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TRACING THE CONCEPT OF "PATENTABLE INVENTION"

EDWARD B. GREGG†

The standard of patentable invention, after a long period of abstention, has received significant attention in the United States Supreme Court in recent years. Mr. Gregg presents the point of view of a practitioner who has had a long and varied experience in the practice of patent law. Avoiding an extensive study of secondary sources, he confines his analysis to reported cases with special emphasis on landmark cases in the United States Supreme Court.

I. INTRODUCTION

OUR AMERICAN PATENT SYSTEM is derived from the English Statute of Monopolies,¹ which, we are told, put an end to "bad monopolies" that encroached upon the public domain, such as a monopoly of playing cards in *Darcy v. Allein*,² but allowed "good" monopolies where new inventions or manufactures were devised. As far as I know, the patent systems of the thirteen original Colonies, to the extent that patent systems then existed, and patents granted by the States before Congress gave effect to its constitutional grant of power, have had no significant effect on the present American system. The first important step taken by the United States in this area was in 1789 with the ratification of the United States Constitution, which reads in pertinent part: "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."³ Pursuant to this constitutional grant, Congress enacted the first patent statute, the Patent Act of 1790.⁴

Before 1836, however, the formalities and procedures required for the granting of a patent were simple and unsophisticated. There was no Patent Office, no examination was required, and a patent was granted if the Secretary of State, the Secretary of War, and the At-

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1. 21 Jac. I ch. 3 (1623-24). The statute is set forth in 1 A. WALKER, PATENTS 18-21 (Deller's ed. 1937).

2. 11 Coke, R84-b; 77 Eng. Rep. 1260 (K.B. 1602).

3. U.S. CONST. art. I, § 8.

4. Ch. 7, 1 Stat. 109; See W. ROBINSON, PATENTS § 48, at 76-80 (1890); 1 A. WALKER, *supra* note 1, at 35.

torney General, or any combination of two of these officials deemed the invention to be sufficiently useful and important.⁵ In that year, through statutory authorization, the Patent Office was established as was a system of patent application examination by that agency.⁶ The requirements for patentability as set forth in that statute are that the subject matter be an art, machine, manufacture or composition of matter (or an improvement thereof), that it be new and useful, that it be not known or used prior to the inventor's discovery thereof, and that it be not in public use or on sale or described in a printed publication prior to the date of filing the application for the patent.⁷

II. THE COMMON LAW OF PATENTABLE INVENTION

During much of the nineteenth and early twentieth centuries, a substantial proportion of non-diversity litigation in the lower federal courts consisted of patent litigation. To a great degree, the important principles of patent law, including the criteria for determining what constitutes a patentable invention, were formulated in these courts during that period.⁸ It is notable that while the earliest patent statutes, mentioned above, did enumerate certain requirements for a patentable invention, including novelty, utility, not previously in public use or on sale, they did not mention, as a condition of patentability, that there must be something unusual about a patentable invention, something in addition to the formal requirements. This condition of statutory reticence continued until the enactment of the Patent Act of 1952.⁹

The Supreme Court, as well as the other federal courts, however, had long since adopted the rule that even though an invention meets all of the formal statutory requirements, it nevertheless is not patentable unless there is something about it which is not obvious to those skilled in the art to which the invention pertains. This judge-made rule is at the basis of the common law of patentable invention.

The first Supreme Court case in the area, and still one of the leading cases, was *Hotchkiss v. Greenwood*.¹⁰ That case involved a patent on a doorknob made of clay or porcelain instead of other materials, such as metal, as had been the custom. The trial judge instructed the jury, in substance, as follows: If the jury found that all that the plain-

5. W. ROBINSON, *supra* note 4, at § 49, p. 81 nn.1 & 2.

6. See Patent Act of 1836, ch. 375, 5 Stat. 117.

7. Patent Act of 1836, ch. 357, §§ 6-7, 5 Stat. 117.

8. Among the judges of the lower federal courts who played a significant role in the early formulation of the principles of patent law were Judge Learned Hand of the Second Circuit and Judge Taft (later Chief Justice of the United States) of the Supreme Court.

9. 35 U.S.C. (1954) [hereinafter referred to as the Patent Code].

10. 52 U.S. (11 How.) 261 (1850).

tiff did was to substitute one material (clay or porcelain) for another material (metal) and to connect the knob to the spindle and shank in the same manner as had been done with metal knobs, and that, "no more ingenuity or skill [was] required to construct the knob in this way than that possessed by an ordinary mechanic acquainted with the business,"¹¹ then the jury should hold the patent invalid and render its verdict for the defendant. The jury so found and so held. On writ of error, the Supreme Court affirmed, utilizing the same grounds as the instruction summarized above, which the Supreme Court reworded as follows :

[F]or unless more ingenuity and skill in applying the old method of fastening the shank and the knob were required in the application of it to the clay or porcelain knob than was 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. In other words, the improvement is the work of the skillful mechanic, not that of the inventor.¹²

Inherently, the criterion of "ingenuity and skill" above and beyond that "possessed by an ordinary mechanic acquainted with the business" is a subjective criterion. Who is skilled in a business? Having determined that, how does one determine whether the invention is or is not within the ordinary skill of such a person? Any patent lawyer who has tried, participated in, and closely observed a large number of patent infringement suits over a substantial period of time before a variety of judges, including newly-appointed freshmen judges and old hands at patent litigation, will, I believe, agree with the following appraisal of the situation. Assuming that the invention meets all of the formal statutory requirements of patentability (novelty, utility, etc.) and that it is not one which, on its face, has a totally obvious character (*e.g.*, the clay doorknob of *Hotchkiss*), and assuming further that the invention has made a substantial contribution to the business to which it pertains, a conscientious judge will have grave doubts (and there are always doubts) and will weigh the arguments pro and con as to whether the advance made by the invention was or was not something which is within the ordinary skill of one who is competent in the business. It will not be surprising to lawyers experienced in other types of litigation that the legal principle of "obviousness," as the rule of *Hotchkiss* has come to be known, can be, and usually is, obfuscated by the forensic skill of patent lawyers who bring their experts into court to testify

pro-obviousness on behalf of the defendant and anti-obviousness on behalf of the plaintiff. In patent litigation, as in other types of litigation, it is the application of a simple rule that is difficult. For example, the criteria of the average prudent man in connection with the handling of trust funds, market value in condemnation cases, and safe and reasonable conduct such as the speed of an automobile under prevailing circumstances are all easily stated but often difficult to apply. So it is with the test of "obviousness" as set forth in *Hotchkiss*.

Another pertinent and interesting fact is that in certain fields of litigation, notably personal injury litigation, the difficult problem of applying a legal principle to a factual situation is most often fobbed off on a jury. In most cases it is twelve laymen who, being instructed as to the law by the judge, must apply that law to conflicting and oftentimes confusing factual situations brought out during the course of a trial. In patent litigation, however, injunctive relief is presently sought in nearly all cases under section 283 of the Patent Code,¹³ and such relief was nearly always sought in earlier days under predecessor statutes. A patentee seeking relief in the courts is not precluded from a jury trial if he is willing to forgo demand for injunctive relief, but the attraction of injunctive relief has been such that jury trials are the exception. Added to this is the inertia of the patent trial bar which is so accustomed to trials without a jury that we (and I must include myself) tend to waive the right to a jury trial, preferring instead the more familiar route of a court trial.

This preference for court rather than jury trials is not peculiar to practicing lawyers; it is shared to some degree by the judiciary.¹⁴ The following excerpt from a recent opinion by the Court of Appeals for the Fifth Circuit exemplifies this point:

This record presents a perplexing case of alleged patent infringement. It points up the frustration to be found in the growing practice of requesting jury trials in patent infringement cases instead of proceeding as in equity. The situation was not improved by the defendant's motion for a directed verdict at the close of the plaintiff's proof. The District Judge was of the view that the cause of action was altogether without merit and granted the motion. The plaintiff has appealed. Upon a tedious, painstaking

13. "The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable." 35 U.S.C. § 283 (1954).

14. Parenthetically, it might be an interesting exercise in "comparative" law (i.e., comparative of judges versus juries in applying legal principles to factual situations) to study and report upon the statistics of court judgments versus jury verdicts in patent cases and upon the prevalence of directed verdicts and judgments n.o.v. in patent jury cases.

review we find it necessary to reverse and remand for a new trial.¹⁵

In other words, the courts would have been bored only once had the plaintiff taken the conservative course of a trial in an equity court. But, having had the audacity to demand his constitutional right to a jury trial,¹⁶ the plaintiff has plagued the courts with two rounds of perplexing ennui.¹⁷

To return from this digression, the courts have, over the years, evolved certain more or less objective subcriteria to aid in applying the basic criterion of nonobviousness to a person skilled in the art. One such subcriterion is commercial success. That is, has the invention been a success in the sense that it has to some extent replaced old structures or modes of operation and has it also been financially profitable? If the answer is affirmative, that favors patentability. However, commercial success may be due to various factors unrelated to the merits of the invention, such as large advertising expenditures, business or administrative skill, or a change in technology that has made the invention more practical than before. For example, in the case of plastic goods, the widespread availability of plastics has made such a contribution to their success that the first person to make a frying pan out of plastic may have had nothing more than the business acumen to avail himself of a heat-resistant plastic that was invented and developed by someone else. A noteworthy case in point is *Hotchkiss*, wherein the Court said in substance that the mere exercise of business acumen in selecting a better material, the qualities of which are already known, to construct an old device is not sufficient for a patentable invention; it is only the exercise of the ordinary, expected skill of the art. It is for such reasons that commercial success has been largely relegated to the status of a makeweight to be used in support of patentability if, but only if, without considering it, the issue is otherwise in doubt.¹⁸ This approach may seem to be a semantic trick because, if the issue of patentability is not in doubt, then the criterion of commercial success is superfluous. But what the courts mean is that one or more of the other subcriteria must be satisfied in order to escape a holding of invalidity, regardless of the question of commercial success. But,

15. *Reynolds-Southwestern Corp. v. Dresser Indus., Inc.*, 372 F.2d 592, 593 (5th Cir. 1967).

16. U.S. CONST. amend. VII.

17. There is a widespread belief in the patent bar, one which has some justification, that certain judges pursue the easy course by construing every doubt about patentability in favor of nonpatentability and a holding of patent invalidity. But it has been my experience, and I believe the experience of most other patent lawyers, that most judges are more conscientious and wrestle with the problem of patentability. 18. For an extensive treatment of commercial success as a makeweight in favor of patentability see 2 A. WALKER, PATENTS § 125, at 307-28 (Deller's 2d ed. 1964).

if after applying other subcriteria there is still doubt, then the criterion of commercial success may be considered to resolve the doubt in favor of patentability.

Another subcriterion, and the one that seems the most persuasive, is as follows: (1) Was there a problem to be solved? (2) Was this problem recognized as a problem by others skilled in the art who were, however, unable to solve it? (3) Did the patented invention solve the problem? If the answers to questions (1), (2) and (3) are affirmative, then the patent is valid. If, on the other hand, the answer to any of these questions is negative, then the patent is more likely than not to be held invalid.

In *Washburn & Moen Mfg. Co. v. Beat'Em All Barbed-Wire Co.*,¹⁹ generally known as *The Barbed Wire Patent*, the patent was for a small improvement in the design of barbed wire, but one which, in the words of the Court, represented "the final step which has turned failure [referring to failures of prior patented designs for barbed wire] into a success."²⁰ A more recent case which is more in tune with the modern trend of severity toward patents is *Altoona Publix Theatres Inc. v. American Tri-Ergon Corp.*²¹ *Altoona* involved a patent on sound film and more particularly a massive flywheel for obtaining a sound track of high fidelity. The lower court attributed the rapid development of the sound motion picture industry to the invention of the patent in suit and for that reason held the patent valid. The Supreme Court disagreed. After discussing, at length, the ever-present penumbra or overlap of commercial success (a makeweight) and satisfaction of a longfelt need (a weighty propatent factor),²² and noting the aforementioned holding of the lower court, the Court held that "the record fails to show that there was any longfelt or generally recognized want"²³ for the invention, and that, on the contrary, the success of the invention was in the nature of a windfall resulting from the development of other needed equipment such as adequate amplifiers, loudspeakers, and microphones, without which sound pictures were impractical.²⁴ The ultimate holding of the Supreme Court was that "[o]nly the skill of the art was required to adapt the flywheel device" to an otherwise fully developed system.²⁵

19. 143 U.S. 275 (1892).

20. *Id.* at 283.

21. 294 U.S. 477 (1935).

22. *Id.* at 487-88.

23. *Id.* at 488.

24. *Id.*

III. EVOLUTION OF THE COMMON LAW OF PATENTABLE INVENTION FROM 1930 TO THE EARLY 1950'S

The severe economic depression of the 1930's and the New Deal reforms and attitudes that it precipitated were not without effect on the patent system. The reforming ardour of such persons as Thurmond Arnold in the field of "trustbusting" and Walton Hamilton of the Temporary National Economic Committee²⁶ created a ground swell against patents among persons who were influential in Congress, the executive agencies, and the courts. In 1938 TNEC investigated the glass manufacturing industry and brought to light certain startling facts. Hartford-Empire, Owens-Illinois, Corning Glass Works, Hazel-Atlas, and other companies in the glass manufacturing industry had pooled their patents and acquired others on glass manufacturing machinery. This pool and the agreements concerning it dominated the glass container industry. This situation, described by the Supreme Court in the ensuing antitrust case as a conspiracy,²⁷ allotted production quotas among the various manufacturers and severely restrained competition. The muscle and teeth of the conspiracy were the pooled patents. Any party to, or victim of, the conspiracy who might kick over the traces was subject to suit and oftentimes was sued for patent infringement. The portfolio of pooled patents to choose from was immense; it exceeded 800 in 1938.²⁸

The inequity and iniquity of the Hartford conspiracy had an unfavorable influence upon the attitudes of high government officials toward patents in general and toward the standard required for the granting of a patent. After all, patents were at the heart of the conspiracy. In *Special Equip. Co. v. Coe*,²⁹ the greatest trustbuster of them all, Mr. Thurmond Arnold, sitting then as a judge of the Court of Appeals for the District of Columbia, denied a patent, not on the technical grounds urged by the defendant,³⁰ but on a broader ground of public policy. Under the facts of this case a patent had already been granted to the plaintiff on its entire machine. Plaintiff sought to obtain another patent on a part of the same machine. The Commissioner of Patents had denied such a patent, known as a sub-combination patent, on a technical ground that need not concern us here. Judge Arnold, speaking for an unanimous court, swept aside this technical

26. Hereinafter referred to as TNEC.

27. *Hartford-Empire Co. v. United States*, 323 U.S. 386, 399 (1945).

28. *Id.* at 400.

29. 144 F.2d 497 (D.C. Cir. 1944).

30. Being an appeal from the Patent Office, the defendant was the Commissioner of Patents, Conway P. Coe.

ground and affirmed the denial of a patent on the general ground that, since the plaintiff already had a patent on the entire machine, the only purpose to be served by a second patent on a part of the machine (which part was not useful by itself) would be to bar others from using the sub-combination in conjunction with something else. Judge Arnold reasoned that "blocking" patents are not in the public interest and do not serve the constitutional purpose of promoting science and the useful arts.³¹ Judge Arnold was reversed by a majority of the Supreme Court in *Special Equip. Co. v. Coe*,³² but not without a vigorous dissent by three Justices. Justice Douglas' dissenting opinion, concurred in by Justices Black and Murphy, echoed the thunder of TNEC:³³ "It is a mistake therefore to conceive of a patent as but another form of private property. The patent is a privilege 'conditioned by a public purpose.'"³⁴

The 1940's were indeed dark days for friends of the patent system. In *Marconi Wireless Tel. Co. v. United States*,³⁵ the Supreme Court, per Chief Justice Stone, held one of Marconi's wireless patents invalid for lack of invention. This moved the three dissenting justices to marvel that in 1943 the Supreme Court, consisting of laymen, in the technological sense, should hold that a basic contribution to wireless technology made by Marconi in 1900 was something obvious and unworthy of a patent.³⁶ In *Jungersen v. Ostby & Barton Co.*,³⁷ the Supreme Court reversed Judge Learned Hand of the Second Circuit and held a patent invalid for lack of invention. One of the three dissenting justices, Mr. Justice Jackson, felt compelled to say:

It would not be difficult to cite many instances of patents that have been granted, improperly I think, and without adequate tests of invention by the Patent Office. But I doubt that the remedy for such Patent Office passion for granting patents is an equally strong passion in this Court for striking them down so that the only patent that is valid is one which this Court has not been able to get its hands on.³⁸

Considerable pessimism was engendered by Supreme Court decisions in the 1940's relating to the standard of patentable invention. However, this pessimism was relieved somewhat, albeit briefly, when the Court held a patent valid in *Graver Tank & Mfg. Co. v. Linde Air*

31. 144 F.2d at 498-99.

32. 324 U.S. 370 (1945).

33. Cf. Justice Douglas' quotation of HAMILTON, PATENTS AND FREE ENTERPRISE 152 (TNEC Monograph No. 31, 1941). *Id.* at 381 (dissenting opinion).

34. 324 U.S. at 382.

35. 320 U.S. 1 (1943).

36. *See id.* at 63-64 (dissenting opinions).

37. *See id.* at 350 (1943).

38. *Id.* at 572 (dissenting opinion).

Prods. Co.,³⁹ which followed close on the heels of *Jungersen*. It is worthy of note that Mr. Justice Jackson, the dissenter in *Jungersen*, wrote the opinion of the Court in *Graver*, a unanimous opinion save only that Justices Black and Douglas stated their conviction that the ultimate question of patentability is one of law and not of fact. Even though some of the claims of the patent (those directed to a process of welding) were held invalid, the victory went to the patentee in *Graver* because other claims to the product (a flux used in welding) were held valid.

Graver is often cited⁴⁰ for the proposition that Rule 52(a) of the Federal Rules of Civil Procedure, which accords to a trial court's findings of fact a presumption of correctness on appeal, is especially applicable to a case "where the evidence is largely the testimony of experts as to which a trial court may be enlightened by scientific demonstrations,"⁴¹ and that the Supreme Court, not being a court for correction of errors, "cannot undertake to review concurrent findings of fact by two courts below in the absence of a very obvious and exceptional showing of error."⁴² It would be a rash patent lawyer who took this to mean that appellate courts are more inclined to affirm trial courts' findings of fact with regard to patentability than other findings. The only apparent inclination, according to the general consensus of the patent bar, is that an appellate court is more inclined to reverse when a district court validates a patent than where the district court finds invalidity.

The favorable climate engendered by *Graver* was short-lived. In 1950 the Supreme Court decided *Great Atlantic & Pacific Tea Co. v. Supermarket Equip. Corp.*⁴³ As in *Graver*, the patent had been sustained by both the district court⁴⁴ and the court of appeals.⁴⁵ However, the "two court rule" of *Graver* was not applied in *A & P*, notwithstanding the fact that the patented invention had solved a longstanding problem.⁴⁶ By a unanimous decision the Supreme Court reversed the two lower courts and held the patent invalid for lack of patentable invention.

Why was respect for the "two court rule" in *Graver* followed by a seemingly contradictory result in *A & P*? The answer, if there is one,

39. 336 U.S. 271 (1949).

40. See, e.g., *United States v. Shubert*, 348 U.S. 222, 228-29 n.10 (1955); *Barie v. Superior Tanning Co.*, 182 F.2d 724, 727 (7th Cir. 1950); *Charles Peckat Mfg. Co. v. Jacobs*, 178 F.2d 794, 802 (7th Cir. 1949).

41. 336 U.S. at 274.

42. *Id.* at 275.

43. 340 U.S. 147 (1950).

44. See *Bradley v. Great Atl. & Pac. Tea Co.*, 78 F. Supp. 388 (E.D. Mich. 1948).

45. See *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 179 F.2d 636 (7th Cir. 1950).

46. See *id.* at 638.

is probably to be found in the nature of the inventions in *Graver* and *A & P*. In *Graver* the invention was a chemical composition which accomplished a startling result — it was the only welding means whereby plates as thick as two and one-half inches could be welded in a single pass, it was far speedier, it produced much better welds than the prior art, and for the first time welding could be carried out on a large industrial scale without open arcs. In *A & P* the invention was a simple mechanical device — a checkout stand for a grocery market consisting of an open bottom, a three-sided frame or rack, and tracks on the stand to guide it. The Court could readily see that this contrivance was simple and that it would operate in an obvious manner, and the crucial holding of the Court in *A & P* was as follows :

The conjunction or concert of known elements must contribute something; only when the whole in some way exceeds the sum of its parts is the accumulation of old devices patentable. Elements may, of course, especially in chemistry or electronics, take on some new quality or function from being brought into concert, but this is not a usual result of uniting elements old in mechanics. This case is wanting in any unusual or surprising consequences from the unification of the elements here concerned, and there is nothing to indicate that the lower courts scrutinized the claims in the light of this rather severe test.⁴⁷

In *A & P* the assembly of mechanical parts and the manner in which they would function were simple and obvious, but in *Graver* it was not apparent what the mixture of chemicals would do. The *Graver* mixture did some rather surprising things, thereby leading to an inference of unobviousness. Does "obviousness" as a criterion of invention mean this: That if a court can readily understand an invention by inspecting it and can see clearly how it is put together and how it must operate, then the invention is obvious and unpatentable, but if the invention mystifies the court, then it is unobvious and patentable? A simple poem written in English is "obvious" to an English-speaking reader, whereas a poem written in Sanskrit is not. Does this mean that the Sanskrit poem is of better quality? The law as it stood prior to *A & P* was that the "obviousness" of an invention means obviousness to one skilled in the art. Perhaps the chemical composition of *Graver* may have been obvious to those skilled in the art, but it certainly was not obvious to technical laymen such as judges, whereas the simple mechanical combination of *A & P* might not have been obvious to those skilled in the art in the sense that they were keenly aware of the problem but did not have the wit to solve it until the patented invention came

along. There were indicia to this effect in *A & P*, namely a longfelt need for a better checkout stand and the fact that the solution to this problem was a long time coming.

IV. THE PATENT ACT OF 1952 — THE PATENT CODE

The patent bar and the lower courts lived and struggled with *A & P* for a good many years without further enlightenment from the Supreme Court. In 1952, not long after *A & P*, the entire body of statutory patent law was revised and became the Patent Act of 1952,⁴⁸ referred to herein as the Patent Code. The Patent Code did more than tidy up preexisting statutory law in that it codified a number of important judge-made rules of law. The most important codification is the following:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, 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. Patentability shall not be negated by the manner in which the invention was made.⁴⁹

From 1953 through 1965 there were no Supreme Court decisions dealing with the standard of patentable invention or interpreting the above quoted section of the Patent Code. However, some of the lower courts were of the view that section 103 of the Patent Code had relaxed the severe standard of *A & P*.⁵⁰

V. THE RECENT SUPREME COURT DECISIONS

There was great anticipation, and some trepidation, when at last the Supreme Court, in 1965, granted certiorari in several patent cases where the standard of invention issue was squarely presented. Certiorari was granted in *Graham v. John Deere Co.*⁵¹ which was consolidated with *Calmar, Inc. v. Cook Chem. Co.* and *Colgate-Palmolive Co. v.*

48. 35 U.S.C. (1954).

49. 35 U.S.C. § 103 (1954).

50. In *Reiner v. I. Leon Co.*, 285 F.2d 501 (2d Cir. 1960), Judge Learned Hand stated: "All the constituents may be old, if their new concourse would not 'have been obvious at the time the invention was made to a person having ordinary skill in the art' (§ 103, Title 35). . . . We still cannot escape the conclusion . . . that Congress deliberately meant to restore the old definition, and to raise it from a judicial gloss to a statutory command." 503 F.2d 1033 (2d Cir. 1975). See also *Dyson v. Bausch & Lomb Optical Co.*, 224 F.2d 536, 538 (2d Cir. 1955).

51. *Cert. granted*, 379 U.S. 956 (1965).

*Cook Chem. Co.*⁵² The *Graham* case involved a patent on a plow and the *Cook* cases concerned a single patent on an insecticide dispenser. At about the same time certiorari was granted in *United States v. Adams*⁵³ which revolved around a patent on an electrical battery. Like *Graver, Adams* was a chemical case (in which electrical factors were also present). Like *A & P, Graham* and the *Cook* cases concerned rather simple, albeit not as simple as in *A & P*, mechanical inventions.⁵⁴

The petition of Mr. Abe Fortas, as principal counsel for the petitioner in the *Cook* cases, posed the question whether the Supreme Court should end its practice of fourteen years, since *A & P*, of leaving to the courts of appeals the final determination of the requisite level of invention, and should intervene and return the lower courts to the proper path by requiring a higher level of invention.

Professor Goldstein, in his amicus brief in *Graham*,⁵⁵ described his interest, in substance, as follows: The courts, led by the Supreme Court, have wrought great havoc among patents. For example the Court of Appeals for the Eighth Circuit has held twenty-two consecutive patents invalid and the Third Circuit has held thirty-two out of thirty-three patents invalid with only two dissents. The situation was as it had been described by Mr. Justice Jackson,⁵⁶ and it bade well to accomplish a judicial repeal of the patent system. Professor Goldstein viewed the patent system as being worth saving, and he beseeched the Supreme Court to specifically uphold 35 U.S.C. § 103.

The Supreme Court held both the *Graham* (plow) and *Cook* (insecticide dispenser) patents to be invalid for lack of patentable invention.⁵⁷ In so doing the Court affirmed the court of appeals in *Graham* and reversed in the *Cook* cases. Mr. Justice Clark wrote the opinion, and there was no dissent. Mr. Justice Stewart did not participate in the *Cook* cases. The opinion reviewed the background of the

52. *Cert. granted*, 380 U.S. 949 (1965).

53. *Cert. granted*, 380 U.S. 949 (1965).

54. Prestigious counsel were involved in these cases. In the *Cook* cases, Mr. Abe Fortas was principal counsel for the petitioner. Mr. Fortas was on the Supreme Court bench at the time that all of these cases were argued, and of course did not participate in them. The firm of Arnold (the same Arnold referred to above in connection with *Special Equip. Co. v. Coe*), Fortas & Porter and the eminent patent law firm of Watson (formerly Commissioner of Patents), Cole, Grindle & Watson were of counsel.

55. Professor Goldstein disclaimed any interest in the case, pecuniary or otherwise, and did not claim any great importance for the patent.

By the time the *Graham* and *Cook* cases were argued, amicus curiae briefs had been filed by Professor E. Ernest Goldstein, Professor of Law at the University of Texas (Dean Page Keeton being of counsel), the Patent, Trademark and Copyright Section of the State Bar of Texas, the American Bar Association, the Illinois State Bar Association, the New York Patent Law Association, and the National

56. See p. 105 *supra*.

57. *Graham v. John Deere Co.*, 383 U.S. 1, 25-26, 37 (1966).

American patent system and the Patent Code and applied the law separately to the *Graham* and *Cook* cases. The Court held that the Patent Code codified the case law in force at that time, including the *A & P* case and the severe standard of patentable invention in mechanical cases. The Court harked back to *Hotchkiss v. Greenwood*,⁵⁸ and its requirement of "more ingenuity and skill than that possessed by an ordinary mechanic acquainted with the business."⁵⁹ Proceeding from there, the Court reasoned that on the state of the art as shown by the record, neither the *Graham* patent (plow) nor the *Cook* patent (insecticide dispenser) displayed anything more than the ordinary ingenuity or skill of the art, and the patents were accordingly invalid.

It is my opinion that *Graham*⁶⁰ leaves the standard of patentable invention about where it was — high but not impossible. The application of the standard now depends, as it always has, upon a court's conclusion, influenced more or less, or not at all, by subcriteria such as those previously discussed,⁶¹ as to whether the novelty of the invention is something significant and surprising. The quality of being "surprising" or "obvious" should, under statutory command,⁶² be determined in the context of those skilled in the art or business; it is inevitable, however, that the subjective element — surprising or unobvious to the judge — is an important factor.

It is worthy of note that in *A & P*, the Court's opinion, per Mr. Justice Jackson, did not mention the constitutional basis of patents,⁶³ while the concurring opinion of Mr. Justice Douglas, joined by Mr. Justice Black, was based upon the Constitution and displayed a rather severe attitude towards patents.⁶⁴ No such hostility was indicated in *Graham*, nor did Justices Douglas and Black do anything more than concur in Justice Clark's opinion which was the only opinion in the case. However, the views expressed by Justices Douglas and Black in *A & P* do appear to have prevailed in *Graham* to the extent that the *Graham* opinion was expressly predicated on the Constitution. The Court explained:

At the outset it must be remembered that the federal patent power stems from a specific constitutional provision which authorizes the Congress "To promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive

58. 52 U.S. (11 How.) 261 (1850).

59. 383 U.S. at 11.

60. It has become customary to refer to the *Graham* decision and the *Cook* cases simply as *Graham*. That custom will be followed in the remainder of this article.

61. See pp. 102-03 *supra*.

62. See 35 U.S.C. § 103 (1954).

63. See *Graham v. I.C. Case*, 353 U.S. 471 (1957).

64. See *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 154-56 (1950) (concurring opinion).

Right to their . . . Discoveries." . . . The clause is both a grant of power and a limitation. This qualified authority, unlike the power often exercised in the sixteenth and seventeenth centuries by the English Crown, is limited to the promotion of advances in the "useful arts." It was written against the backdrop of the practices — eventually curtailed by the Statute of Monopolies — of the Crown in granting monopolies to court favorites in goods or businesses which had long before been enjoyed by the public. . . . The Congress in the exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. 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."

Within 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. This is but a corollary to the grant to Congress of any Article I power. . . . Within the scope established by the Constitution, Congress may set out conditions and tests for patentability. . . . It is the duty of the Commissioner of Patents and of the courts in the administration of the patent system to give effect to the constitutional standard by appropriate application, in each case, of the statutory scheme of the Congress.⁶⁵

Another interesting point of comparison between *A & P* and *Graham* is that in Justice Douglas' concurring opinion in *A & P* the Patent Office was taken severely to task for the looseness with which it applied the standard of invention. Mr. Justice Douglas stated:

The attempts through the years to get a broader, looser conception of patents than the Constitution contemplates have been persistent. The Patent Office, like most administrative agencies, has looked with favor on the opportunity which the exercise of discretion affords to expand its own jurisdiction. And so it has placed a host of gadgets under the armour of patents — gadgets that obviously have had no place in the constitutional scheme of advancing scientific knowledge. A few that have reached this Court show the pressure to extend monopoly to the simplest of devices. . . .⁶⁶

Thereafter, Justice Douglas' opinion listed twenty alleged examples of the passion of the Patent Office to grant patents on gadgets, the most recent being *Dunham v. Dennison Mfg. Co.*,⁶⁷ decided in 1894, certainly not a case of recent vintage even as of 1950 when the *A & P* case was decided. The same propensity of the Patent Office to grant patents rather freely was commented upon, but in a more kindly fashion, in *Graham*:

We have observed a notorious difference between the standards applied by the Patent Office and by the courts. While many reasons can be adduced to explain the discrepancy, one may well be the free rein often exercised by Examiners in their use of the concept of "invention." In this connection we note that the Patent Office is confronted with a most difficult task. Almost 100,000 applications for patents are filed each year. Of these, about 50,000 are granted and the backlog now runs well over 200,000. . . . This is itself a compelling reason for the Commissioner to strictly adhere to the 1952 Act as interpreted here. This would, we believe, not only expedite disposition but bring about a closer concurrence between administrative and judicial precedent.⁶⁸

It is my observation, based upon long experience in practice before the Patent Office, that this venerable agency does not apply a uniform standard of invention. I feel that there is considerable merit to Justice Clark's observation that the Examiners, of whom there are hundreds, ranging from freshmen to veterans, have too free a rein in exercising their judgment as to "invention." In certain classes of cases, such as chemical cases, it has been my observation that the Patent Office standard is quite high, but that in some other types of cases the standards are altogether too low. In what might be called "Simple Simon" fields of endeavor, the standards are remarkably low. This situation is a discredit to the patent system because each patent is issued by the same agency, under the same law, with the same seal, and is representative of the patent system.

Turning now to the *Adams*⁶⁹ case, which was decided the same day as the *Graham* and *Cook* cases, the Court held the patent valid. *Adams* presents, so to speak, the other side of the figurative coin in relation to *Graham*. The plaintiffs in *Adams* were a group of individuals, including the inventor, Burt Adams, and others, who presumably were co-owners of the patent. The defendant was the biggest of them all, the United States of America. Suit was brought in the

67. 154 U.S. 103 (1894).

68. *United States v. Adams*, 383 U.S. 39 (1966). Mr. Justice Clark also wrote the opinion in *Adams*. Mr. Justice White dissented without an opinion.

On the crucial question — was this combination of elements obvious or unobvious— the Supreme Court opinion held (1) that there were technical reasons for supposing that this combination would not work, because the Adams battery continued to operate even when there was an open circuit, something which had previously been considered impractical and (2) water-activated batteries had been successful before Adams only when used with electrolytes that were incompatible with magnesium.⁷⁴ The clincher in the opinion is as follows :

Nor are these [the factors discussed above] the only factors bearing on the question of obviousness. We have seen that at the time Adams perfected his invention noted experts expressed disbelief in it. Several of the same experts subsequently recognized the significance of the Adams invention, some even patenting improvements on the same system.⁷⁵

VI. CONCLUSION

What conclusion can be drawn from *Hotchkiss, Graver, A & P, Graham, Adams* and section 103 of the Patent Code? I would be prudent perhaps, but delinquent in my duty, if I were to evade a conclusion. Being more foolhardy perhaps than I should, I will essay a conclusion.

At least since *Hotchkiss*, it has been the law that not every advance in science or the useful arts is worthy of a patent ; some ingenuity, something more clever than the work of the routineer, is and always has been required. Give a problem to a man having average skill in some art or science, the problem being within his area of skill. If that man, seeing and understanding the problem, can without difficulty see the probable solution, which he then accomplishes, then there is no patentable invention. If, however, the problem defies solution by such men of skill until some clever fellow comes along with an answer, then there is a patentable invention. Or if practical solutions are apparent but one man reaches a better solution in an unorthodox way, there is a patentable invention.

This has been the rule at least since *Hotchkiss*, but the manner in which the rule has been applied has changed. At the time of *Hotchkiss*, and through the early part of the present century, more weight was given to the factor of commercial success, or the courts were more inclined to construe a given set of facts as indicating satisfaction of a long felt need rather than as mere commercial success or skill of the art. Compare, for example, *The Barbed Wire Patent*⁷⁶

decided in 1892, with *Altoona*⁷⁷ decided in 1935. In the 1892 case the finishing touch applied to a succession of improvements was deemed to amount to something more than the expected skill of the art, but in the 1935 case the success of the patented invention was attributed by the Supreme Court (in disagreement with the lower court) to the advent of related equipment.

It is my belief that the rule of *Hotchkiss* has always been in force. This rule has never been disavowed by the Supreme Court nor by any but an occasional embittered lower court. It was the feeling of many during the period commencing with the advent of the Patent Code on January 6, 1953 and ending with the *Graham* and *Adams* cases that section 103 of the Patent Code codified this rule. That view has been confirmed by *Graham* and *Adams*. The change that has occurred — and there has been a great change — has been a change in emphasis or bias. The world today is very different from the world of the 1920's and earlier, as witness the changed attitudes of courts even without benefit of legislation, toward such matters as the requirement of privity in connection with warranties of merchandise, changed attitudes regarding employer-employee and master-servant relationships, racial segregation, M'Naghton's rule, etc. The severe attitude of the courts today with respect to patents was born in and of the depression of the 1930's and it is still with us. There is an analogy between the evil and the good of the patent system and the fate of Caesar according to Mark Anthony. The most flagrant abuses of the patent system were killed and buried with the *Hartford-Empire* case⁷⁸ — today no lawyer in his right mind would counsel any businessman to do the things that were done in the *Hartford* conspiracy. Yet the evil of that conspiracy lives on in the memories of many.⁷⁹

77. See p. 103 *supra*.

78. See p. 104 *supra*.

79. This conclusion would be incomplete without a brief comment on Senate Bill 1042 and House of Representatives Bill 5924, now pending in the 90th Congress. The two bills are the product of a Presidential Commission and are sponsored by the President. They have encountered an uncommon amount of criticism from the patent bar, largely on highly technical grounds, which comes as no surprise to those who are aware of the strain of pedantry in that group of engineer-scientist lawyers. But these bills, whether enacted or not, should have no effect on the burden of this article, because both bills carry forward present section 103 intact.