professors have till now had no call to make themselves acquainted, one bearing little analogy to their professional education or pursuits," one or two decisions before inferior and local tribunals should not act as precedent to "forever foreclose the whole of the new subject." Letter from Thomas Jefferson to Oliver Evans (Jan. 14, 1814), in 14 THE WRITINGS OF THOMAS JEFFERSON, supra at 63, 67.

162 While the Court clearly recognized that in 1788 and 1789 Jefferson had opposed the Patent Clause, *Graham*, 383 U.S. at 7-8, it failed completely to note that more than two decades later, in 1813 and 1814, he was still not convinced of either the usefulness or the desirability of the patent system. In 1813, he expressed skepticism about the value of patents in the following terms: "generally speaking, other nations have thought that these monopolies produce more embarrassment than advantage to society; and it may be observed that the nations which refuse monopolies of invention, are as fruitful as England in new and useful devices." Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 THE WRITINGS OF THOMAS JEFFERSON, supra note 161, at 334. In 1814 he reiterated his concern that, on balance, the abuses of the patent system through the issuance of what he called "frivolous" patents outweighed its benefits. Letter from Thomas Jefferson to Thomas Cooper (Jan. 16, 1814), in 14 THE WRITINGS OF THOMAS JEFFERSON, supra at 54, 61. It seems apparent that the principle applies with equal force to constitutional language, even though the Court has never expressly so indicated.

163 See Burchfiel, supra note 19 (stating that the only way the Court concluded that the Framers intended both a grant of power and a limitation was by ignoring the actual history of the first patent acts and their construction by the Supreme Court); Kenneth J. Burchfiel, The Constitutional Intellectual Property Power: Progress of Useful Arts and the Legal Protection of Semiconductor Technology, 28 SANTA CLARA L. REV. 473 (1988); Albert B. Kimball, Jr., An Analysis of Recent Supreme Court Assertions Regarding a Constitutional Standard of Invention, 1 AM. PAT. L. ASS'N Q.J. 204 (1973).


165 More recently, however, that seems to be exactly what the Court is implying, although not

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congressional power in other ways. I turn now to one way it does so, namely, by creating a constitutional requirement for utility.

E. UTILITY AS A CONSTITUTIONAL REQUIREMENT

In the patent law, "utility" is synonymous with "usefulness." In 1966 in *Brenner v. Manson* the Supreme Court stated that it is indisputable that "one may patent only that which is 'useful' " and

the concept of utility has maintained a central place in all of our patent legislation, beginning with the first patent law in 1790 and culminating in the present laws provision that 'Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.'

It emphasized that "[t]he basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility." In 1989 it declared that "the novelty and nonobviousness requirements of patentability embody a congressional understanding, *implicit in the Patent Clause itself* (emphasis supplied), that free exploitation of ideas will be the rule, to which the protection of a federal patent is the exception." *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141, 151 (1989).

I shall look more carefully at what the Court meant by "substantial utility"; it will suffice for the moment to note that the Court indicated that utility is a constitutional requirement and not merely a statutory one. In so indicating, however, it failed to suggest what language of the Patent Clause created such a requirement. In his dissent, however, Justice Harlan certainly inferred that the requirement resides in the introductory language "[t]o

expressly stating. Thus in 1989 it declared that "[t]he novelty and nonobviousness requirements of patentability embody a congressional understanding, *implicit in the Patent Clause itself* (emphasis supplied), that free exploitation of ideas will be the rule, to which the protection of a federal patent is the exception." *Bonito Boats v. Thunder Craft Boats*, 489 U.S. 141, 151 (1989).

166 One specific way it does so is by limiting the term which Congress may grant for patents. Indeed, Justice Story made this point as early as 1829 in *Pennock v. Dialogue* when he stated that the "main object" of the patent system authorized by the Clause "was to promote the progress of science and useful arts"; an object that could best be accomplished by giving the invention to the public "at as early a period as possible." 27 U.S. at 19.


168 Id. at 534.
promote the Progress of Science and useful Arts." In other words, to promote the useful arts requires the patented invention to have utility, but what kind of utility? To quote the Brenner majority, "a simple, everyday word [i.e., "useful"] can be pregnant with ambiguity when applied to the facts of life." The difficulty was that Congress had never sought to define what it (or the Constitution for that matter) meant by "useful."

The question of the meaning of "useful" seems to have been first raised in 1817 when it was argued that it meant "of general utility," i.e., better than existing devices of the type patented. Not so, said Justice Story in his capacity as circuit judge:

By useful invention, in the statute, is meant such a one as may be applied to some beneficial use in society, in contradistinction to an invention, which is injurious to the morals, the health, or the good order of society. It is not necessary to establish, that the invention is of such general utility, as to supercede all other inventions now in practice to accomplish the same purpose. It is sufficient, that it has no obnoxious or mischievous tendency, that it may be applied to practical uses, and that so far as it is applied, it is salutary. * * * The law . . . does not look to the degree of utility; it simply requires that it shall be capable of use, and that the use is such as sound morals and policy do not discountenance or prohibit.

Story's view that the utility must be socially beneficial, that is to say, not illegal, immoral, or adverse to public policy, was generally followed into the twentieth century, primarily in two areas: gambling devices (including inventions that could be used as a part of such a device) and inventions

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169 Id. at 536.
170 Id. at 529.
172 As examples, he stated "a new invention to poison people, or to promote debauchery, or to facilitate private assassination, is not a patentable invention." Lowell, 15 F. Cas. at 1019.
173 See, e.g., Meyer v. Buckley Mfg. Co., 15 F. Supp. 640 (N.D. Ill. 1936); Brewer v. Lichtenstein, 278 F. 512 (7th Cir. 1922); Schultz v. Holtz, 82 F. 448 (N.D. Cal. 1897); and Nat'l Automatic Device Corp. v. Lloyd, 40 F. 89 (N.D. Ill. 1889).
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(including medicines) intended to defraud. Also falling into this broad category are the utterly worthless or frivolous patents, for example, those sought for perpetual motion machines. There has, however, in recent years been a marked reluctance of courts to invalidate patents for lack of utility based on social benefit or morality arguments.

In 1999 the Federal Circuit cited to Brenner as support for the view: "The threshold of utility is not high: An invention is 'useful' . . . if it is capable of providing some identifiable benefit." Unfortunately, Brenner does not support any such view, stating as it does a constitutional requirement of "substantial utility." Until Brenner, Story's conclusion that as long as the invention has some utility, it does not have to accomplish its purpose better than taught in the existing art, was treated as the law. But Brenner's statement that "substantial utility" is required for patentability under the Constitution seemed to challenge this conclusion. But if "substantial utility" was required by the Constitution, Brenner provided no indication of how such a standard was to be defined. As a practical matter in the years since Brenner courts have made no attempt to apply the

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175 This was a popular term of derision for worthless patents in the early nineteenth century.


177 See, e.g., Juicy Whip, Inc. v. Orange Bang, Inc., 185 F.3d 1364, 51 U.S.P.Q.2d (BNA) 1700 (Fed. Cir. 1999) (rejecting argument that claimed invention was immoral because it was designed to make people believe something that was not true); and In re Murphy, 1977 WL 22879, 200 U.S.P.Q. (BNA) 801 (Bd. App. 1977) (overturning rejection predicated solely on the ground that the device sought to be patented was useful solely for gambling purposes). The Federal Circuit in Juicy Whip declared that "the principle that inventions are invalid if they are principally designed to serve immoral or illegal purposes has not been applied broadly in recent years." 185 F.3d at 1366.

178 Juicy Whip, 185 F.3d at 1366.

179 Brenner, 383 U.S. at 534.

180 The Brenner majority dismissed Story's views as requiring it to do no more than to decide whether the invention is "frivolous and insignificant" which it believed no easier to decide than the one it was addressing. 383 U.S. at 533.

181 It is interesting to note that Brenner and Graham were both decided by the same Court in 1966 and both failed to indicate the nature of the heightened standard for patentability said to be required by the Constitution.
"substantial utility" criterion set forth therein or to require that an invention must somehow have more utility than taught in the existing art.\textsuperscript{182}

The terms "useful" and "discoveries" as they appear in the Patent Clause are susceptible of very broad meanings or interpretations. In the absence of any indication that the Framers intended them to be narrowly interpreted, it is reasonable to suppose that how broadly they were to be interpreted was left to the discretion of Congress. While Congress from the inception of the patent law has made some attempt to define "discoveries," at least indirectly through a definition of patentable subject matter,\textsuperscript{183} it has never sought to provide any definition whatever of "useful" aside from the requirement that an invention be useful to be patentable. Thus in the absence of any indication to the contrary, a presumption exists that Congress intended "useful" to be read as broadly in the patent statutes as it appears in the Patent Clause.\textsuperscript{184}

The \textit{Brenner} majority, however, applied just the opposite presumption. In its view, if utility or usefulness is read so broadly "as to allow the patenting of any invention not positively harmful to society, it places such a special meaning on the word 'useful' that we cannot accept it in the absence of evidence that Congress so intended."\textsuperscript{185} The Court carefully failed to note that this supposedly "special" meaning of "useful" is in fact fully in accord with the dictionary definition of the term, and instead drew the remarkable conclusion that in the absence of specific evidence that Congress intended to use the term in accordance with its dictionary definition, such a definition of the term could not apply to it as used in the patent statute.

\textsuperscript{182} See, e.g., \textit{Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.}, 807 F.2d 955, 960 n.12, 1 U.S.P.Q.2d (BNA) 1196, 1199 n.12 (Fed. Cir. 1986) ("It is possible for an invention to be less effective than existing devices but nevertheless meet the statutory criteria for patentability.").

\textsuperscript{183} See \textit{Brenner}, 383 U.S. at 528-29 (citing to various patent acts beginning with the Act of April 10, 1970 and to 35 U.S.C. § 101 (1964)).

\textsuperscript{184} Justice Harlan, concurring in part and dissenting in part in \textit{Brenner}, certainly so argued. 383 U.S. at 536-37. Kreiss argues that the "useful arts" subject matter requirement is distinct from the constitutional requirement that an invention be "useful" in order to be patentable. In his view, both the Patent Office and judges have "confused and conflated" the two. In particular, he suggests that Judge Newman, dissenting in \textit{In re Schrader}, 22 F.3d 290, 297, 30 U.S.P.Q.2d (BNA) 1455, 1460 (Fed. Cir. 1994) improperly equated the two by stating that patentable subject matter must be within the "technological arts" before the claimed subject matter could be demonstrated to be "useful." Robert A. Kreiss, \textit{Patent Protection for Computer Programs and Mathematical Algorithms: Constitutional Limitations on Patentable Subject Matter}, 29 N.M. L. REV. 31, 74-75 (1999). But the only basis for a constitutional utility requirement for patentability is the constitutional language requiring the purpose of a patent to be to promote the progress of the useful arts.

\textsuperscript{185} 383 U.S. at 533.
This, of course, is the exact opposite of the usual approach taken to interpreting statutory language.

Be that as it may, the specific holding in *Brenner* was that a new and unobvious process for creating a chemical compound did not have patentable utility in the absence of a showing of patentable utility for the compound thus created. It is important to note that holding was predicated on statutory interpretation and not on interpretation of the constitutional meaning of "useful" in the Patent Clause.

IV. PATENTABLE SUBJECT MATTER

To what extent, if any, does the Patent Clause limit or circumscribe congressional discretion to define patentable subject matter? In the absence of any Supreme Court interpretation of the meaning to be given to either "inventors" or "discoveries" as these terms appear in the Clause or of any record as to what the Framers intended these terms to mean, it is reasonable to turn to the definitions of these terms used at the end of the eighteenth century when the Constitution was ratified. Those definitions were exceedingly broad, and in and of themselves gave Congress wide and apparently unlimited discretion to define patentable subject matter.

But if, as I have earlier suggested, terms in the Clause cannot be read or interpreted in isolation, and if the introductory language qualifies the patent power given to Congress as the Supreme Court in *Graham v. John Deere Co.* most emphatically stated it does, then a plausible argument can be made that the power of Congress to define patentable subject matter is not plenary, but rather is constrained "to the promotion . . . of useful arts." That is to say, patentable subject matter constitutionally must be that which

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116 Seidel, for example, notes that "[n]o historical writings or events have been found analyzing the [Clause]." See Seidel, *supra* note 80.


118 I use the phrase "patentable subject matter" in the same manner that Adelman et al. use "patent-eligibility," namely, "to describe the subject matter open to patenting, as opposed to the word 'patentability.' The latter term implies not just that the subject matter is appropriate under the statute, but that the invention has been approved following an individual determination of novelty, nonobviousness and the other requisites." MARTIN J. ADELMAN ET AL., CASES AND MATERIALS ON PATENT LAW 83 (St. Paul 1998).

119 See *Graham*, 383 U.S. at 5-6 (citing to the concurring opinion of Justice Douglas and Black in *A. & P. Tea Co. v. Supermarket Corp.*).
promotes the useful arts. This in turn requires a closer look at what is meant by “useful arts” in the Clause. 190

Again, however, the Framers provided no indication of what they meant by this term. 191 Seidel suggests that in 1787 it meant useful or helpful trades. 192 According to Coulter, “[i]t seems clear that ‘useful arts’ (as a unitary technical term) embraced the so-called industrial, mechanical and manual arts of the 18th century . . .” 193 Lutz, in turn, thinks it is just as clear “that ‘useful arts’ meant what we now call ‘technology,’ or ‘applied science.’” 194 He argues that the words “useful arts” were deliberately used to broaden the field of patentable subject matter from “new manufactures” as used in the Statute of Monopolies because “[b]y the year 1787 it was being recognized even in Great Britain that the phrase ‘new manufactures’ was an unduly limited object for a patent system, since it seemed to exclude new processes.” 195 Lutz may be correct in this regard, but there is no contemporaneous documentation to indicate that the Framers either understood or intended a distinction of this type.

The statutory definition of patentable subject matter has changed but little since the Patent Act of 1790. That Act authorized patents for “any useful Art, Manufacture, Engine, Machine, or Device, or any improvement therein.” 196 The Act of 1793 changed this to read “any new and useful art, machine, Manufacture or composition of matter, or any new and useful improvement [therein].” 197 This definition of patentable subject matter was

190 The point was made as early as 1952 when Coulter emphasized that: “The starting point of inquiry as to the field of subject matter embraced by the statutory proviso should be this Constitutional reference to ‘useful Arts’ (emphasis in the original).” Robert I. Coulter, The Field of the Statutory Useful Arts, 34 J. PAT. OFF. SOC’Y 487 (1952). More recently the Supreme Court has stated: “The subject matter provisions of the patent law have been cast in broad terms to fulfill the constitutional and statutory goal of promoting ‘the Progress of Science and the useful Arts . . .’” Diamond v. Chakrabarty, 447 U.S. 303, 315, 206 U.S.P.Q. (BNA) 193 (1980).

191 I have elsewhere suggested that the words “useful arts” were suggested to the Framers by the creation of a new group called the Pennsylvania Society for the Encouragement of Manufactures and the Useful Arts in Philadelphia during the time the federal convention was meeting there. WALTERSCHEID, supra note 45, at 51-52.

192 Seidel, supra note 80, at 10.

193 Coulter, supra note 190, at 496.

194 Lutz, supra note 87, at 771.


196 Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 109, 110.

197 Act of Feb. 21, 1793, ch. 11, § 1, 1 Stat. 318, 319.
interpret the statutory language. The Court of Customs and Patent Appeals, however, has several times "pointed out that the present day equivalent of the term 'useful arts' employed by the Founding Fathers is 'technological arts.'" In light of more recent judicial determinations concerning the patentability of new life forms and methods of doing business, this is too narrow a definition of "useful arts."

Let us return for a moment to the interpretation of "invention" and "discoveries" in the context of the Clause. Obviously, the term "invention" does not appear therein, but if an inventor is one who invents, then clearly an inventor is one who makes an invention. It thus is relevant to ascertain whether there is any distinction between "invention" and "discovery" for the purposes of determining whether there is a constitutional limitation (aside from novelty and utility as already discussed) on what constitutes patentable subject matter.

The Framers never indicated what they meant by the terms "inventors" and "discoveries" but they appear to have viewed the terms "invention" and "discovery" as synonymous. In any case, Congress certainly seems to have assumed them to be synonymous. As I have indicated, the definition of discovery at the end of the eighteenth century was exceedingly broad, so that at least in principle the definition of patentable subject matter allowed by the Constitution was also exceedingly broad. The issue was further complicated at the end of the eighteenth century by the frequent reference to the "principles" of an invention, whatever that was intended to mean.

The Constitution does not expressly state what quid pro quo, if any, the inventor is required to provide in return for the limited-term exclusive right encompassed by a patent. It was only in the decade immediately preceding the federal convention that the common law courts had decided that an inventor was required to provide a patent specification containing an enabling disclosure, i.e., one teaching those skilled in the art with which the

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200 See infra notes 282-90 and accompanying text.

201 The Patent Act of 1793 refers to "invention or discovery" § 1, 1 Stat. at 321. See also Act of Apr. 10, 1790 § 1, 1 Stat. at 110 (referring also to "invention or discovery"). See also supra note 26 and accompanying text.

202 See supra note 81 and accompanying text.
the federal convention that the common law courts had decided that an inventor was required to provide a patent specification containing an enabling disclosure, i.e., one teaching those skilled in the art with which the invention was most closely identified to make and use the invention.203 Prior to this time, it was not at all clear what the purpose of a patent specification was, other than to identify the invention in some general sense. Much of the confusion about the differences, if any, between discovery, invention, and principles arose out of this fact and was generated by none other than that most famous of English inventors, James Watt.

Watt's patent on his major improvement in the steam engine was issued in 1769, but not before he had spent considerable time and effort trying to decide what should be included in his specification.204 He clearly considered the specification an important matter, but it is unlikely that either he or those he consulted thought that it would have to be fully enabling in the manner set forth by Mansfield nine years later in Liardet v. Johnson.205 But they were not entirely certain on the point. Thus, in February 1769 he received advice that

... you should neither give drawings nor descriptions of any particular machinery, (if such omission would be allowed at the office) but specify in the clearest manner that you can, that you have discovered some principles, and thought of new applications of others, by means of both which joined together, you intend to construct steam engines of much greater powers, and applicable to a much greater number of useful purposes than any which hitherto have been constructed, that to effect each particular purpose you design to employ particular machinery, every species of which may be ranged in two classes. One class for


205 Id. See also Walterscheid, supra note 203.
producing reciprocal motions, and another for producing motions round axes. As to your principles, we think they should be enunciated (to use a hard word) as generally as possible, to secure you as effectually against piracy as the nature of your invention will allow.\textsuperscript{206}

This emphasis on "principles" as opposed to description of specific embodiments seems peculiar today but it was not in the context of the times. It has been argued that this advice badly served Watt for two reasons, because in consequence thereof he failed to provide drawings as a part of the specification and he sought to patent "a principle of action and not an application of a principle."\textsuperscript{207} But in the eighteenth century, seeking to patent only "an application of a principle" was perceived as fraught with difficulties by both patentees and those from whom they sought legal advice.

This was in an era when the concept of mandatory specification was relatively new, and it had never been laid down either by statute or common law exactly what a specification should do. It would be well into the next century before the idea of using claims as a means of defining the invention would be developed. As a patentee wrote in 1784, some six years after \textit{Liardet v. Johnson} had been decided and after consulting with Watt and others viewed as specialists in patents,

they all agreed in saying that there was no need of particular descriptions and drawings, because the patent was taken upon the principle which may be applied to numberless shapes and forms, whereas giving particular description and drawings would be confining ourselves to these particular forms and enabling others to use the same principle under other forms.\textsuperscript{208}

This language rather accurately describes the dilemma patentees perceived themselves to be in. Provide an insufficient description of the invention and the courts would invalidate the patent; provide too detailed a description of

\textsuperscript{206} Robinson, \textit{supra} note 204, at 120-21.
\textsuperscript{207} \textit{Id.} at 120 (quoting H.W. DICKINSON \& JAMES WATT, CRAFTSMAN AND ENGINEER 52 (Cambridge 1936)).
\textsuperscript{208} \textit{Id.} at 121.
particular embodiments and the courts would construe the invention to be limited to the particular embodiments described. This in turn would permit others through minor change or modification to practice the invention without infringing the patent. It was to avoid what patentees perceived to be piracy of their inventions through such minor change or modification that they sought to describe the inventions in terms of general principles rather than specific embodiments. It would take many years for the common law to disabuse them of the idea that a patent covered the general principles under which the invention was perceived to operate.209

By special act of Parliament in 1775, the term of Watt’s patent was extended to 1800.210 This extraordinary extension coupled with the significant commercial success of the new steam engines based on the patent led almost inevitably to extensive litigation. One of these cases, Boulton v. Bull,211 decided in 1795, would have an impact on the early development of both British and American patent law. It is of interest here because of the views expressed therein by the judges on what constitutes patentable invention under the Statute of Monopolies.

This was part of the continuing effort by the common law courts to deal with the issue of the meaning to be given to the phrase “any manner of new manufactures” in the Statute.212 An initial article of faith, which would continue to be given a great deal of lip service but which was honored more in the breach than in reality, was that the Statute was an enactment of existing common law and should be interpreted as such. A classic example had to do with the treatment of improvement inventions. Coke had expounded the common law view, predicated on a holding in Bircot’s Case, that the Statute forbade the granting of a patent for any improvement in an existing manufacture.213 As a practical matter, by early in the eighteenth

209 Indeed the idea still seems to have been prevalent as late as 1829, although by that time there seems to have been a consensus that patents “could not be granted on abstract principles.” Robinson, supra note 204, at 123.

210 The Fire Engine Act, 15 George III, c. 61 (1775).


212 Section 6 of the Statute reads in relevant part “... any declaration before mentioned [banning monopolies] shall not extend to any letters patent and grants of privilege for the term of fourteen years or under, hereafter to be made, of the sole working or making in any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures...” Statute of Monopolies, 21 James I, c. 3; 7 Statutes at Large 255.

century the law officers had come to realize that many of the inventions for which patents were sought could be characterized as improvements over or in existing manufactures, but they chose at least tacitly to ignore this in recommending that patents be granted for these inventions. It was not surprising that when infringement actions were attempted at equity (as opposed to actions at common law which came later), the defense was frequently that the invention was merely an improvement over existing technology and hence the patent was invalid.\textsuperscript{214} When the matter came before Lord Mansfield in 1776 in \textit{Morris v. Bramson},\textsuperscript{215} which seems to have been one of the first common law cases to address the issue, he accepted the practical reality and held that improvement inventions were patentable. In his view, to hold otherwise “would go to repeal almost every patent that ever was granted.”\textsuperscript{216}

This was all well and good insofar as it went, but what did the term “manufacture” as used in the Statute mean? What did it actually encompass? The definitions given in the various opinions in \textit{Boulton v. Bull} are interesting if only partially illuminating. Boulton\textsuperscript{217} and Watt argued that “manufacture” meant “any thing made or produced by art.”\textsuperscript{218} This seemed to suggest that some form of skill or special trade needed to be involved. It also seemed to imply that nothing discovered by accident could be the subject of a patent because it would not have been “made or produced by art.” Justice Buller refused to accept any such contention, saying “whether the manufacture be... produced by accident or by art, is immaterial.”\textsuperscript{219} He also stated, however, that:

\begin{quote}
The word manufacture is descriptive either of the practice of making a thing by art, or of the thing when made. The invention therefore of any instrument used in the process of making a thing by art, is a manufacture, and the subject of
\end{quote}

\textsuperscript{214} MacLeod cites several instances of this that occurred before 1750. See CHRISTINE MACLEOD, \textit{INVENTING THE INDUSTRIAL REVOLUTION, THE ENGLISH PATENT SYSTEM, 1660-1800} 64-68 (Cambridge 1988).

\textsuperscript{215} 1 Carp. P.C. 30, 1 Abbott’s P.C. 21 (King’s Bench 1776). This case is also frequently cited as \textit{Morris v. Bramson}.

\textsuperscript{216} 1 Abbott’s P.C. at 22.

\textsuperscript{217} Boulton was Watt’s senior partner and owned a two-thirds interest in Watt’s patent.

\textsuperscript{218} 2 H. Bl. at 468, 126 Eng. Rep. at 653.

\textsuperscript{219} 2 H. Bl. at 486; 126 Eng. Rep. at 663.
Justice Heath was of the view that patentable manufactures fell into two classes:

The first class includes machinery, the second class substances (such as medicines) formed by chemical or other processes, where the vendible substance is the thing produced, and that which operates preserves no permanent form. In the first class, the machine, and in the second the substance produced, is the subject of the patent.\(^2\)

Moreover, "[t]hat which is the subject of a patent . . . ought to be that which is vendible, otherwise it cannot be a manufacture."\(^2\) Finally, Chief Justice Eyre noted that "[i]t was admitted in the argument at the bar, that the word 'manufacture' in the statute . . . applied not only to things made, but to the practice of making, to principles carried into practice in a new manner, to new results of principles carried into practice."\(^2\)

Although a modern analyst of the English patent system has stated that "[a]ccording to the Statute of Monopolies a patent could not be granted for an abstract or philosophical principle,"\(^2\) there was no language in the Statute that could literally be so interpreted. Moreover, Lord Coke, who was deemed to be the earliest authority on the Statute and provided the first detailed analysis of it,\(^2\) is totally silent on the point. In the eighteenth century, patentees and those who gave advice concerning patents were certainly of the view that the Statute did not preclude the patenting of general principles of operation.\(^2\)

As has been noted, Watt in 1769 was advised to specify that he had discovered "some principles" and to enunciate them as generally as possible in his specification.\(^2\) He followed this advice,\(^2\) and as a result found


\(^2\)Id.

\(^2\)H. Bl. at 492, 126 Eng. Rep. at 666.


\(^2\)See Walterscheid, supra note 213, at 876-79.

\(^2\)MacLeod, for example, suggests that as early as 1720 patents were being granted for general principles of operation. See MACLEOD, supra note 214, at 63-64.

\(^2\)See supra notes 204-06 and accompanying text.

\(^2\)But from time to time, he seems to have had some difficulty in defining what he meant by his "principles." In at least certain of his works, his defining principles of how various steam engines operated
As has been noted, Watt in 1769 was advised to specify that he had discovered "some principles" and to enunciate them as generally as possible in his specification. He followed this advice, and as a result found himself confronted with the argument in Boulton v. Bull that his patent was invalid because it was for a principle rather than particular embodiments pertaining to his improved steam engine. Nonetheless, he must have felt reasonably comfortable that his approach would withstand common law scrutiny because in 1776 Chief Justice Eyre had suggested that a "principle" could be the subject of a patent.

Imagine his dismay then when the four judges hearing the case, including Chief Justice Eyre, unanimously held that an abstract principle could not be the subject of a patent. Fortunately for him two of them were prepared to accept the view that his specification taught more than merely the application of a principle of nature. Although there would continue to be some argument about it for several decades, the common law view at the end of the eighteenth century was that a principle of nature could not be patented, because this amounted to patenting knowledge of the physical universe which should be available for all to use.

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227 See supra notes 204-06 and accompanying text.

228 But from time to time, he seems to have had some difficulty in defining what he meant by his "principles." In at least certain of his works, his defining principles of how various steam engines operated come very close to a description of simple natural forces. See Robinson, supra note 204, at 122-23, n.22.

229 Bull's counsel argued that:

The reason seems obvious why this privilege of a monopoly which is to be granted by the Crown should not be granted merely for the Principle or for the first idea which may occur to an ingenious mind because if that is the case he is to reserve to himself the sole power of every possible improvement which may be made upon that idea in bringing it forward to perfection in the shape of a complete instrument.

Robinson, supra note 204, at 122.

230 DUTTON, supra note 224, at 73.

231 WILLIAM HOLDSWORTH, 11 A HISTORY OF ENGLISH LAW 429 (London 1932). As quoted by Holdsworth, Chief Justice Eyre stated that a patent was given "not for a principle, but for a process." Justice Buller argued that:

The very statement of what a principle is, proves it not to be a ground for a patent. It is the very first ground and rule for arts and sciences, or in other words the elements and rudiments of them. A patent must be for some new production from those elements, and not for the elements themselves.

Id. at n.7. Robinson quotes Chief Justice Eyre as also stating that "[T]here doubtless is there can be no Patent for a mere Principle but for a Principle so far embodied and connected with corporeal Substances as to be in a condition to act . . . I think there may be a Patent for." Robinson, supra note 204, at 123.
If at the end of the century it had become the common law that "any manner of new manufactures" as used in the Statute encompassed improvement inventions but did not cover principles of nature (although there would remain considerable dispute as to what constituted a principle of nature), there was mass confusion as to the extent to which this phrase covered so-called "method" or "process" inventions. Again Watt's experience is worthy of note. Despite the fact that his improved steam engines were obviously an article of manufacture, he chose to obtain his patent for a "Method of diminishing the consumption of fuel in fire-engines." He did this because he believed that a patent for a method provided broader protection than one directed to a steam engine per se. His approach seems to have been a common one in the eighteenth century, and numerous patents for "methods" were granted by the crown.

But could any sort of "method" be construed as "any manner of new manufactures" as contemplated by the Statute? At the end of the eighteenth century there was no consensus whatsoever among the common law judges that such a construction was appropriate. As early as 1776 Chief Justice Eyre had taken the position that a method could properly be patented, but in 1795 in *Boulton v. Bull* two of the judges had contended that no patent could be granted for a method unless a new and vendible substance was produced. This caused Watt thereafter to take a different tack and argue in 1799 in *Hornblower v. Boulton* that his invention was really an improvement over earlier steam engines.

In *Hornblower v. Boulton* Lord Kenyon stated that "having now heard every thing that can be said on the subject, I have no doubt in saying that this is a patent for a manufacture, which I understand to be something made by the hands of man (emphasis supplied)." This clearly was a broader

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232 In the eighteenth century the term "fire engine" was used to denote what would today be called a steam engine.

233 Robinson, supra note 204, at 120 and 123. In *Boulton v. Bull*, Chief Justice Eyre stated his belief that two-thirds to three-fourths "of all patents granted since the statute passed, are for methods of operating and of manufacturing, producing no new substances, and employing no new machinery." 2 H. Bl. at 494-95, 126 Eng. Rep. at 667. Both Robinson, id. at 132, n.54, and DUTTON, supra note 224, at 73, quote Eyre to the same effect but with somewhat different language.

234 DUTTON, supra note 224, at 73.

235 Robinson, supra note 204, at 132; and DUTTON, supra note 224, at 74.


237 DUTTON, supra note 224, at 74.

definition of “manufacture” than even Watt had argued for four years earlier in *Boulton v. Bull*. It did not require “art” to be involved and thus was at least suggestive of the view that patentable invention could occur by accident. Nor did it require that an invention be “vendible” in order to be considered a manufacture. It implicitly seemed to indicate that products of nature were not patentable since not “made by the hands of man.”

Lord Kenyon’s definition of “manufacture” did not specifically address the issue of whether “methods” fell within the ambit of “manufactures” as used in the Statute of Monopolies. Rather, he was of the view that Watt was actually claiming “a monopoly for an engine or machine, composed of material parts, which are to produce the effect described,” 239 despite the fact that the patent was clearly titled to be for a method. In essence, he argued that a patent ostensibly for a method was really a patent for the substance produced by the method or for the apparatus which produced the effect intended by the method of operation.

Nonetheless, to the extent the judges were prepared to accept that certain methods involving new and vendible substances or apparatus were patentable, this did not mean that there was consensus that any and all methods were patentable. Indeed, as noted above, two of the judges in *Boulton v. Bull* were clearly of the view that there could be no patent for a new process of producing an old product. As one of the earliest texts on the patent law stated in 1806: “most of the patents now taken out, are by name, for the method of doing particular things: and where the patent is for only a method, if it be not affected or accompanied by a manufacture, it seems the patent is not good.” 240 By this was apparently meant “affected or accompanied by a manufacture [which was novel and patentable in its own right].” This inability to clearly distinguish between method or process and apparatus or product would present grave difficulties for the English patent law in the years to come. 241 Those same difficulties would also appear in the early U.S. patent law.

Watt was perhaps as expert as anybody on the state of the patent law in England as the eighteenth century came to a close, but when it came to what

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239 Id.
240 Dutton, supra note 224, at 74 (quoting William Hands, The Law and Practice of Patents for Inventions 6 (1806)).
241 It was not until 1842 that it was finally settled that “manufacture” as used in the Statute of Monopolies includes “processes” within its ambit. See Crane v. Price, 1 Web. P.C. 393, 134 Eng. Rep. 239 (1842).
constituted patentable invention he was as uncertain as any other inventor or lawyer of the time. Sometime about 1795 he summed up his "Doubts and Queries upon Patents" as follows:

[1] Whether the King can grant a patent for a method of doing or performing any mechanical process
[2] Whether in such case patent would be valid without a description of an organized machine
[3] Whether a man improving his invention after patent granted, does not invalidate his patent
[4] Whether a patentee refusing to add his improvement to an old machine does not render patent void
[5] Whether a patentee asking more than a fair provision does not invalidate
[6] Whether a patent for an improvement on an old invention is valid
[7] Whether patent for new mode of using old instruments is valid
[8] Whether a patent for a chemical process is valid

Although it has been argued that none of these questions had been satisfactorily answered by the common law in 1795, the answer to query [6] was reasonably clear. The others, however, were still very much up in the air. The infant United States found these and many other questions unanswered when it turned to the common law to interpret its own brand new patent law.

At the end of the eighteenth and the beginning of the nineteenth century there was a marked tendency for American inventors, just as English inventors, to speak of the "principles" of their invention. The reasoning was the same as in England, namely, a desire to avoid being literally limited to particular embodiments described in the specification. Thus, for example, in 1792 Joseph Barnes suggested that any new patent law should provide that "a person shall be entitled to obtain a patent, provided he shall have discovered a new principle in case of machines, or shall have discovered an improvement in the principle of any machine which is free or

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242 Robinson, supra note 204, at 131.
243 Id.
This language was at least partially incorporated into the Patent Act of 1793. The earliest American patent case to discuss a meaning to be attributed to “principle” was Whitney v. Carter decided in 1810. Eli Whitney had sued Carter for infringement of his cotton ginning patent. In defense, Carter alleged that Whitney’s gin was not novel, in that an earlier machine was the same “in principle” as Whitney’s gin. In response, Whitney’s counsel made two distinct arguments. The first was that even if the “principle” of the two machines was the same, Whitney had applied it in an entirely new fashion and for a distinct purpose that was patentable. Secondly, he contended that the “principle” of the two machines was entirely different.

Of particular interest to the present discussion is that:

He defined the term “principle,” as applied to the mechanic arts, to mean the elements and rudiments of those arts, or, in other words, the first grounds and rule for them. That for a mere principle a patent cannot be obtained. That neither the element, nor the manner of combining them, nor even the effect produced can be the subject of a patent; and that it can only be obtained for the application of this effect to some new and useful purpose.

The court agreed “that the legal title to a patent consists, not in a principle merely, but in an application of a principle, whether previously in existence or not, to some new and useful purpose.”

In 1813 Justice Story in his capacity as circuit judge amplified the point when he declared:

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244 BARNES, supra note 30, at 30-31.
245 Section 2 of the Act provided:
that any person who shall have discovered an improvement in the principle of any machine . . . which shall have been patented, and shall have obtained a patent for such improvement, he shall not be at liberty to make, use, or vend the original discovery, nor shall the first inventor be at liberty to use the improvement.
246 29 F. Cas. 1070 (C.C.D. Ga. 1810).
247 29 F. Cas. at 1071.
248 Id.
249 29 F. Cas. at 1072-73.
So if the principles of the machine are new, either to produce a new or an old effect, the inventor may well entitle himself to the exclusive right of the whole machine. By the principles of a machine, (as these words are used in the statute) is not meant the original elementary principles of motion, which philosophers and science have discovered, but the modus operandi, the peculiar device or manner of producing any given effect. 2

Five years later, he would state, "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." 2

In essence, the courts sought to distinguish between physical or scientific principles in the abstract and the applications of such principles to produce a useful result. Taken in the abstract, scientific or physical principles were held not to be patentable. But because they viewed the application of such principles to produce useful technological results as a promotion of the progress of the useful arts (although they almost never phrased it in this fashion), they held that such application could indeed be patentable, but this generally required some change or improvement in the means used to effect the application. 2

Nonetheless, even in the middle of the nineteenth century, the Supreme Court found itself addressing general problems of the patentability of "principles":

The word principle is used by elementary writers on patent subjects, and sometimes in adjudications of courts, with such a want of precision in its application, as to mislead. It is admitted that a principle is not patentable. A principle, in the abstract, is a fundamental truth; an original cause; a motive; and these cannot be patented, as no one can claim in either of them an exclusive right. Nor can an exclusive

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22 For an interesting early discussion of these issues, see WILLARD PHILLIPS, THE LAW OF PATENTS FOR INVENTIONS; INCLUDING THE REMEDIES AND LEGAL PROCEEDINGS IN RELATION TO PATENT RIGHTS 95-108 (1837).
right exist to a new power, should one be discovered in addition to those already known. * * * A new property discovered in matter, when practically applied, in the construction of a useful article of commerce or manufacture, is patentable; but the process through which the new property is developed and applied, must be stated, with such precision as to enable an ordinary mechanic to construct and apply the necessary process.253

Oliver Evans was the first in the United States to make a serious attempt to define what constituted patentable subject matter. In 1813 he posed the question: "What is the original discovery in a new and useful improvement in any art, machine, manufacture, or composition of matter?" and answered:

It is the new and useful effect or result produced by the characteristic principles of the machine and may consist of:

1. The discovery of the application of a new principle by means of old and known machines, to produce a new and useful result.254 In this case the application of the principle and result will be secured.

2. The discovery of a new machine to produce a known effect or result, with less labour or expense. In this case the patent will be for the machine.

3. The discovery of a new combination of known machines to produce a new and useful result.255 In this case, the combination will be secured by patent, as well as the new result.

4. The application of known principles to produce a new and useful result. In this case the result will be secured.

5. The discovery of the application of a known machine, to a new use.256 Here the new application will be secured, if it

254 Thomas Jefferson parted company with Evans on this point and absolutely refused to acknowledge that a new use of an old machine was patentable. For Jefferson’s views on the patent law in the first two decades of the nineteenth century, see Edward C. Walterscheid, Patents and the Jeffersonian Mythology, 29 JOHN MARSHALL L. REV. 269, 298–311 (1995).
255 Here too, Jefferson initially disagreed, but after more thought changed his mind. Id.
256 Jefferson strongly disagreed. Id.
be useful, by producing the effect with less labour or expense.

6. The discovery of an improvement on a known machine, to fit it for applying to a new use, to produce a useful result. Here the improvement and new application will be secured.

7. The discovery of a new and useful improvement in the process of any art or manufacture, although on experiment no means may yet be known, by which the improvement may be carried into effect with profit by the manufacturer. Here the improvement in the process will be secured, although the use can hardly be ascertained.

8. The discovery of a new machine that was necessary to carry a new process into effect that has been discovered by another. Here the machine is the discovery, and will be secured for all purposes for which it will apply.

9. The discovery of a new and improved process in any art or manufacture, and also a set of machines, some improved, others altogether new, and their combination, to carry the improved process into effect to produce a new and useful result. In this case, the new improved process, and the new result in the discovery, will be secured; also the improved and new machines are discoveries, and will be secured for all the uses to which they apply.

10. The discovery of the application of a known power or principle to a new and useful purpose, as the extension of the application to move a known machine with greater force, by the discovery of a new and improved form of the machine, rendering it susceptible of the new or extended application, so as to produce a greater effect, or a new or more useful result, or at a less expense. In this case the original discovery consists in the new or extended application, and in the change of or improved form of the machine, both will be secured either jointly or separately.

11. The discovery of an unknown principle, applicable to useful purposes without discovering the means of profitable application. Here the principle discovered will be secured by our laws, differing from British.
12. The discovery of the means of profitably applying a useful principle, discovered by another, to a useful purpose. Here the means of application will be secured, subject to the prior right of the discoverer of the principle.

13. The discovery of an improvement in the mode or means of the application of a principle. Here the improvement will be secured, subject to the prior right of the discoverer of the principle, also to the first discoverer of the means of application; for no prior right shall be discharged or lessened by a subsequent grant of protection.

14. The discovery of an unknown plant and its uses. Here the plant will be secured, and all the uses that are specified by the patentee.

15. The discovery of new uses of a known plant. Here the new uses will be secured, subject to the prior right of the discoverer of the plant, during the patent term.\(^\text{257}\)

Evans was well ahead of his time with regard to certain of these items, for example, plant patents, and others that would never be judicially interpreted to constitute patentable subject matter, for example, the discovery of a new scientific principle. Nevertheless, it is apparent that Evans had given more serious thought to what might constitute patentable subject matter than had anyone else in the country. But he still had some difficulty in coming to grips with the idea that methods should be patentable, although he was certainly amenable to it.

Although the Supreme Court has stated that "a process has historically enjoyed patent protection because it was considered a form of 'art' as that term was used in [the Patent Act of 1793],\(^\text{258}\) it was not at all clear in 1793 that the phrase "useful art[s]" as it appeared in the Patent Clause or the 1793 Act encompassed processes within the ambit of patentable invention. While the 1793 Act made reference to "the process of any composition of matter,"\(^\text{259}\) no one knew for certain what that was intended to mean.

\(^{257}\) OLIVER EVANS, (Patrick N. Elisha, Poet Laureate, pseud.) PATENT RIGHT OPPRESSION EXPOSED; OR, KNAVERY DETECTED 137-39 (Philadelphia 1813) (writing in an address to unite all good people to obtain a repeal of the Patent Laws. Much of this work was intended as a satire on those opposed to the patent laws, but he incorporated his views on what the patent law should be in it.).


Jefferson, for one, could never conceive of a process or method of doing something as being patentable. Boulton v. Bull, decided in 1795, set the common law view that certain processes or methods were patentable, but the issue was not early addressed in the American judicial determinations.

It was not until 1854 that the Supreme Court declared that "A process, eo nomine, is not made the subject of a patent in our act of Congress [but rather] is included [in] the general term 'useful art.' " In a confusing vein, the Court went on to state that "[a] new process is usually the result; a machine, of invention," thereby inferring some distinction between the terms "discovery" and "invention" in the patent law. Be that as it may, it concluded that: "It is for the discovery or invention of some practical method or means of producing a beneficial result or effect that a patent is granted, and not for the result or effect itself. It is when the term process is used to represent the means or method of producing a result that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical combinations." Ever since, it has been clear that processes and methods for producing a useful result, if novel and unobvious, are patentable subject matter. In 1952, Congress finally got around to declaring processes to be statutorily patentable subject matter.

The Supreme Court has repeatedly reiterated that laws of nature, natural phenomena, or abstract ideas do not constitute patentable subjects, without stating what constitutional objection, if any, exists to treating them

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260 For Jefferson's varying and sometimes inconsistent views on the patent law, see Walterscheid, supra note 254.
263 See, e.g., Diehr, 450 U.S. at 185 ("Excluded from such patent protection are laws of nature, natural phenomena, and abstract ideas."); Gottschalk v. Benson, 409 U.S. 63, 67, 175 U.S.P.Q. (BNA) 673 (1972) ("Phenomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."); Funk Bros. Seed Co. v. Kalo Co., 333 U.S. 127, 130, 76 U.S.P.Q. (BNA) 280 (1948) ("Patents cannot issue for the discovery of the phenomena of nature . . . They are manifestations of laws of nature, free to all men and reserved exclusively to none. He who discovers a hitherto unknown phenomenon of nature has not claim to a monopoly of it which the law recognizes."); MacKay Radio & Tel. Co. v. Radio Corp. of Am., 306 U.S. 86, 94, 40 U.S.P.Q. (BNA) 199 (1939) ("While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be."); Rubber-Tip Pencil Co. v. Howard, 87 U.S. (20 Wall.) 498, 507 (1874) ("An idea of itself is not patentable . . ."); O'Reilly v. Morse, 56 U.S. (15 How.) 62, 116 (1853) ("The discovery of a principle in natural philosophy or physical science, is not patentable."); Le Roy v. Tatham, 55 U.S. (14 How.) 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.").
as patentable "discoveries" within the meaning of the Patent Clause. Kreiss argues that the Court predicated these holdings on its interpretation of the term "discoveries" as used in the Clause. From this he concludes that "discoveries" is a term of art and that "since 'discoveries' and 'useful arts' are integrally related concepts, one must infer that 'useful arts' is also a term of art."

He acknowledges, however, that as he puts it "it is hard to know whether the Court correctly interpreted the word 'discoveries' in the Constitution, either on linguistic or on policy grounds." This assumes, incorrectly I believe, that either the definition of "discoveries" or policy grounds forms the basis for these holdings by the Court. Since the Court has never indicated the constitutional basis for the holdings, and it is in fact rather clear that they are not predicated on either linguistic interpretation of the term "discoveries" or on policy considerations, it is reasonable to look elsewhere in the Patent Clause to ascertain the basis for these holdings. Simply put, a rationale for these holdings resides in the interpretation of the terms "useful arts" in the Clause. As Kreiss puts it, "the subject matter of patents is limited to the 'discoveries' which must be in the 'useful arts.'"

If to be patentable a discovery must promote the progress of the useful arts, then the phrase "to promote the progress of . . . useful arts" in the Clause serves as a limitation on any broad interpretation of "discoveries" as used therein to include natural phenomena, laws of nature, or abstract ideas. In other words, natural phenomena, laws of nature, or abstract ideas, without more, are not considered to be "useful arts." However, if

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264 Kreiss, supra note 184, at 67.
265 Id.
266 Kreiss admits that when the Constitution was drafted the meaning of "discover" included the finding of natural phenomena. Id. Moreover, in our system of government, it is not the usual role of the judiciary, including the Supreme Court, to set policy, and there is nothing to suggest that in making these holdings the Court viewed itself as in any way setting policy as opposed to interpreting the law.
267 Indeed the Court has expressly stated that "it is only useful arts—arts which may be used to advantage—that can be made the subject of a patent." Dolbear v. Am. Bell Tel. Co. (The Telephone Cases), 126 U.S. 1, 533 (1888).
268 Kreiss, supra note 184, at 63.
269 Without referring to the Clause, the Supreme Court has stated: "[A] new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that \( E = mc^2 \); nor could Newton have patented his law of gravity. Such discoveries are manifestations of . . . nature, free to all men and reserved exclusively to none." Diamond v. Chakrabarty, 447 U.S. 303, 309, 206 U.S.P.Q. (BNA) 193 (1980).
they are employed in such a fashion as to produce a useful technological result, then patentable "discovery" resides in the embodiment or process that makes use of them to produce the useful result, and not in them apart from such embodiment or process.

One problem with interpreting the words "useful arts" as they appear in the Patent Clause, and hence what falls within the ambit of patentable "discovery" is that, despite what courts and commentators have said, "useful arts" as the phrase appears in the Clause encompasses more than merely the technological arts. Moreover, the interpretation as to what is covered by "useful arts" of necessity changes with time. Nowhere is this more apparent than in the changing judicial view on the patentability of natural products and so-called business methods.

As early as 1813, Oliver Evans argued that the discovery of an unknown plant and its uses could be patented. The extent to which life forms and their products were sought to be patented in the nineteenth century is unclear. However, in 1889 in refusing to authorize a patent for the natural fibers of a particular tree, the Commissioner of Patents declared: "I am not aware of any instance in which it has been held that a natural product is the subject of a patent, although it may have existed from creation without being discovered." In 1980 in reviewing why plant patents had been refused prior to 1930 the Supreme Court indicated that this decision "came to 'set forth the general stand taken in these matters' that plants were natural products not subject to patent protection."

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270 See, e.g., In re Bergy, 596 F.2d 952, 959 (C.C.P.A. 1979) ("[T]he present day equivalent of the term 'useful arts' employed by the Founding Fathers is 'technological arts ... '."); In re Waldbaum, 457 F.2d 997, 1003 (C.C.P.A. 1972) ("[W]hether appellant's process is a 'statutory' invention depends on whether it is within the 'technological arts ... '"); In re Musgrave, 431 F.2d 882, 893 (C.C.P.A. 1970) ("All that is necessary ... to make a sequence of operational steps a statutory 'process' within 35 U.S.C. § 101 is that it be in the technological arts so as to be in consonance with the Constitutional purpose to promote the progress of 'useful arts.'"); DONALD S. CHISUM, CHISUM ON PATENTS G1-23 (1998) (identifying "technological arts" as being synonymous with "useful arts"); and Vincent Chiapetta, Patentability of Computer Software Instruction as an "Article of Manufacture": Software as Such as the Right Stuff, 17 J. MARSHALL J. COMPUTER & INFO. L. 89, 129-30 (1998) (stating that the "useful arts" involve "technology" or "industrial arts").

271 See supra note 257 and accompanying text.

272 But such patents were occasionally issued. Thus, for example, in 1873 Louis Pasteur received a United States patent which included a claim for: "Yeast, free from organic germs of disease, as an article of manufacture." ROBERT PATRICK MERGES, PATENT LAW AND POLICY 177 (2d ed. 1997) (citing to Louis Pasteur's Patents, SCIENCE, Oct. 8, 1937).


The reason the Court limited its discussion to the period before 1930 was that in that year Congress enacted the Plant Protection Act which afforded patent protection to certain asexually reproduced plants. In so doing, Congress argued "that the work of the plant breeder ‘in aid of nature’ was patentable invention." Although neither the Supreme Court nor the Congress addressed the patent protection afforded by the Plant Protection Act, and later by the Plant Variety Protection Act, in the context of any interpretation of the Patent Clause, it is reasonable to suggest that prior to 1930 the creation or discovery of new plant varieties was not deemed to promote the progress of useful arts, whereas from 1930 on it has been viewed as doing so. In this mode of looking at things, the interpretation of what constitutes a useful art in the Clause had changed.

But in 1948 in *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, the Supreme Court took the position that a novel and unobvious combination of naturally occurring strains of bacteria useful for fixing nitrogen in leguminous plants was unpatentable. The prior art had taught that different strains of bacteria useful for fixing nitrogen in particular leguminous plants could not be combined in one inoculant suitable for a variety of leguminous plants because the various strains were mutually inhibitive on each other. The inventor had discovered that there were in fact strains of the bacteria that were not mutually inhibitive and hence could be combined in a single inoculant for several legumes. The combination of strains with this highly valuable property was not found in nature.

Nonetheless, according to the Court, the qualities of the bacteria... are the work of nature. Those qualities are of course not patentable. For patents cannot issue for the discovery of the phenomena of nature. The qualities of these bacteria, like the heat of the sun, electricity, or the qualities of metals, are part of the

*Relation of Patent Law to Natural Products*, 6 J. PAT. OFF. SOC'Y 23, 24 (1923)).


277 See supra note 275.

278 333 U.S. 127 (1948).

279 At least from the teaching of the prior art.
storehouse of knowledge of all men. They are manifestations of the laws of nature, free to all men and reserved exclusively to none. He who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. **[T]**here is no invention here unless the discovery that certain strains of the several species of these bacteria are non-inhibitive and may thus be safely mixed is invention. But we cannot so hold without allowing a patent to issue on one of the ancient secrets of nature now disclosed.280

The difficulty with this approach is spelled out by the Court in a 1981 decision when it declared that such an analysis “would, if carried to its extreme, make all inventions unpatentable because all inventions can be reduced to underlying principles of nature which, once known, make their implementation obvious.”281

Be that as it may, in 1980 in *Diamond v. Chakrabarty* the Court once again expressly stated that “a new plant found in the wild is not patentable subject matter” regardless of what useful properties it might have.282 It did, however, note that in enacting the Patent Act of 1952 Congress intended “statutory subject matter” to “include anything under the sun that is made by man.”283 According to the Court, “Congress . . . recognized that the relevant distinction was not between living and inanimate things, but between products of nature, whether living or not, and human-made inventions.”284 This seemed to suggest that, in the Court’s view, there is a distinction between “discovery” and “invention” with patentable invention being limited to something “made by man.” Since such a distinction is not

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280 333 U.S. at 130, 132.
281 *Diamond v. Diehr*, 450 U.S. 175, 189 n.12, 209 U.S.P.Q. (BNA) 1, 9 n.12 (1981). Although the quoted language was in the context of an argument that a mathematical algorithm must be assumed to be within the prior art, it would seem to be applicable to the Court’s statement in *Funk Bros.* that to permit the patenting of the combination of bacterial strains set forth therein would be to permit the patenting of “one of the ancient secrets of nature.” Interestingly, the Court in *Diehr* cited to *Funk Bros.* for the proposition that: “It is now commonplace that an application of a law of nature or mathematical formula to a well known structure or process may be deserving of patent protection.” 450 U.S. at 187-88.
282 See supra note 269.
284 447 U.S. at 313.
found in the Patent Act of 1952, its origin must arguably reside in the constitutional language, but as I have earlier suggested, there was not a clear distinction between "invention" and "discovery" at the time the Constitution was drafted. Nonetheless, since Chakrabarty it has been commonly assumed that a new life form created by man is patentable whereas a new life form merely discovered is not.

The judicially created doctrine that business methods are not patentable seems to have originated in dictum in a 1908 Second Circuit opinion, namely: "A system of transacting business disconnected from the means for carrying out the system is not, within the most liberal interpretation of the term, an art." Here the court was referring to "art" as it appeared in the patent statute rather than as it appeared in the Patent Clause. Nonetheless, this view generally held sway until 1998 when the Federal Circuit gave short shrift to it in State Street Bank & Trust Co. v. Signature Financial Group, Inc.

Instead the Federal Circuit gave its whole-hearted approval to the following guidelines set forth by the Patent Office in 1996:

Office personnel have had difficulty in properly treating claims directed to methods of doing business. Claims should not be categorized as methods of doing business. Instead such claims should be treated like any other process claims.

The court also stressed that "[t]he question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to—process, machine, manufacture, or composition of matter—but rather on the essential characteristics of the subject matter, in particular, its practical utility." Phrased somewhat differently, whether a discovery covers patentable subject matter depends on whether it promotes the progress of useful arts, i.e., its practical utility.

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25 The Patent Act of 1952 declares that "invention" means "invention or discovery." See supra note 26 and accompanying text.
26 See supra Part III.C.
27 Hotel Sec. Checking Co. v. Lorraine Co., 160 F. 467, 469 (2d Cir. 1908).
28 149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998).
30 149 F.3d at 1375.
Kreiss, for one, is not happy with this state of affairs and believes that business methods should not be patentable. He strives hard to find some constitutional basis for refusing patentability to such methods, but finds none. Instead, he argues that such methods should not be patentable because "the repeated comments made by courts, commentators, and the PTO over the years to the effect that business methods are not patentable subject matter should be taken as strong evidence that business systems are perceived to be far outside the bounds of the "useful arts." This view, however, seems to be far contrary to his own earlier contention that patentable "discoveries" in the "useful arts" should be generally limited to things that are "functional." He states that a work is "functional . . . if it performs some utilitarian task other than to inform, entertain, or portray an appearance to human beings." Clearly, business methods are functional within this interpretation and hence should be patentable, provided they are novel and unobvious.

V. CONCLUSIONS

The Patent Clause authorizes Congress to create a limited-term exclusive right in an inventor, not for the purpose of securing any existing right to the invention, but rather "to promote the progress of . . . useful arts" by ultimately placing the invention in the public domain. In turn, the invention can only be placed in the public domain if there is a teaching given to the public of how to make and use the invention. That is the consideration required by the introductory language of the Patent Clause in return for the limited-term exclusive property right in the invention encompassed in the patent grant.

The Clause also requires that the exclusive right be given only to inventors for their discoveries. This in turn obligates or requires Congress to issue patents only in the name of the inventor or inventors even though all of the patentee's rights may have been assigned to someone else. Indeed, both Congress and the courts have always recognized this constitutional

291 Kreiss, supra note 184, at 85-86. In so stating, he conveniently ignores the point made in State Street that the courts primarily responsible for hearing patent issues, namely, the Court of Custom and Patent Appeals and its successor, the Federal Circuit, have never held an invention to be unpatentable on the ground that it is directed to a method of doing business. See 149 F.3d at 1375.

292 Kreiss, supra note 184, at 79.

requirement, and any attempt by Congress by legal fiction to define an assignee of a patent right as an inventor would be constitutionally suspect at best. 294

Without realizing it, the Framers created a significant interpretational problem when they chose to use the term “discoveries” in the Clause. While they quite likely viewed “discovery” as synonymous with “invention,” its eighteenth century definition was sufficiently broad to read on the finding out of something which previously existed but had yet to be revealed. While invention could arguably be interpreted as limited to the creation of something new, discovery encompassed more than simply a creative act. Clearly, the searching for and finding out of the laws of nature and the phenomena of nature such as previously unknown life forms or minerals constituted discovery, although nothing new was in fact created. Thus the use of the term “discoveries” in the Patent Clause gave Congress very broad discretion as to what it might deem to be patentable discovery. 295

In order to be patentable, the constitutional language clearly required that a discovery be new, or novel in the jargon that would develop, but new in what sense? Today, in an era of rapid world-wide communication, such a question would be treated as largely academic, but it was one of real import in the late eighteenth and early nineteenth centuries. The Patent Clause was incorporated in the Constitution to assure that Congress would have authority to engage in something akin to the British patent practice as it existed near the end of the eighteenth century. 296

A primary reason for seeking to adopt and adapt the British patent custom was that it was perceived to be an important factor in the rapid industrialization of Great Britain that had recently commenced. Authority for the British patent practice was the Statute of Monopolies which exempted patents for new manufactures from the ban on monopolies. Bear in mind that the early English patent custom arose out of a desire to create

294 The fact that Congress has for almost a century defined the proprietor of a work made for hire as an “author” in the copyright context is evidence only of a massive inconsistency in the statutory treatment of the exclusive rights known as patents and copyrights. It is remarkable that the issue of the constitutionality of the congressional practice with regard to copyright has never reached the Supreme Court.


296 Walterscheid, supra note 45, at 32-39.
new industries in the realm primarily by importation and only secondarily by what would now be termed invention. Thus, the phrase "true and first inventor" in the Statute of Monopolies had been interpreted under the common law to include not only the first inventor but the first importer as well. At the time of the drafting of the Constitution, novelty was defined in Great Britain by whether the subject matter of the invention was known or used within the country, and it was immaterial whether it was known or used elsewhere. It was the introduction of the invention in Great Britain that defined novelty and not originality per se.297

There is nothing whatever to indicate or suggest that in drafting the Patent Clause the Framers intended it to encompass a narrower view of patentable novelty than that which existed in Great Britain. Yet the first Congress assumed this to be the case and refused to authorize patents of importation on the grounds that such were constitutionally precluded. Moreover, it would include language in the Patent Act of 1793, which the Supreme Court interpreted in 1818 as requiring an invention to be not only new but original throughout the world in order to be patentable in the United States.298 But in so doing, the Court would expressly decline to interpret the meaning to be given to the terms "invention" or "discovery" in either the patent statute or the Patent Clause.

In light of this narrow view of novelty, it might be assumed that any publication or use of the invention or discovery that placed it in the public domain would automatically preclude patentability, but this was not the case in at least one context through the nineteenth century. Thus on a number of occasions Congress authorized and the courts upheld patent term extensions or renewals that occurred after the original patent had expired and the subject matter had gone into the public domain.299 The rationale given by Congress for so doing was that such was necessary to assure an adequate reward to the inventor. Never mind that the Clause spoke only of promoting the progress of useful arts and that it was difficult to see how extending or renewing a patent after it had expired served in any way to promote such progress. More recently, however, the Supreme Court has concluded that the Clause precludes Congress from issuing patents that

297 These points are discussed in more detail in WALTERSCHEID, supra note 42, at 48-56.
298 See supra note 116 and accompanying text.
299 See, e.g., WALTERSCHEID, supra note 42, at 285-88.
ment of novelty would seem to require such a conclusion, even though an original inventor may be involved.

Although the contemporaneous interpretation given to the terms "inventors" and "discoveries" clearly indicated a constitutional requirement of novelty before a patent could issue, the statement of purpose in the Clause can also be construed as placing constitutional limitations on the power of Congress to issue patents. That it also suggests a constitutional requirement of novelty and utility in order for patentability to exist can also be inferred from its language. But in 1966 in *Graham v. John Deere Co.* the Supreme Court declared that the introductory language of the Clause sets forth a constitutional standard of invention as an additional condition for patentability. In the Court's view, something more than novelty is constitutionally required for patentability, but, what that something is remains unclear. Most commentators have assumed that this constitutional standard refers to the unobviousness requirement first set forth by the Court in 1851 in *Hotchkiss v. Greenwood* and made statutory in 1952. While Congress has wide discretion to set standards of patentability and has indeed set unobviousness as a standard, it is questionable at best whether such a standard is required by the Patent Clause. In this regard, it is of interest to note that the *Hotchkiss* Court made no attempt to use the language of the Clause to justify its conclusion that patentability required the application of a higher standard of skill than that possessed by, "an ordinary mechanic acquainted with the business."

The Court's rationale for holding that a constitutional standard of invention exists was not predicated in any way on a specific analysis of the actual language of the Clause nor on any contemporaneous interpretation of Clause language by the Framers, but instead was based almost entirely on an erroneous and misleading interpretation of Thomas Jefferson's role in the early development of the patent law and his views on it. The difficulty with this approach is that aside from being a misrepresentation of Jefferson's role and views, it ignores the fact that Jefferson never expressed any views on

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301 See Walterscheid, supra note 42, at Ch. 5. I also suggested there that it places a limitation on the duration of patent and copyright terms that can be set by Congress. Id. at 273-79.

302 See supra note 127 and accompanying text.

303 See supra notes 132-39 and accompanying text.

interpretation of the Patent Clause after his early exchange of correspondence with James Madison in 1788 and 1789.305

Contrary to the Court’s assertion, Jefferson most definitely did not believe that the courts should develop conditions for patentability over and above those set forth by statute,306 but even if he had such a belief, it is not relevant to constitutional interpretation of the language of the Clause. The Court’s assertion that Congress agreed by negative implication with the view that courts are authorized to set standards of patentability because it failed to set a higher standard of patentability between 1790 and 1950 than merely utility and novelty307 is wholly without merit. Nothing in the Clause grants such authority to courts, and it is just as likely that the failure of Congress to set a higher statutory standard of patentability was predicated on the view that none was required by the constitutional language or needed as a practical matter. Indeed, if the Hotchkiss test is predicated on a constitutional standard (which is nowhere evident),308 and Congress understood it as such, it is difficult to understand why it took a century for such an unobviousness standard to be incorporated into the patent statute.

The answer, of course, is that in the intervening period between Hotchkiss and the enactment of the Patent Act of 1952, no court held that the Hotchkiss test was constitutionally required, and Congress—as evidenced by its inaction—most certainly did not perceive it to be constitutionally required for patentability. In this regard, the legislative history of the 1952 Act declares that section 103 thereof, setting forth an unobviousness requirement for patentability “for the first time in our statute, provides a condition which exists in the law and has existed for more than 100 years, but only by reason of decisions of the courts (emphasis supplied).”309 If there is a clear constitutional mandate that sets a higher standard of patentability than merely utility and novelty, then it is indeed the duty of the Court to so determine, but the Court is without authority to substitute its judgment for that of Congress absent a clear constitutional mandate. No such clear mandate exists in the Patent Clause.310

305 See supra note 161.
306 Id.
307 See supra notes 152 and 153 and accompanying text.
308 See supra notes 132-39 and accompanying text.
310 It should be noted that the Clause is part of article I, section 8 of the Constitution, which sets forth the enumerated powers of Congress and does not delineate any power of the federal courts.
While Jefferson undoubtedly had high standards for patentability as the Court declared, his standards were not those of the Framers or the first and second federal Congresses. Thus, in enacting the Patent Act of 1793, the second Congress which contained a number of Framers expressly declined to incorporate his proposal set forth in a draft patent bill in 1791 for a statutory nonobviousness standard. If there is indeed a constitutional standard of invention set forth in the Patent Clause, it is difficult to understand why the first patent acts did not incorporate such a standard.

If the Court’s holding that a constitutional standard of invention is required by the Clause is based on a false reading of the historical record, the same is not true of its understanding that novelty and utility are constitutional requirements. The need for novelty is found both in the contemporary definitions of “inventors” and “discoveries” and in the requirement that patents promote the progress of useful arts. Clearly, if a discovery is not new, it does not promote such progress. A requirement for utility is not found in contemporaneous definitions of “inventors” and “discoveries” but can be found in the introductory language of the Clause, for, if a discovery is not utilitarian, it does not promote the progress of useful arts. Contrary to the assertion of the Supreme Court in Brenner v. Manson, there is no constitutional requirement that an invention must have “substantial utility” in order to be patentable.

Care should be taken to clearly distinguish between standards for patentability and patentable subject matter because they are not the same thing at all. While there are clearly constitutional requirements that must be met in setting standards of patentability, it is less clear that there are constitutional limits on what constitutes patentable subject matter. I have suggested, however, that to the extent such limitations exist they must be found in the introductory language of the Clause and, in particular, in the definition accorded to “useful arts” as found in the Clause.

the enumerated powers of Congress and does not delineate any power of the federal courts.

311 See supra note 158 and accompanying text.

312 In this regard, in 1884 the Supreme Court declared in the copyright context that the interpretation placed on the Constitution by the first copyright acts of 1790 and 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.” Burrow-Giles Lithography Co. v. Sarony, 111 U.S. 53, 57 (1884).

313 383 U.S. 519, 534, 148 U.S.P.Q. (BNA) 689 (1966). The Court did not define what it meant by “substantial utility” and there is no basis in the constitutional language for the use of such phraseology. It implies that while certain inventions may indeed promote the progress of useful arts, there are nonetheless constitutionally unworthy of a patent because their utility is not sufficiently great.
The Supreme Court has never sought to provide a definition of "useful arts" as that phrase appears in the Clause, although it has expressly stated that "it is only useful arts . . . that can be made the subject of a patent." Nonetheless, I have suggested herein that the Court, without any express reference to the constitutional language, has effectively limited "useful arts" to exclude natural phenomena, laws of nature, or abstract ideas, which, without more, have repeatedly been held not to be patentable subject matter. It is in this context that I have suggested that "discoveries" as used in the Clause is limited to discoveries in the useful arts. Lower courts and commentators have on a number of occasions suggested that "useful arts" means "technological arts." But even this is not particularly helpful because patents are routinely granted in fields that do not appear to fall within the definition of technological arts.

In 1980 in Diamond v. Chakrabarty the Supreme Court noted with approval that the legislative history of the Patent Act of 1952 indicated that statutory patentable subject matter was intended "to include anything under the sun that is made by man." Although no reference was made to "useful arts" as that phrase appears in the Patent Clause, I believe that phrase should be interpreted as including anything made or created by the hand of man and as excluding anything not made or created by man. This would be fully in accord with the long held view that natural phenomena, laws of nature, and abstract ideas are not patentable subject matter. In this approach, "discoveries" as used in the Clause is limited to those discoveries falling within the "useful arts" so defined.

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315 Plant patents and patents for business methods are but two examples in the modern era.
316 447 U.S. at 309.