

THE STATUTORY STANDARD OF PATENTABILITY: THE NECESSITY FOR A RELATIVE STANDARD DEPENDENT UPON FACTUAL INQUIRIES

The patent system in the United States is specifically authorized by Article IV, section 8 of the Constitution which provides:

The Congress shall have 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
. . .¹

The congressional power to grant both patents and copyrights pursuant to this constitutional provision is limited, however, by the overriding purpose of the patent system as specifically stated in the constitutional grant itself. Thus, the granting of exclusive rights in the form of patents and copyrights must have as its ultimate purpose the promotion of "the Progress of Science and Useful Arts."²

The limited nature of this congressional power has restricted the granting of patents to discoveries for which the grant of exclusive rights will promote the progress of the art to which the discovery pertains; that is, discoveries which in some way add to the knowledge of the existing art. Conversely, "discoveries" of knowledge already within the ken of those skilled in the art do not advance the progress of the art and are, therefore, beyond the purview of the constitutional grant and not patentable. Because of its fundamental importance to the patent system, the issue of whether or not a particular discovery does in some way add to the knowledge existing in the art has been the subject of much litigation.

The basic statutory requirements for patentability were novelty and utility; that is, a discovery had to be new and useful.³ Added to these requirements was the judicially created requirement of "invention."⁴ Because the latter requirement did not utilize a standard which could be analyzed in light of particular factual inquiries, the "invention" requirement led to considerable confusion among both commentators and judges with respect to the actual criteria for patentability.⁵ In response to this situation, Congress enacted Section 103 of the Patent Code.⁶ This statute defines patentability in terms of the non-obviousness of the subject matter to a person of ordinary skill in the art. This congressional response was intended to provide a standard

¹ U.S. Const. art. I, § 8, cl. 8.

² *Id.*

³ Act of Feb. 21, 1793, ch. 11, 1 Stat. 318.

⁴ *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248 (1850).

⁵ Goodman, *The Effect of Section 103 of the Patent Act of 1952 Upon the Patent Laws*, 35 J. Pat. Off. Soc'y 233, 237 (1953). "Unfortunately there has not been uniformity in the court interpretations, resulting in confusion and conflict."

⁶ 35 U.S.C. § 103 (1964).

directly related to the prevailing conditions in the art. Furthermore, the establishment of the standard relative to which the determination of non-obviousness of the subject matter was made, that is, the person of ordinary skill in the art, was to be determined by an inquiry into the surrounding factual circumstances.

The Supreme Court, in its first application of section 103,⁷ acknowledged this legislative purpose and directed that the standard be established by making the appropriate factual inquiries.⁸ Furthermore, the Court recognized that the conclusion of non-obviousness could be reached by the use of secondary considerations, that is, by an inquiry into factual conditions not directly related to the standard by which non-obviousness must be determined, but conditions which result if in fact the subject matter is non-obvious.⁹ Such considerations deemed relevant by the Court were long felt but unsolved need, commercial success, failures of others, and recognition of the importance of the discovery by others skilled in the art. Both the Court and commentators expressed the hope that the determination of patentability by means of such factual inquiries would remove the confusion caused by the application of the "invention" requirement.¹⁰

In its most recent application of section 103, however, the Court, in *Anderson's-Black Rock, Inc. v. Pavement Salvage Co., Inc.*,¹¹ applied a standard reminiscent of the invention requirement by disregarding both the requisite factual inquiries and the secondary factual considerations indicating that the subject matter was in fact non-obvious to those of ordinary skill in the art. *Black Rock* raises the question of what is the correct standard by which obviousness is to be determined. More specifically, is the standard to which the subject matter must be non-obvious a totally relative one, or does it possess a minimum level of competence which is ascertainable independently of factual inquiries? The answer to this question can greatly influence the determination of patent validity, especially in declaratory or summary judgment actions.

It will be the purpose of this comment to analyze the Supreme Court's pronouncements in this area in search of an answer. In order to provide the proper perspective, the historical background resulting in the enactment of section 103, the statute itself and its judicial predecessor will be examined. Finally, the Trilogy rationale and facts will be discussed together with the *Black Rock* decision in order that the two judicial approaches may be compared. In addition, the *Black Rock* departure from the statutory standard will be considered in constitutional terms.

⁷ *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

⁸ *Id.* at 17.

⁹ *Id.* at 17-18.

¹⁰ *Id.* at 18; Comment, The Impact of the Supreme Court Section 103 Cases on the Standard of Patentability in the Lower Federal Courts, 35 Geo. Wash. L. Rev. 818, 827 (1967).

¹¹ 396 U.S. 57 (1969).

I. HISTORICAL BACKGROUND OF SECTION 103

The constitutional provision which provides for the establishment of a patent system has been the subject of extensive analysis.¹² It is widely recognized that as a matter of proper statutory interpretation¹³ this clause permits Congress to grant exclusory rights (patents) to inventors for their discoveries, and analogous exclusory rights (copyrights) to authors for their writings.¹⁴ The purpose of these grants must be to promote the progress of the useful arts in the case of patents and science in the case of copyrights.

The nation's first patent law required that the subject matter be "sufficiently useful and important" in order to be entitled to a patent.¹⁵ In 1793, the standard was changed by Congress to require that the subject matter be "new and useful."¹⁶ The latter requirements of novelty and utility remained the principle statutory standards for the next one hundred and fifty-nine years.¹⁷

During the period in which the statutory standard was one of novelty and utility the courts were involved in placing a significant judicial gloss on the statutory requirements. In 1850, the Supreme Court, in *Hotchkiss v. Greenwood*,¹⁸ added the requirement of "invention" to the statutory standards of novelty and utility. The Court, in *Hotchkiss*, required that the subject matter sought to be patented exhibit more ingenuity and skill than that of an ordinary mechanic in the art.¹⁹ The rationale for this requirement may have been that only "inventors" are entitled to patent grants and hence only those "discoveries" which are the work of inventors, that is to say, "inventions," are patentable. Alternatively, the "invention" requirement may have been a constitutionally demanded definition of the statutory requirement of novelty, since a "discovery" which embodies nothing more than mechanical skill deprives those skilled in the art of access to that which was previously available to them. Patentability of such a "discovery" would not promote the progress of the useful arts. Whichever rationale is accepted, the requirement of "invention" became an established part of our patent law.²⁰

Application of this requirement created problems as the courts attempted to ascertain what constituted this indefinite quality called

¹² See Rich, *Principles of Patentability*, 28 Geo. Wash. L. Rev. 393 (1960); Seidel, *The Constitution and a Standard of Patentability*, 48 J. Pat. Off. Soc'y 5 (1966) and articles cited therein.

¹³ "The division of a balanced sentence was a rule of construction at common law. *Reddendo Singula Singulis*, meaning literally to refer each to each, as each phrase or expression to its appropriate object." Seidel, *supra* note 12, at 9 n.10.

¹⁴ See note 12 *supra*.

¹⁵ Act of April 10, 1790, ch. 7, 1 Stat. 109.

¹⁶ Act of Feb. 21, 1793, ch. 11, 1 Stat. 318.

¹⁷ See Comment, *The Standard of Patentability—Judicial Interpretation of Section 103 of the Patent Act*, 63 Colum. L. Rev. 306-07 (1963).

¹⁸ 52 U.S. (11 How.) 248 (1850).

¹⁹ *Id.* at 266.

²⁰ Federico, *Commentary on the New Patent Act*, 35 U.S.C.A. 1, at 21-22 (1954).

invention, and how much of it was necessary for patentability. The problem was accentuated by the inability of the courts at times to handle the highly technical aspects of what constitutes an inventive contribution to a particular art. The result was the development of "objective make weights" and negative rules of patentability,²¹ which led to a wide diversity of judicial opinion.²² During the years immediately preceding the enactment of section 103, the Supreme Court appeared to apply an increasingly stricter test than that announced in *Hotchkiss*.²³ For example, in *Cuno Engineering Corp. v. Automatic Devices Corp.*,²⁴ the Court stated that the subject matter must exhibit a "flash of creative genius"²⁵ in order to possess the level of skill and ingenuity necessary to constitute a patentable invention. In another decision, *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp. (A&P)*,²⁶ the Court expressed reservations about the probability of finding "invention" in a combination of old elements, and required that the "whole in some way exceed[s] the sum of its parts."²⁷ These decisions were the climax of a trend which sparked such controversy and criticism²⁸ that Justice Jackson proclaimed, "[T]he only patent that is valid is one which this Court has not been able to get its hands on."²⁹ It became apparent that "[t]he requirement for 'invention' was the plaything of judges who, as they became initiated into its mysteries, delighted to devise and expound their own ideas of what it meant; some very lovely prose resulting."³⁰ It was in response to these circumstances that section 103 was enacted.³¹

II. CONDITIONS FOR PATENTABILITY: NON-OBVIOUS SUBJECT MATTER—SECTION 103 OF THE PATENT ACT

Section 103 provides:

A patent may not be obtained . . . if the differences between the subject matter sought 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

²¹ 1 Patent Law Perspectives, 1969-70 Annual Review § A.1[1]-9.

²² Federico, *supra* note 20, at 23.

²³ See Comment, *supra* note 17, at 307; Federico, *supra* note 20, at 22.

²⁴ 314 U.S. 84 (1941).

²⁵ *Id.* at 91.

²⁶ 340 U.S. 147 (1950).

²⁷ *Id.* at 152.

²⁸ See Balluff, Do Recent Supreme Court Opinions Raise the Standard of Invention, and Are Lower Courts Misinterpreting Such Opinions?, 34 J. Pat. Off. Soc'y 847 (1952); Weklind, No Valid Patents? U.S. Supreme Court Trends in *Jungerson v. Ostby & Barton Company*, 31 J. Pat. Off. Soc'y 859 (1949); Dodds & Crotty, The New Doctrinal Trend, 30 J. Pat. Off. Soc'y 83 (1948); Federico, *supra* note 12, at 22.

²⁹ *Jungerson v. Ostby & Barton Co.*, 335 U.S. 560 at 572 (1949) (dissenting opinion).

³⁰ Rich, *supra* note 12, at 404.

³¹ See Goodman, *supra* note 5.

pertains. Patentability shall not be negated by the manner in which the invention was made.⁸²

This section was without any statutory predecessor and in general embodied the "invention" requirement existing in the prior case law. The stated purpose of the section was to provide a "stabilizing effect" upon the diversity of judicial opinion created by the requirement of "invention."⁸³ Following its enactment, section 103 was the center of controversy concerning the effect of the new statutory standard upon the judicial requirement of "invention."⁸⁴ Did section 103 revise the stricter standard of *Cuno* and *A&P*, or merely codify existing, and somewhat conflicting, case law? The legislative history is ambiguous on this point and may be cited in support of either position.⁸⁵ On the whole, the stronger argument is that the section was intended as a revision of the case law in effect at that time with a view toward returning the invention requirement to the less stringent *Hotchkiss* standard.⁸⁶

Whether revising or codifying the case law, the object of section 103 was to substitute uniformity for the confusion existing at the time of its enactment.⁸⁷ The Supreme Court recognized the validity of this purpose in the *Trilogy*, and applied the statutory standard in order that the desired uniformity might be achieved.⁸⁸ In discussing the effect of the statute upon the judicial requirement of invention, the court characterized section 103 as a codification.⁸⁹ This characterization was made, however, only after the Court, in *Graham v. John Deere Co.*,⁴⁰ had interpreted *Cuno* as *not* establishing a higher standard than that announced in *Hotchkiss*. The controversial "flash of genius" in *Cuno* was explained as a "rhetorical embellishment" not varying the *Hotchkiss* standard.⁴¹ The Court noted the similarity between the *Hotchkiss* standard—more ingenuity and skill than the work of an ordinarily skilled mechanic in the art, and the statutory language—non-obviousness of the subject matter to a person of ordinary skill in the art. Although the similarity of language is marked, the inquiries

⁸² 35 U.S.C. § 103 (1964).

⁸³ Hearings on H.R. 3760 Before a Subcomm. of the House Com. on the Judiciary, 82nd Cong., 1st Sess. 38 (1951); Federico, *supra* note 12, at 20, 23.

⁸⁴ See Beckett, *Judicial Construction of the Patent Act of 1952—Codification v. Substantive Change*, 37 J. Pat. Off. Soc'y 467 (1955); Marans, *Some Aspects of the Patent Act of 1952 as Interpreted by Published Decisions*, 36 J. Pat. Off. Soc'y 482, 490-98 (1954); Martin, *The Patent Codification Act*, 36 J. Pat. Off. Soc'y 625, 632-37 (1954); Federico, *supra* note 20, at 22; Note, *Section 103 of the Patent Act and the Standard of Invention: Comments on Lyon v. Bausch & Lomb Optical Company*, 44 Geo. L. J. 100 (1955).

⁸⁵ See Comment, *supra* note 17, at 310.

⁸⁶ *Id.* at 312; Federico, *supra* note 20, at 22-23.

⁸⁷ 383 U.S. at 15; Goodman, *supra* note 5, at 238.

⁸⁸ 383 U.S. at 17-19.

⁸⁹ *Id.* at 17.

⁴⁰ 383 U.S. 1 (1966).

⁴¹ *Id.* at 15 n.7.

are essentially different: the *Hotchkiss* inquiry being directed toward an assessment of the dependent standard of "invention," the section 103 inquiry being directed toward an ascertainment of the relative standard of non-obviousness of the subject matter.⁴² The Court in *Graham* applied the statutory standard and directed its inquiry toward a determination of the issue of non-obviousness alone. Before discussing the application of section 103 in the Trilogy and *Black Rock*, an analysis of the statutory standard itself, as well a comparison of this standard with the judicial requirement of invention is necessary.

The invention requirement may be characterized as demanding an objective test of patentability. The subjective achievement of the inventor is immaterial; the subject matter must be evaluated with reference to a standard by which the validity of every patent is appraised.⁴³ The establishment of the "invention" standard by which the subject matter was evaluated involved a determination on the part of the judge as to what did or did not constitute invention. Although phrased in terms of the skill and ingenuity of a mechanic skilled in the art, the establishment of the standard was made without the benefit of factual inquiries into the existing skill and ingenuity of an ordinarily skilled mechanic in the art in order to reflect the judge's hindsight-ridden opinion of what constituted invention. Lest judgment be too harsh, it should be noted that in many instances the factual inquiries into the level of skill of an ordinarily skilled mechanic in an art involved highly technical considerations, the evaluation of which was often beyond the judge's competence. Faced with the dilemma of being required to make a choice, yet unable to comprehend fully the factual considerations relevant to this determination, the court made its decision independently of the factual inquiries, but rather relied solely upon an intuitive assessment of what constitutes "invention."⁴⁴

In enacting section 103, Congress recognized that the determination of patentability, with reference to a standard ascertained independently of factual inquiries, was the major cause of the judicial confusion and lack of uniformity on the question of the standard required for patentability.⁴⁵ Section 103 replaced the invention requirement with a requirement of non-obviousness. The statutory test is objective, as is the "invention" test.⁴⁶ The question is not whether the subject matter was obvious to the patent applicant, but whether the subject matter was non-obvious by evaluation with respect to the standard by which every patent is appraised. The statutory standard, unlike the independent standard used in the "invention" test, is a

⁴² Id. at 14.

⁴³ Federico, *supra* note 20, at 21.

⁴⁴ See Rich, *supra* note 12; Goodman, *supra* note 5; Note, Subtests of "Non-obviousness": A Nontechnical Approach to Patent Validity, 112 U. Pa. L. Rev. 1169-170 (1964).

⁴⁵ Federico, *supra* note 20, at 20-23.

⁴⁶ Id. at 21.

relative one.⁴⁷ The subject matter need not be non-obvious per se, but rather non-obvious to a person of ordinary skill in the art. Thus, in applying section 103, the determination of obviousness is *dependent upon factual inquiries* establishing the status of the standard.⁴⁸ The capabilities and prejudices of one of ordinary skill in the art must be ascertained in order that obviousness may be determined relative to this standard and in light of these capabilities and prejudices.⁴⁹ At this juncture it may be noted that the imposition of a minimum level of skill, ascertained independently of factual inquiries, upon one of ordinary skill in the art, presents the same problem as the determination of the requirement of "invention" independently of factual inquiries. The problem is less serious in that it occurs only when the minimum level of competence is at issue. However, the very existence of this minimum affords the courts an opportunity to reach the conclusion of obviousness without factual inquiry by independently establishing the minimum level of competence in such a manner as to support the conclusion of obviousness in terms of the statutory requirement by the subterfuge of a minimum level of skill. Needless to say, this practice would lead to a lack of uniformity in the decisions and a divergence of judicial opinion: the specific conditions section 103 was enacted to avoid.

III. JUDICIAL INTERPRETATION OF SECTION 103

A. Lower Courts

Those courts adhering to the statutory requirement have demonstrated that obviousness is determined by application of a relative standard.

Obviousness is a legal conclusion which we are *required to draw from facts*. . . . Thus before we can conclude that any disclosed invention is "obvious" under the conditions specified in 35 U.S.C. § 103, *we must evaluate facts* from which to determine 1) what was shown in the prior art at the time the invention was made, and 2) the knowledge which a person of ordinary skill in the art possessed at the time the invention was made. . . . We are unwilling to substitute speculation and hindsight appraisal of the prior art for such factual data. (Emphasis added.)⁵⁰

Moreover, it is recognized that the standard is specifically relative, that is, obvious *to one of ordinary skill in the art*. Faced with the contention that a combination herbicide would have been obvious to an ordinary

⁴⁷ The standard is related to existent conditions which are determinative of the status of the standard.

⁴⁸ See text at notes 50, 52 *supra*; see also *Application of Lettvin*, 339 F.2d 249 (C.C.P.A. 1964).

⁴⁹ See text at notes 53, 55 *supra*.

⁵⁰ *Application of Sporck*, 301 F.2d 686, 690 (C.C.P.A. 1962).

farmer⁵¹ presented with a specific prior art patent, the Court of Customs and Patent Appeals stated:

It is our view that what would be obvious to the "ordinary farmer" has no bearing on the issue before us. Section 103 requires that determinations of obviousness be made with respect to a person of a *particular* skill, namely, a person of ordinary skill *in the art* to which the subject matter pertains as of the time the invention was made. The statute does not contemplate *degrees* of skill and, accordingly, evidence of obviousness to those not of ordinary skill is not controlling.⁵²

The prior art must be considered as a whole. Specific references cannot be extracted from their context in order to support a conclusion of obviousness because such isolation does not provide the background "necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art."⁵³ The prior art may "conceal" an otherwise obvious solution from those in the art. The failures of others in the art due to apparently inherent and insurmountable disadvantages of an approach may teach away from solution by this means. The knowledge of such teaching by one of ordinary skill in the art creates a predisposition against solution of the problem by the disproven and unsatisfactory approach. This knowledge and predisposition must be considered in determining obviousness under section 103.⁵⁴ Thus, it has been stated: "No evaluation of an invention can ignore the known technology of record and the direction indicated thereby."⁵⁵

B. *The Trilogy*

The Supreme Court's first interpretation of section 103 came in the Trilogy.⁵⁶ The Court recognized that the use of "invention" as a label was the cause of the lack of uniformity in the decisions of the courts and the variety of opinion on the subject.⁵⁷ Aware of the fact that the section was added by Congress to insure "uniformity and definiteness,"⁵⁸ the Court espoused "strict observance" of the require-

⁵¹ "The ordinary farmer is clearly one of *less than* ordinary skill in the herbicide art." Application of Luvisi, 342 F.2d 102, 108 (C.C.P.A. 1965).

⁵² Id. at 108.

⁵³ Application of Wesslau, 353 F.2d 238, 244 (C.C.P.A. 1965).

⁵⁴ See *United States v. Adams*, 383 U.S. 39, 52 (1965); accord, *Technical Tape Corp. v. Minnesota Mining and Mfg. Co.*, 143 F. Supp. 429 (S.D.N.Y. 1956), *aff'd*, 247 F.2d 343, mandate recalled on other grounds, 249 F.2d 1 (2d Cir. 1957), cert. denied 355 U.S. 952 (1958). "That a person having ordinary skill in the art would 'know better' than to attempt it does not negative patentability." 143 F. Supp. at 433.

⁵⁵ Application of Sukman, 351 F.2d 658, 660 (C.C.P.A. 1965).

⁵⁶ *Graham v. John Deere Co.*, 383 U.S. 1 (1966); *Calmar, Inc. & Colgate-Palmolive Co. v. Cook Chemical Co.*, 383 U.S. 1 (1966); *United States v. Adams*, 383 U.S. 39 (1966).

⁵⁷ 383 U.S. at 12.

⁵⁸ Id. at 15.

ments set down in *Graham* so as to bring about "that uniformity and definiteness which Congress called for in the 1952 Act."⁵⁹ The section 103 requirement of non-obviousness is a "more practical test of patentability"⁶⁰ than the judicially established "invention" requirement. The Court stated that the section

lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved need, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.⁶¹

The Court called for determination of these factual inquiries in establishing a relative standard by which obviousness is appraised in order that the congressionally desired uniformity would be achieved.⁶²

Graham v. John Deere Co.,⁶³ involved a combination of elements old in the art to provide for the flexing of a plow shank when obstructions beneath the plowed surface were struck.⁶⁴ The difference between the prior art and the patented device was a slight structural change, the inversion of two members of one of Graham's previously patented devices.⁶⁵ The requirement of non-obviousness became determinative of patentability. In holding that the subject matter was not patentable, the Court concluded that it was obvious to one of ordinary skill in the art to invert the elements of the prior art in the patented manner in order to achieve the desired result.⁶⁶

The claimed "invention" of inverting two elements of a prior Graham device, the hinge plate and the shank, was specifically rejected by the patent examiner as "matters of design well within the expected skill of the art and devoid of invention."⁶⁷ The applicant also stressed the reduced wear characteristic of the inverted arrangement over the prior art. No mention was made before the patent office of a flexing quality.⁶⁸ It was this flexing quality alone which was argued before the courts as the non-obvious result upon which patentability should be predicated.⁶⁹

⁵⁹ *Id.* at 18.

⁶⁰ *Id.* at 17.

⁶¹ *Id.* at 17-18.

⁶² *Id.* at 18.

⁶³ 383 U.S. 1 (1966).

⁶⁴ U.S. Patent No. 2,627,798 (hereinafter referred to as *Graham* '798).

⁶⁵ U.S. Patent No. 2,493,811.

⁶⁶ 383 U.S. at 25.

⁶⁷ *Id.* at 22-23.

⁶⁸ *Id.* at 23.

⁶⁹ *Id.*

The patent examiner's allowance of the patent on the basis of the reduced wear characteristic as providing the non-obvious aspect of the inverted structure was made without the benefit of the Glencoe patent.⁷⁰ The latter patent reveals the same elements in identical functional relationship. In light of Glencoe's teaching, Graham's inversions of elements to achieve reduced wear was not a non-obvious difference.

In other words, the stirrup in Glencoe serves exactly the same function as the heel of the hinge plate in '798. The mere shifting of the wear point to the heel of the '798 hinge plate from the stirrup of Glencoe—itself a part of the hinge plate—presents no operative mechanical distinctions, much less non obvious differences.⁷¹

It was also claimed that the inversions of the hinge plate and shank permit the shank to flex away from the hinge plate instead of being restrained by pressing against it. This flex was claimed to be responsible for absorption of the tremendous forces exerted upon the shank when the plow strikes an object beneath the surface, and was asserted to be non-obvious under section 103.⁷² The Court skeptically viewed the argument as an afterthought.⁷³ Flexing was not a claim of the patent. Graham's experts did not consider the flexing advantages to be a significant feature.⁷⁴ The Court reasoned:

If free-flexing, as petitioners now argue, is the crucial difference above the prior art, then it appears evident that the desired result would be obtainable by not boxing the shank within the confines of the hinge. . . . The only other effective place available in the arrangement was to attach it below the hinge plate and run it through a stirrup or bracket that would not disturb its flexing qualities. Certainly a person having ordinary skill in the prior art, given the fact that the flex in the shank could be utilized more effectively if allowed to run the entire length of the shank, would immediately see that the thing to do was what Graham did, i.e., invert the shank and the hinge plate.⁷⁵

The subtests of non-obviousness⁷⁶ were not urged in support of patentability. It is likely that the failure of Graham to incorporate the flexing feature into its commercial products was indicative of lack of

⁷⁰ Id. at 22. The Glencoe patented structure is a clamp device in which all of the elements of the Graham '798 device are found in the identical mechanically operative relationship to one another.

⁷¹ Id. at 26.

⁷² Id. at 23-24.

⁷³ Id. at 25.

⁷⁴ Id.

⁷⁵ Id. at 24, 25.

⁷⁶ See text at note 9 *supra*.

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utility in the feature, as well as indicative of the Court's view that the difference was merely a design change and not a non-obvious difference.

It is notable that in affirming the decision of the court of appeals in *Graham*, the Supreme Court rejected as erroneous the lower court's holding of invalidity based upon the lack of a *new result* produced by the combination.⁷⁷ The Supreme Court's finding of invalidity was based solely upon the *obviousness* of the result.

In the companion case of *Calmer, Inc. v. Cook Chemical Co.*,⁷⁸ the device in controversy was a hold-down cap which protected the finger-operated pump of an insecticide spray bottle during shipment.⁷⁹ The device provided the convenience of installing the cap and pump in a single operation.⁸⁰ All of the elements of the cap had been disclosed in the prior art.⁸¹ In order to distinguish the cap from the prior art the claims were limited by the examiner to a space between the top of the container and the bottom of the screw-on protective cap, and the use of a rib rather than a gasket to form a seal to prevent leakage.⁸²

The space between the top of the container and the bottom of the protective cap was a design peculiarity demanded in order that the cap could screw on tightly to form the desired seal. The prior art disclosed a space performing the identical function. Thus, the space was not patentable independently of the rib-seal feature.⁸³ The use of a rib instead of a gasket was disclosed in the references of an analogous art.⁸⁴ The Livingstone patent⁸⁵ related to liquid containers having pouring spouts rather than spray pumps. The problems faced in both fields, however, are similar so that the art in question is properly that of closure, embracing applications to both types of containers. The closure devices, as applied to containers having pouring spouts, were at least pertinent references.⁸⁶ On this basis, the Court concluded that the use of the rib in the particular combination was an obvious application.⁸⁷ Although the subtests of long felt need, unsuccessful attempts of others to solve the problem, and commercial success were urged as proof of non-obviousness, the Court recognized that the issuance of the Livingstone patent rendered prior need and failures immaterial.⁸⁸

The Court's analysis followed the requirements set out in *Graham*. In determining the scope and content of the prior art, the art was properly defined as that of closure devices. The application of pro-

⁷⁷ 383 U.S. at 4.

⁷⁸ 383 U.S. 1 (1966).

⁷⁹ Id. at 26.

⁸⁰ Id. at 29.

⁸¹ Id.

⁸² Id. at 33.

⁸³ Id. at 34-35.

⁸⁴ Id. at 31 n.17.

⁸⁵ Id. at 31. U.S. Patent No. 2,715,480. A hold-down cap for use on liquid containers possessing pouring spouts.

⁸⁶ 383 U.S. at 35.

⁸⁷ Id. at 37.

⁸⁸ Id. at 36.

tective caps to containers with pouring spouts is analogous to the application of protective caps to containers with spray pumps. In determining the level of ordinary skill in the art, the Court presumed that one of ordinary skill in the art would possess the ability to apply correctly the teaching of Livingstone to the problem faced in the use of a protective cap on a container with a spray pump. Absent any rebuttal evidence such presumption is valid. The analysis demonstrates that the factual inquiries required in *Graham* are separate and distinct. The scope and content of the prior art is determined relative to what was published or patented. Although some in the art may not have had knowledge of a particular reference, it is clear that others, the patentee or author of the reference, did have such knowledge. The question thus becomes whether a person of ordinary skill in the art presented with the prior art references and the problem at hand would find the solution obvious. The *skill* of this person, his ability to utilize the references if presented with them in solution of the problem, is determinative. The Court impliedly presumed reasonable mechanical skill in the absence of evidence to the contrary.⁸⁹ In other words, the presumed level of skill is identical with, or perhaps lower than, the existing level of skill in the art. Thus, the relative nature of the obviousness standard is not violated.

In *United States v. Adams*,⁹⁰ The Court's analysis of the obviousness of the result became more apparent. The patented device was a non-rechargeable water-activated battery comprised of a magnesium anode and a cuprous chloride cathode.⁹¹ The government argued for invalidity on the basis of structural obviousness:

[W]et batteries comprising a zinc anode and silver chloride cathode are old in the art. . . . The prior art shows that magnesium may be substituted for zinc and corpus chloride for silver chloride. Hence . . . the "combination of magnesium and cuprous chloride in the Adams battery was not patentable because it represented either no change or an insignificant change as compared to prior battery designs."⁹²

The issue of novelty was disposed of by the fact that the Adams battery was water activated, that of the prior art was not.⁹³ A foreign patent cited by the government as anticipatory was found to be both dangerous and inoperable, and for these reasons did not negative novelty.⁹⁴ The Court directed its inquiry toward determination of the issue of obviousness.

The Adams battery revealed startling new properties which one skilled in the prior art would not expect to obtain from the combina-

⁸⁹ *Id.* at 36, 37.

⁹⁰ 383 U.S. 1, 39 (1966).

⁹¹ *Id.* at 42.

⁹² *Id.* at 48.

⁹³ *Id.*

⁹⁴ *Id.* at 50.

tion of magnesium and cuprous chloride as electrodes. The Court reasoned that one skilled in the prior art seeking a battery with the properties of the Adams battery would not have found it obvious to use magnesium and cuprous chloride electrodes to achieve these properties.⁹⁵ To do so would require one to ignore the teachings of the prior art which would "deter any investigation into such a combination as . . . used by Adams."⁹⁶ Thus, "known disadvantages in old devices which would naturally discourage the search for new inventions may be taken into account in determining obviousness."⁹⁷ In addition, the subtests of non-obviousness in *Adams* significantly bolstered the Court's conclusion of non-obviousness.⁹⁸

By way of dicta, the Court stated that one does not necessarily discover a patentable innovation "by shutting his eyes to their prior disadvantages."⁹⁹ Although this statement may be interpreted as implying some kind of non-statutory limitation on patentability, the context in which it appears argues for a contrary interpretation. The person making such a discovery must overcome the prior art in meeting the statutory requirements, especially that of novelty.¹⁰⁰ The Court also spoke in terms of one of "reasonable" skill in the art in determining the obviousness of the three devices.¹⁰¹ However, no indication was made to what distinguished one reasonably skilled from one ordinarily skilled; nor did the facts demand such a distinction. It would appear that the Court's factual inquiries, especially in *Adams*, establishing the level of skill in the art, would imply that reasonably skilled and ordinarily skilled are synonymous, and that both are related to the teachings of the prior art. Nevertheless, the use of this language is regrettable because of its potential for misinterpretation and misapplication of the statutory standard.

C. *Anderson's-Black Rock v. Pavement Salvage*¹⁰²

Black Rock presented problems not encountered in the Trilogies. The presumption of the level of skill in the art made in the *Graham* and *Cook Chemical*¹⁰³ cases, if made in *Black Rock*, would have been rebutted by factual evidence of the level of skill of one of ordinary skill in the art. The issue is raised whether the lower level of skill in the art as factually ascertained, prevails over the presumed but higher

⁹⁵ Id. at 51.

⁹⁶ Id. at 52.

⁹⁷ Id.

⁹⁸ Id.

⁹⁹ Id.

¹⁰⁰ "As we have seen in *Graham* . . . novelty and nonobviousness—as well as utility—are separate tests of patentability and all must be satisfied in a valid patent." 383 U.S. at 48.

¹⁰¹ 383 U.S. at 37, 52.

¹⁰² 396 U.S. 57 (1969).

¹⁰³ The presumption being that one of ordinary skill in the art possessed reasonable mechanical design ability, as in *Graham*, and the skill to appreciate and apply the prior art to the analogous problem in *Cook Chemical*.

minimum level of skill ascertained independently of factual inquiries. If the statutory standard is to achieve its stated purpose of bringing about uniformity in the determination of patentability, it has been shown that a purely relative standard is necessary, in which case the former level of skill must prevail.¹⁰⁴ Unfortunately, the Supreme Court impliedly chose the independently ascertained level over the factually dependent level.¹⁰⁵

The patented device in *Black Rock* was a machine for use in bituminous paving.¹⁰⁶ The bituminous pavement art had long been plagued by the formation of a "cold joint." In practice, several adjacent strips of pavement would have to be laid. However, the first strip would have cooled by the time the paver returned to lay an adjacent strip. The cooled and hardened edge of the first strip would not form a bond with the new pavement, causing a cold joint to result. The joint permitted the seepage of water and dirt between the strips causing ravelling and accelerated deterioration of the pavement.¹⁰⁷

Those skilled in the art had sought a solution to the problem through the use of heat to soften the edge of the first strip so that a bond could be formed. The use of an open flame was found to be ineffective. Indeed the high temperature carbonized the edge thus aggravating the problem. Radiant heaters were also found to be ineffective, being incapable of producing the penetrative heat necessary to melt the edge to a depth sufficient to form a stable bond. Although radiant heaters were used for limited patching operations, those skilled in the art abandoned the use of heat as a solution to the cold joint problem, concluding that the heat required for deep penetration could not be obtained without the deleterious effects of carbonizing.¹⁰⁸ A costly and time-consuming procedure was adopted to minimize, but not eliminate, the effects of the cold joint. The edge was cut back several inches to form a smooth vertical surface. This was "painted" with hot asphalt and the adjacent strip was laid. The inventor, Neville, attempted to solve the cold joint problem by use of an improved radiant heater. He incorporated the heater along with the elements of a standard paver into a single unit which laid the adjacent strip and removed the cold joint in a single step.

The radiant heater used was not itself patentable.¹⁰⁹ The use of

¹⁰⁴ See text at note 47 supra.

¹⁰⁵ The Court's conclusion in terms of section 103 obviousness despite factual evidence of non-obviousness indicates that the evidence was not conclusive in establishing the status of the statutory standard. Thus the skill of one of ordinary skill in the art, on the basis of which obviousness was predicated, was ascertainable independently of the evidence indicating a lower level of skill to which the device was non-obvious. 383 U.S. at 62.

¹⁰⁶ 396 U.S. at 57.

¹⁰⁷ Id. at 57, 58.

¹⁰⁸ *Pavement Salvage Co., Inc. v. Anderson's-Black Rock, Inc.*, 404 F.2d 450, 451 (4th Cir. 1968).

¹⁰⁹ The heater used was almost identical with that disclosed by Swank in U.S. Patent No. 2,775,294. 396 U.S. at 58.

the heater in working asphalt was not patentable for lack of novelty.¹¹⁰ The question presented was "whether the combination of the old elements created a valid combination patent."¹¹¹ The Court concluded "that the combination was reasonably obvious to one with ordinary skill in the art."¹¹² Clearly the combination fulfilled the requirements of novelty and utility,¹¹³ and section 103 should have been determinative of the patent validity.

In support of non-obviousness, testimony of experts in the field was offered. They not only found that the solution was non-obvious, but they refused to believe Neville's claims that he had achieved the solution by use of a radiant heater.¹¹⁴ The subtests of non-obviousness were also advanced in support of non-obviousness.¹¹⁵ The combination fulfilled a long felt need, achieved commercial success, was recognized by others in the art as a great advance, and overcame the repeated failures of those in the art to solve the problem.¹¹⁶ The Supreme Court did not find this evidence controlling.

Initially, the Court advanced the requirement for a "synergistic result."¹¹⁷ This non-statutory requirement may be best understood in light of the Court's statement that "while the combination of old elements performed a useful function . . . it *added nothing* to the nature and quality of the radiant-heat burner already patented."¹¹⁸ (Emphasis added.) This conclusion was reached despite the Trilogy's express disapproval of the requirement for a *new result* in favor of an analysis of the *obviousness of the result*.¹¹⁹

In effect, the Court stated that the unpatentable heater could not be merely incorporated with functionally independent elements to form a patentable combination. The effect produced was not that of the combination per se, but merely the sum of the effects of the independent elements.¹²⁰ As such, this rationale is a *definition of patentable combination*. The question is whether this definition is justifiable.

Although the rationale is appealingly consistent, the statutory requirements in terms of which patentability must be determined are novelty, utility and non-obviousness of the subject matter.¹²¹ Combinations come within the section 101 definition of patentable arti-

¹¹⁰ Prior art, U.S. Patent No. 1,136,294; U.S. Patent No. 2,053,709; British Patent No. 756,911 disclosed the use of heat in working asphalt. 404 F.2d at 451.

¹¹¹ 396 U.S. at 59.

¹¹² Id. at 60.

¹¹³ The "combination" itself was novel although use of a radiant heater was not. The "combination" was also useful.

¹¹⁴ 404 F.2d at 453; 396 U.S. at 59.

¹¹⁵ 396 U.S. at 61.

¹¹⁶ 404 F.2d at 454.

¹¹⁷ 396 U.S. at 61.

¹¹⁸ Id. at 62.

¹¹⁹ See note 77 supra.

¹²⁰ 396 U.S. at 60.

¹²¹ 35 U.S.C. § 100 et seq. (1964).

cles.¹²² Furthermore, section 112 deals explicitly with combinations. The device in question was within the definition of section 100 and met the requirements of section 101 and section 102. Therefore, the sole requirement remaining for determination was that of section 103, non-obviousness of the subject matter.

It is notable that in the vast majority of cases the combination which produces solely the sum of the effects of the independent elements will be obvious under section 103. The combination which produces an effect which differs from the anticipated sum of the effects of the independent elements, a synergistic result, is non-obvious. While a synergistic result is always indicative of non-obviousness, it is asserted that the converse does not follow; that is, that a non-synergistic result is always indicative of obviousness under section 103 does not follow. The device itself may reveal the principles upon which its success depends and in this manner demonstrate the previously unappreciated effect of one or more of the elements. In other words, the disadvantages existing in the prior art are assumed to exist in the element incorporated, but *upon combination* it is discovered that this assumption was clearly erroneous. Thus, the result achieved is the obvious result which would be anticipated to occur from the combination of the elements. This conclusion disregards the invalidating effect of the use of hindsight, as well as the fact that the choice to combine these elements may itself have been non-obvious.¹²³ In *Black Rock*, given the characteristics of the heater along with the other elements of the combination, the result will be obvious. However, to those in the art, it would not be obvious to choose this heater, or look to its specifications, in light of the apparently conclusive nature of the failures of those who had attempted to use heat as a solution to the cold joint problem. Only *after the fact* did the crucial manner in which this heater differed from prior art become apparent, and only the success of this combination revealed the cause for the failures in the prior art. Thus, the require-

¹²² Federico, Commentary on the New Patent Act, 35 U.S.C.A. 1, 17 (1954) explaining the definition of the word "process" in 35 U.S.C. § 100(b) (1964) as used in 35 U.S.C. § 101 (1964).

¹²³ See, e.g., Application of Gray, 230 F.2d 432 (C.C.P.A. 1956); Marvel Specialty Co., Inc. v. Bell Hosiery Mills, Inc., 216 F. Supp. 824 (W.D. N.C. 1963), aff'd in part, rev'd in part on other grounds, 330 F.2d 164 (4th Cir. 1964); Application of Irmischer, 262 F.2d 85, 87 (C.C.P.A. 1958), where the court stated that "the mere fact that the individual steps are taught by the several references does not of itself negative patentability It must still be determined whether the *combination* of steps would have been obvious to an ordinary skilled worker in *this art*." (Emphasis added.); See also Application of Pennington, 241 F.2d 750, 754 (C.C.P.A. 1957), where the court stated:

We are not unmindful of the fact that it might be said that the modifications of appellant over the prior art apparatus do not produce what would normally be termed "new and unexpected results." We are of the opinion, however, that this consideration is not the determinant here, for it is well recognized that in many cases invention may consist in one or both of two steps: 1) the conception of the general result wished for; 2) the actual means of achieving that result.

ment of a synergistic result for patentability of a combination is erroneous in terms of the statutory standards.

The Court apparently recognized the fallacy in requiring a synergistic result of all patentable combinations and determined patentability in terms of obviousness. It was concluded that "to those skilled in the art the use of the old elements in combination was not an invention by the obvious-nonobvious standard."¹²⁴ This conclusion necessarily disregards the direct evidence of non-obviousness and the indicia of non-obviousness presented by the subtests, and leads to the inescapable implication of some minimum level of skill required of one of ordinary skill in the art.¹²⁵ The level of skill with reference to which the Supreme Court made its determination of obviousness was not the purely relative standard demanded by section 103. It is suggested that this departure from a purely relative standard is not justifiable on the basis of statutory construction, constitutional requirements or public policy.

IV. JUSTIFIABILITY OF THE BLACK ROCK DEPARTURE FROM THE SECTION 103 STANDARD OF PATENTABILITY

The judicial interpretation of section 103 has indicated the purely relative nature of the standard.¹²⁶ Furthermore, the language of the section is not given to a non-relative construction. "Ordinary skill in an art" is defined as "[t]hat degree of skill which men engaged in that particular art usually employ; not that which belongs to a few men only, of extraordinary endowments and capacities."¹²⁷ "Person" is defined as "[a] man considered according to the rank he holds in society, with all the right to which the place he holds entitles him, and the duties which it imposes."¹²⁸ The combination of these definitions yields a purely relative standard. The definition of obviousness reinforces the conclusion that no minimum competence ascertained independently of factual inquiries is contemplated by the language of section 103.¹²⁹

¹²⁴ 396 U.S. at 62, 63.

¹²⁵ See note 105 *supra*.

¹²⁶ See pp. 923-24 *supra* and text at note 123.

¹²⁷ Black's Law Dictionary 1250 (Revised 4th ed. 1968).

¹²⁸ *Id.* at 1299.

¹²⁹ Webster's Third New International Dictionary (1963) defines "obvious" as: Capable of easy perception . . . requiring very little insight or reflection to perceive, recognize, or comprehend . . . *requiring no thought or consideration* to understand or analyze . . . so simple and clear as to be unmistakable . . . disappointingly simple and easy to discover or interpret . . . wanting in any challenging or interesting complexity or ingenuity (Emphasis added.)

Note that (1) what is "obvious" as so defined to a person is dependent upon his knowledge and perceptive ability and (2) some principle may be discernible by the use of reason, reflection or after consideration and yet *not* be obvious. If consideration or use of reason is necessary to overcome a predisposition of an individual, the solution to a problem is not obvious to *that* individual although it may be obvious to one not so predisposed.

Although not justifiable in terms of statutory construction alone, is the imposition of the independent minimum standard constitutionally required and therefore justified? As indicated, the sole constitutional requirement is that the section be enacted "to promote the Progress of . . . the Useful Arts."¹³⁰ The argument has been made that a device need not be better than the prior art in order to be patentable since the progress of the useful arts may be promoted by enrichment as well as by addition.¹³¹ A *new* way of doing something which is no better a means than that disclosed in the prior art, may nevertheless inspire a solution to a problem in another art by providing new avenues for those in that art.¹³² The progress of other useful arts is not hindered in any additional degree since the new device may prove more advantageous in certain applications due to reduced cost or other factors not directly related to the efficiency with which it performs. Similarly, a contribution, non-obvious to one of ordinary skill in an art, promotes the progress of that art by enrichment as well as addition. Moreover, the progress of other arts is not hindered by the patent grant since the patentee has disclosed a method or device previously unavailable because those not skilled in the art had relegated developments to those skilled in the art. Although the solution would have been obvious to one not skilled in the art, the fact remains that solution was not offered by those outside the art although their arts may have suffered by lack of the solution. The disclosure of the solution directly benefits these arts. The conclusion must be that a purely relative standard fulfills the constitutional requirement and a minimum non-relative standard is not demanded.¹³³

The final grounds for justification must be that of policy. It has been shown that the express policy behind the enactment of section 103 was to correct the conditions of confusion and lack of uniformity created by the determination of patentability independently of factual inquiries via the judicially established invention requirement.¹³⁴ This legislative policy will be substantially defeated by imposition of an independent minimum upon the otherwise purely relative statutory standard.¹³⁵ The sole justification for defeating the policy of this specific section must have been a determination that full implementation of this section to effectuate its policy would conflict with an overriding policy of the statute as a whole. This practice should be resorted to only when the policies cannot be otherwise reconciled and

¹³⁰ U.S. Const. art. I, § 8, cl. 8.

¹³¹ See, Rich, *Principles of Patentability*, 28 Geo. Wash. L. Rev. 393, 400 (1960), where the author states: "[w]henver novel subject matter, unobvious to the workers of ordinary skill in an art, is published, progress in the art is promoted."

¹³² *Id.*

¹³³ Cf. Rich, *supra* note 131, where the author demonstrates the lack of necessity for a non-statutory requirement that the device be better than the prior art in order to promote the progress of the useful arts—a requirement employing a nonrelative standard.

¹³⁴ See pp. 920-23 *supra*.

¹³⁵ See p. 923 *supra*.

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are mutually exclusive. In this area, the overriding public policy is generally phrased as a requirement of some meritorious contribution which is sufficient to permit the "embarrassment" of a private right on the public domain.¹⁸⁶ Several objections may be made to justifying the imposition of an independent minimum upon the purely relative statutory standard on the basis of this policy argument.

It may be asserted that the proper arbiter of public policy is the legislature. Hence, when faced with a conflict the specific policy controls the general policy since the legislature would not pursue the conflicting policy unless it determined that the exception to the general policy was significant enough to warrant itself. Furthermore, it may be claimed that the overriding public policy is solely the policy expressed in the Constitution. Any policy abstracted from the patent laws as a whole is limited by this constitutional policy. Thus, such an abstracted policy should not be effectuated to defeat the specific policy of section 103 which is in concert with the constitutional policy of promoting the progress of the useful arts. Arguably, the construction given section 103 detracts from the incentive provided inventors to invent and to disclose their discoveries in return for patent protection. Since it is the disclosure as well as the incentive to invent which promotes the progress of the useful arts, a construction which lessens this incentive thwarts the constitutional policy and cannot be justified on social or other non-constitutional grounds.¹⁸⁷ Finally, if the overriding policy is considered as an amplification or interpretation of the constitutionally expressed policy, nevertheless the specific policy of section 103 should be effectuated since no conflict exists. The whole of our national endeavor benefited *directly* from the disclosure of the device used in *Black Rock*. There is no indication that the solution would have been forthcoming from another source. Thus, the disclosure which was made and the subsequent manufacture of the devices under patent protection led to widespread improvement of the nation's highways. Lower costs resulted in the reallocation of tax revenues to more advantageous purposes. The safety of all motorists was increased by removal of the joint and by the lessening of the dangers inherent in a cracked, potholed or uneven road surface. These benefits were derived from the incentive to disclose the device offered by the patent system, as well as the incentive to invest resulting from the protection afforded the patented device. The manufacture and distribution of an expensive piece of machinery, such as the paver in question, requires a large initial investment of capital. If the machinery is not produced, the public does not benefit; but without capital there is no production. Without incentive to invest, the capital will not be forthcoming. Furthermore, just as investors are unwilling to invest without protection and assurance of

¹⁸⁶ 383 U.S. at 10, 11.

¹⁸⁷ See Rich, *supra* note 131, at 402 where the author concludes: "True, they are temporary monopolies, but therein alone lies their power as inducements to invent, to disclose, to invest, and to design around."

a return on their money, so also the inventor is without incentive to disclose his discovery or to produce the machine on his own since his idea will be stolen. Rather, he will rely upon secrecy and offer his services, but not the machine itself, for sale.¹³⁸ The useful arts are not promoted in this event. It should be remembered that the monopoly of which the courts speak with restrained dislike, is given by the government in exchange for disclosure by the inventor. It was his right to keep the knowledge secret and to deprive the public of its benefits. He gave up that right in return for another, his patent rights. Thus, the result in *Black Rock* of imposing an independent minimum upon the statutory standard is not justifiable. The Supreme Court should disavow the *Black Rock* rationale and return to the Trilogy standard in its determination of patentability.

Besides the deleterious effect of *Black Rock* upon the prospects of achieving uniformity, the rationale of the case detrimentally affects patent litigation.

[A]n artificial decrease in the cost of litigation at the price of having valid patents summarily held invalid for want of proper trials where objective evidence of non-obviousness could be presented is not tolerable under the statute. It is not only antithetical to the best interests of industry, science, and the useful arts in the United States but will not serve any other identifiable social interest.¹³⁹

CONCLUSION

"Justice Holmes said that the life of the law has not been logic but experience. In *Black Rock*, the Supreme Court has defied both."¹⁴⁰ This decision has returned the determination of patentability to the confusion which preceded the enactment of the Patent Act of 1952. By imposing a minimum level of skill upon the statutory standard, a minimum determined independently of factual inquiries, *Black Rock* departed from a purely relative standard substantially defeating the legislative purpose and policy behind the enactment of section 103. Moreover, the case confuses the application of section 103 and detrimentally affects patent procurement and litigation. For these reasons, *Black Rock* should be disapproved by the Supreme Court, and lower courts should adhere to the Trilogy rationale despite its conflict with *Black Rock*. The statutory standard is properly a purely relative standard dependent upon factual inquiries. Therefore, the factual inquiries announced in *Graham* should be viewed as mandatory.

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¹³⁸ This will result in limiting the extent of the use of the device and its benefits, while increasing the cost of the benefits to the few who can obtain them.

¹³⁹ 1 Patent Law Perspectives, 1969-70 Annual Review § A.1[1][A.1[1]-52].

¹⁴⁰ Id. § A.1[1][A.1[1]-6].