

# PATENT LAW

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## PREFACE

Law is often defined as the rules by which courts will decide controversies. If this be correct, the art of practice is in forecasting how courts will decide particular cases. Decisions are no longer, even in theory, mere repetitions of precedent, nor even purely logical development of precedent to fit new circumstance. The practical effect of one decision or another has openly, or, more often, covertly, drawn many a judge from the straight path of abstract logic. Primarily, of course, a practitioner must be familiar with precedent and must be trained so to analyze it as to perceive to the uttermost thread that web of ever fining principles which constitute the rules of law. But beyond this, in order to prognosticate the future pattern which his threads will weave, he must observe, in addition to the pattern of the past, the extraneous factors which influence judicial decisions; he must know to what extent declared principles have been deduced through logic and how far merely supported by it. He must comprehend the ideas of policy and the pragmatic reasoning which permeate all the modern law. It is partly because it can at least suggest this background that a proper text-book has an informational value greater than that of either digest or encyclopedia. But more particularly does the text book serve a special purpose in so showing the derivation of a rule, in expounding and explaining it in relation to other rules, as to indicate its probable direction and application. I have endeavored to do this so far as possible without getting into either speculation or philosophic discursiveness, but, partly in consequence thereof, some propositions of law are not so categorically stated as one might like. Since law is what will be developed from what has been determined, one can be quite positive and define only as to the past and, in regard to some matters, even that can not be formulated into a rule. In occasional instances I have not hesitated to state what I believe ought to be the rule, where the

actual decisions leave it uncertain, or where there are not decisions upon the matter at all, but in no case have I knowingly done so without pointing out the lack of actual authority.

The comparatively small size of the book is not due to any conscious superficiality of treatment nor omission of pertinent subject matter. It purports to cover only the substantive law of patents, their nature, validity, effect and their characteristics as property. Matters of procedure in securing patents or suing on them, and the difficult subject of the amount of compensation recoverable by suit, would require a volume for themselves and are not included herein. But of the matter which is included, it has been my desire to present every issue which has come before the courts. Of course I have in no degree cited all the cases, but to the extent that I have accomplished my intention, some part of the discussion will be found applicable to every case. I have sought brevity in such a coordination of propositions and so carefully worked out a sequence of topics as would eliminate duplication of discussion. But for this reason some propositions will not be found under customary headings and reference to the index will be consequently more necessary than is usual.

Although the book is as complete in its field and as thorough as I could make it, it is written primarily for others than patent practitioners. They, presumably, being already trained specialists in this subject, have no longer any need for discussion and exposition of principles. The digests, showing particular applications of the various rules, should be their tools. This book is intended more particularly for the use of inventors, business men, engineers, lawyers in general practice and all that class of laymen who from time to time want information concerning their rights in respect to inventions and patents.

JOHN BARKER WAITE.

Ann Arbor, Michigan.

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## CHAPTER I

### ORIGIN OF PATENT RIGHTS

THE COMMON LAW does not recognize any right of ownership in an invention. If one has conceived a new means of accomplishing a given result his only right to the exclusive use and enjoyment of that new means is by virtue of statutes; he has no such right in the "unwritten law." So long as an inventor can practically keep his idea a secret it remains his property, to be exclusively enjoyed by him, because the law does not compel him to reveal it. Furthermore, if an inventor has revealed his new idea of means to some other person under an express or implied pledge of secrecy, or through a confidential relationship, the law (equity) will enjoin that person under pain of punishment from breaking his pledge of secrecy.<sup>1</sup> If an inventor embodies his new idea in tangible form, that corporeal embodiment itself is his property just as would be any other tangible thing that he might make, or have made, for himself. The mistaken, but not infrequent, assumption that the corporeal embodiment of the new idea is itself the invention, has given rise to occasional statement that the Common Law, because it recognized the maker's ownership of the corporeal chattel, recognized ownership in an invention. The distinction between the "invention," which is an intangible concept, and the wheels, levers, substances and other tangible things by which the idea is given visible form must be kept clearly in mind. Invention is a mental operation, not a physical act, and an invention is an idea, expressed in some form, visible or audible, and not the tangible thing in which it may happen to be demonstrated. Of this, more will be said later.

The idea itself, so soon as it becomes known to others, ceases, so far as the unwritten law is concerned, to be the inventor's property. It is at once open to the use and enjoyment

<sup>1</sup> O. & W. Thum Co. v. Tloczynski, 114 Mich. 149.

of any one. As one judge expressed it, "So long as the originator of the naked idea keeps it to himself . . . it is his exclusive property, but it ceases to be his own when he permits it to pass from him. Ideas of this sort, in their relation to property may be likened to the interest which a person may obtain in bees and birds, and fish in running streams, which are conspicuous instances of (animals) *ferac naturae*. If the claimant keeps them on his own premises they become his qualified property, and absolutely his so long as they do not escape. But if he permits them to go he can not follow them."<sup>2</sup>

The whole matter of ownership of inventions, therefore, depends upon written law; and the statutes of the country are the beginning and the end of an inventor's exclusive right to the use and enjoyment of his invention.

ROYAL GRANTS. The right of sole enjoyment of an invention originated, in England, from grants made by the sovereign to particular inventors. These grants were evidenced by open letters, which were technically called letters patent or merely patents, and by a sort of metonymy the rights themselves thereby evidenced have come to be commonly known as pat-

<sup>2</sup> Bristol v. E. L. A. Society, 52 Hun. 161, 5 N. Y. S. 131; To the same effect are, Stein v. Morris, Va. (1917), 91 S. E. 177; Wilson v. Rousseau, 4 How. 646, 673; Gayler v. Wilder, 10 How. 477; Morton v. N. Y. Eye Infirmary, 5 Blatch. 116; Dudley v. Mayhew, 3 Comstock (N. Y.) 9; Comstock v. White, 18 How. Prac. (N. Y.) 421.

As a matter of fact, the idea of "possession" has been so fundamental in the English concept of "property" that the Common Law has been loath to recognize property rights in anything that is not capable of exclusive physical possession. But while it never recognized an exclusive right to an invention, it has conceded property rights in some intangible ideas. An interesting discussion of an author's exclusive right to the subject matter of his compositions as distinct from his tangible manuscript, is found in the early case of *Millar v. Taylor*, 4 Burr, 2303, esp. 2336 ff. "The present claim is founded upon the *original* right to this work, as being the *mental labour* of the author; and that the *effect* and *produce* of the labour is *his*. It is a *personal incorporeal* property, saleable and *profitable*; it has *indicia certa*: for though the sentiments and doctrine may be called *ideal*, yet when the same are communicated to the sight and understanding of every man, by the medium of *printing*, the work becomes a distinguishable subject of property, and *not totally* destitute of *corporeal* properties."



ents. Many monopolies and exclusive rights were granted by royal letters patent other than those relating to the use and enjoyment of an invention, but it is with the latter only that we are here concerned.<sup>3</sup>

The practice of the sovereign in granting monopolies was always opposed by the Common Law, on the ground that they were contrary to natural right.<sup>4</sup> The courts could not prevent the sovereign from issuing such grants, but they could punish the procurement of them, and they could refuse to enforce them.<sup>5</sup> They did so refuse in cases of monopolies which they did not believe to be for the good of the realm.

Nevertheless the grants became so numerous and so obnoxious that in 1601 an attempt was made by Parliament to abolish monopolies entirely. A promise by the Queen to lessen the burden of them prevented action at this time, but during the reign of James I. in 1623, a statute was enacted, entitled the statute against Monopolies.<sup>6</sup> This act provided, "that all monopolies, and all commissions, grants, licences, charters and letters patents heretofore made or granted, or hereafter to be made or granted to any person or persons, bodies politick or corporate whatsoever, of or for the sole buying, selling, making, working or using of anything within this realm, . . . are altogether contrary to the laws of this realm, and so are and shall be utterly void and of none effect, and in nowise to be put in use or execution." The act contained, however, an express exception from its operation of those letters patent and grants of privilege, for a limited term, which had been, or should be, given for the "sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures, which others at the time of making such letters patents and grants shall not use, so as also they be not contrary to the law, nor mischievous to the

<sup>3</sup> The first letters patent for an invention are said to have been given by Edward III to the inventor of a "philosopher's stone."

<sup>4</sup> Coke, 3rd institute, Cap. 85.

<sup>5</sup> *Darcy v. Allin*, Noy. 173; 74 Eng. Rep. 1131; *The Clothworkers of Ipswich Case*, Godbolt No. 351, p. 252. 78 Eng. Rep. 147.

<sup>6</sup> 21 Jac. I. Ch. 3. The date is 1623 or 1624 according to the time at which his reign is assumed to have commenced.

state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient. . . ."

This negative provision, excepting monopoly patents to inventors from the ban of the statute, has generally been thought of as the original foundation of patent law. It is quite clear, however, that royal patents to inventors would not have been invalid, under the Common Law, before the statute, but would have been enforced, as being actually for the good of the realm, and that the exception in the statute was therefore merely declaratory of the Common Law. Lord Coke in his Institutes says specifically that this proviso made such patents no better than they would have been before the act, but only excepted them from the express prohibition of the act.<sup>7</sup> He further suggests as the reason they are good at all, that they benefit the realm by offering a reward for the production of new manufactures.

This is the position consistently taken by all who advocate the propriety of granting monopolies to inventors. The restriction of the natural right of the public to make use of all knowledge revealed to it, is justified on the theory that the grant of a sole right to inventors encourages and instigates the production of knowledge, by stimulating search for it.<sup>8</sup> It is not within the scope of this work to discuss the economic propriety of granting patent monopolies; it is sufficient to say that legal validity of the grant is predicated upon the assumption that it is for the good of the public.<sup>9</sup>

<sup>7</sup> No. 3, Cap. 85.

<sup>8</sup> "It (the patent statute) was passed for the purpose of encouraging useful invention and promoting new and useful improvements by the protection and stimulation thereby given to inventive genius, and was intended to secure to the public, after the lapse of the exclusive privileges granted, the benefit of such inventions and improvements." *Bauer v. O'Donnell*, 229 U. S. 1, 10.

<sup>9</sup> A discussion of the justification of the patent laws will be found in *Robinson on Patents*, vol. 1, p. 54 ff; *Hopkins on Patents*, introduction to Vol. 1; Articles by Fredk. P. Fish, *Sci. Am.*, Sept. 27 and Oct. 4, 1913. An unusual and excellent discussion of the justification of the monopoly given by the patent law is to be found in "Inventors and Money-makers" by F. W. Taussig. His thesis appears to be, that invention flows natur-

This right of the sovereign, as recognized by the Common Law and the Statute of Monopolies, to create by express grant the sole right to enjoy the fruits of invention, became a prerogative of the state governments of this country,<sup>10</sup> and it is possible that they still have power to grant patents for inventions within their own jurisdictions.

The right to issue monopoly patents to inventors is given to the federal government by the Constitution.<sup>11</sup> It authorizes Congress "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." As nothing further is said in the Constitution upon the subject, it would appear that Congress is unhampered as to the character of the right it shall grant, except by the other provisions of the Constitution and, possibly, by the rules of the Common Law.<sup>12</sup> The grants might be made by special act concerning particular inventions, if Congress so desired, instead of by the general laws under which they are in fact secured.<sup>13</sup> The law may also be retrospective as well as prospective for "the power of Congress to legislate upon the subject of patents is plenary, by the terms of the Constitution, and as there are no restraints on its exercise, there can be no limitation of their right to modify them at their pleasure, so that they do not take away the rights of property in existing patents."<sup>14</sup>

THE PATENT STATUTES. The first general act providing for the issuance of patents to inventors was that of April 10, 1790.<sup>15</sup> This provided generally for the grant, by the Secretary, in its fullest extent, from the primitive instinct for contrivance, but that the monopoly is necessary to assure the *commercial* development and *practical* perfection of inventions.

<sup>10</sup> Act of 1793, § 7; *Livingston & Fulton v. Van Ingen*, 9 Johns (N. Y.) 507.

<sup>11</sup> Art. I, § 8.

<sup>12</sup> *Blanchard v. Sprague*, 3 Sumner 535.

<sup>13</sup> *Bloomer v. McQuewan*, 14 How. 539; *Evans v. Eaton*, 3 Wheat. 454; *Graham v. Johnston*, 21 Fed. 40.

<sup>14</sup> *McClurg v. Kingsland*, 1 How. 202.

<sup>15</sup> The sequence of the various patent acts is set out in *Root v. Railway Co.*, 105 U. S. 189.

tary of State, Secretary of War and Attorney General, or any two of them, of a patent, to endure for 14 years, to any inventor who came within the terms of the act. It provided for a particular mode in which application for the patent should be made and proceedings and conditions in accord with which the patent should be issued. By later acts the duty of issuing the patents was imposed upon the Secretary of State,<sup>16</sup> and eventually a sub-department known as the Patent Office was instituted to perform these duties, and the office of Commissioner of Patents was created.<sup>17</sup> In 1870-4 the patent laws were revised and re-enacted in the form which, with some minor changes, is still in effect.<sup>18</sup>

This act provides that <sup>19</sup> "Any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor."

"Every patent shall contain a short title or description of the invention or discovery, correctly indicating its nature and design, and a grant to the patentee, his heirs or assigns, for the term of seventeen years, of the exclusive right to make, use, and vend the invention or discovery throughout the United States and the Territories thereof, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof."

<sup>16</sup> Act of 1793.

<sup>17</sup> Act of 1836.

<sup>18</sup> The Commissioner of Patents will furnish, on application, without charge copies of the Patent Laws as they now stand.

<sup>19</sup> § 4886 and 4884.

INTERPRETATION OF THE STATUTES. The greatest bulk of patent litigation has arisen out of controversy as to whether some particular alleged invention was entitled to protection under the terms of this statute and, if so, how far it should be protected.

Our initial investigation, therefore, concerns the degree of strictness with which the terms of the statute shall be construed and unexpressed terms implied; that is to say, whether the construction shall favor the alleged inventor, or the public, whose natural right a valid patent would restrict. Many courts have sought for the answer to this through an examination of the fundamental justification for granting any exclusive right of enjoyment to an inventor. Out of this have arisen three different theories of the justifying purpose of the patent laws. These are best denoted by the expression generally used in reference to them, viz.: 1. The patent is a monopoly. 2. It is a reward. 3. It is a contract between the state and the inventor.

The theory that a patent is a monopoly and should therefore be interpreted most strictly against a patentee and in favor of the public, proceeds upon the assumption that there is in fact no justification for the patent laws; that they are not of economic advantage to the state. This theory is not supported in judicial decision, although there is remarkable conflict of expression as to whether or not a patent right is in name a monopoly. Courts have said with equal positiveness that it is a monopoly<sup>20</sup> and that it is not a monopoly. Indeed the same judge has said in one case,<sup>21</sup> "This (patent) law gives a monopoly, but not in an odious sense," and in another case<sup>22</sup> "Patentees are not monopolists . . . the (patent) law repudiates a monopoly." This conflict is due not to disagreement as to the character of the patent right but to difference in understanding of the word monopoly. In its simplest meaning, monopoly is defined, from its root words *μόνος*, sole, and

<sup>20</sup> "A true and absolute monopoly," *Heaton-Peninsular, etc. Co. v. Eureka Specialty Co.*, 77 Fed. 288.

<sup>21</sup> *Brooks v. Jenkins*, 3 McLean 432 (1844).

<sup>22</sup> *Allen v. Hunter*, 6 McLean 303 (1855).

πωλεῖν, barter, sale, as "an exclusive privilege to carry on a traffic." It can not be denied that, in this sense, a patent right is a monopoly since it gives to the patentee an exclusive right to make, use and vend the invention, and it is in this sense that courts speak of it as being a monopoly. But in the usage of the law, as well as of common parlance, the word has acquired a certain odium because of the type of privileges with which it was customarily connected. Coke says<sup>23</sup> "a monopoly is an institution or allowance by the king by his grant, commission, or otherwise, to any person . . . for the sole buying, selling, making, working, or using of anything whereby any person or persons . . . are sought to be restrained of any freedom or liberty that they had before, or hindered in their lawful trade." Blackstone<sup>24</sup> defined it as a grant "whereby the subject in general is restrained from that liberty of manufacturing or trading which he had before." It is to this last phrase, this idea of deprivation of what the public already actually had, that the hatred of monopolies is due. The right of a patentee, however, is in no way a restraint upon the public in anything which they had before; it simply precludes public use, for a limited time, of that which has just been revealed to the public. The courts are thoroughly consistent in holding that a patent right is not a monopoly as defined by Coke or Blackstone. The general opinion is well expressed in *Allen v. Hunter*,<sup>25</sup> the court saying, "Patentees are not monopolists. This objection is often made, and it has its effect on society. The imputation is unjust and impolitic. A monopolist is one who, by the exercise of the sovereign power, takes from the public that which belongs to it, and gives to the grantee and his assigns an exclusive use. On this ground monopolies are justly odious. It enables a favored individual to tax the community for his exclusive benefit, for the use of that to which every other person in the community, abstractly, has an equal right with himself.

"Under the patent law this can never be done. No exclusive

<sup>23</sup> 3d Institute Cap. 85.

<sup>24</sup> Commentaries Vol. 4-159.

<sup>25</sup> 6 McLean 303, 305.

right can be granted for any thing which the patentee has not invented or discovered. If he claim any thing which was before known, his patent is void. So that the law repudiates a monopoly. The right of the patentee entirely rests on his invention or discovery of that which is useful, and which was not known before. And the law gives him the exclusive use of the thing invented or discovered, for a few years, as a compensation for 'his ingenuity, labor and expense in producing it.' This, then, in no sense partakes of the character of monopoly.

"It then appears that patentees, so far from being monopolists hanging as dead weights upon the community, are the benefactors of their country."<sup>26</sup>

The patent is therefore treated either as a reward given to the inventor for his success in adding to the stock of public knowledge,<sup>27</sup> or as a contract between the inventor and the state, whereby the latter assures him the exclusive right to his invention for a term of years, in consideration of his revelation of it to the public, which thereby acquires the possibility, through knowledge, of using it after the time has expired.<sup>28</sup>

The courts are not at all definite, however, in their choice of

<sup>26</sup> *Bloomer v. Stolle*, 5 McLean 158; *Kedall v. Winsor*, 21 How. 322, 328.

<sup>27</sup> Letters patent are not to be regarded as monopolies, created by the executive authority at the expense and to the prejudice of all the community except the persons therein named as patentees, but as public franchises granted to the inventors of new and useful improvements for the purpose of securing to them, as such inventors, for the limited term therein mentioned, the exclusive right and liberty to make and use and vend to others to be used their own inventions, as tending to promote the progress of science and the useful arts, and as matter of compensation to the inventors for their labor, toil, and expense in making the inventions, and reducing the same to practice for the public benefit . . ."

<sup>28</sup> *DeFerranti v. Lyndmark*, 3 D. C. App. 417. "While a patent is a contract between the government and the patentee . . ."; *Ransom v. Mayor of New York*, 1 Fisher Pat. Cas. 252, 259, "when the patent is granted, it becomes, to a certain extent, a contract upon the part of the government with the party named in the patent, that they will, through their Courts, and in the ordinary course of the administration of justice, protect him in the exercise of the exclusive privilege which his patent gives to him. . . ."

terminology between "reward" and "contract." Thus in *Grant v. Raymond*,<sup>29</sup> one reads, "It (the patent) is the reward stipulated for the advantages derived by the public from the exertions of the individual, and is intended as a stimulus to those exertions." On the following page the court says, "The communication of the discovery to the public has been made in pursuance of law, with the intent to exercise a privilege which is the consideration paid by the public for the future use of the machine." Theoretically there should be a different interpretation and construction, if the intent of the statute is to confer a mere reward, than there would be if it conferred the patent right as the consideration in a contract. The one is a mere gift from the public, to be construed in the giver's favor, the other is an inducement for which a *quid pro quo* is received, and to be construed like all fair contracts. Practically it is impossible to say in just what respect the courts do view it, but a full study of the cases shows clearly the broad proposition that the statute and the proceedings under it will not be construed strictly as against either party, but with so absolute impartiality as possible, so as to render the most nearly equal measure of justice to both parties.<sup>30</sup> This is quite

<sup>29</sup> 6 Peters 217, 241.

<sup>30</sup> The patent "is the reward stipulated for the advantages derived by the public for the exertions of the individual, and is intended as a stimulus to those exertions. The laws which are passed to give effect to this purpose ought, we think, to be construed in the spirit in which they have been made; and to execute the contract fairly on the part of the United States, where the full benefit has been actually received; if this can be done without transcending the intention of the statute, or countenancing acts which are fraudulent, or may prove mischievous. The public yields nothing which it has not agreed to yield; it receives all which it has contracted to receive." *Grant v. Raymond*, 6 Peters 217. *Ames v. Howard*, 1 Sumner 482; *Brooks v. Fiske*, 15 How. 211, 223; *Tannage Patent Co. v. Zahn*; 66 Fed. 986, 988; *Henry v. Dick Co.*, 224 U. S. 1, 26; *Bauer v. O'Donnell*, 229 U. S. 1, 10; *O. H. Jewell Filter Co. v. Jackson*, 140 Fed. 340, 343, "A patent is, after all, nothing but a contract by which the government secures to the patentee the exclusive right to vend and use his invention for a few years, in consideration of the fact that he has perfected and described it and has granted its use to the public for ever after. The rules for the construction of contracts apply with equal force to the interpretation of patents."



in accord with the expressed idea that the patent is *both* a reward for the stimulation of invention and a contractual consideration for the revelation of the invention to the public. The subject of construction comes up in so many ways and is so confused with interpretation as between the patentee and an individual not representative of the public, that nothing more than this can be said as a general proposition.

## CHAPTER II

### WHAT MAY BE PATENTED

#### § I. SOURCE

We come now to a discussion of the circumstances under which one is entitled to a patent. The statute reads<sup>31</sup> "Any person who has invented or discovered any new and useful art . . . may . . . obtain a patent therefor." When, then, has a person "invented or discovered" something. This may be considered, first, in connection with the *source* from which the invention or discovery is obtained, disregarding for the present the character of the result.

It may be said broadly that *nothing is invented or discovered, within the meaning of the statute, which has not found its source in the mind of the alleged inventor.* It must be the result of his mental operation upon external stimuli, and not a mere representation or recreation of those stimuli in their original forms.

IMPORTATION. It is probable that there has always been a difference in the meaning of the words "inventor" and "importer," but the distinction was formerly one in name only. The two stood on the same plane of merit and were considered together so often and with so little indication of real differentiation that there is at least a little confusion in precisely allocating their respective meaning. By the Common Law and also by the exception in the Statute of Monopolies, the *bringing into the realm* of a new trade or device was considered as meritorious as was the *evolution from the mind* of a new idea for a trade or device. This was, of course, perfectly logical in the days when travel and intercourse were difficult and rare, and knowledge percolated from one country to another but slowly. The knowledge of one nation was not then, as it has since come to be, equally the knowledge of any other

<sup>31</sup> § 4886.

which chooses to note it. One who imported into England knowledge of a trade or a substance from abroad did so, usually, at considerable expense and risk to himself. Consequently we find royal patents granting monopolies of such importations consistently respected and enforced by the courts. Furthermore it is evident from the cases that these importations were sometimes called "inventions" equally with the productions of one's own mind, and were generally not very clearly distinguished therefrom.<sup>32</sup>

The proper application of the name "inventor" came into question so late as 1878 in an English case<sup>33</sup> and it was decided that it did not include a mere "importer." The court sustained the proposition that an importer might be treated legally as an inventor, but maintained that he was not nominally an inventor.<sup>34</sup>

<sup>32</sup> Darcy v. Allin, No. 173, 74 Eng. Rep. 13: The Clothworkers of Ipswich Case, Godbolt p. 252, No. 351, 78 Eng. Rep. 147, "But if a man hath brought in a new invention and a new trade within the kingdom, in peril of his life, and consumption of his estate or stock, etc., or if a man hath made a new discovery of anything, in such cases the King of his grace and favor, in recompense of his costs and travail, may grant by charter unto him, that he only shall use such a trade or traffique for a certain time, because at first the people of the kingdom are ignorant and have not the knowledge or skill to use it."

<sup>33</sup> Marsden v. Sayville Street, etc. Co., L. R. 3 Ex. Div. 203.

<sup>34</sup> "It is difficult to say *a priori* on what principle a person who did not invent anything, but who merely imported from abroad into this realm the invention of another, was treated by the judges as being the first and true inventor. I have never been able to discover the principle, and I could never get a satisfactory answer. The only answer was, It has been so decided, and you are bound by the decisions. . . The grounds on which it is put we do know . . . considering the difficulty which then attended communication from abroad, a man who brought in anything from abroad did it at the peril of his life and consumption of his estate and stock, and it was therefore such a meritorious service done to this kingdom, that the king might lawfully grant him a monopoly. That is the ground it is put upon. Now, there is some reason in that. It does not make him a true and first inventor, but it does show a true and meritorious consideration which warranted an exception from the general rule that monopolies could not be granted." "No doubt it was that use (in the early cases) which induced the judges, after the passing of the statute of James, to treat the man who brought the invention from beyond the seas as being

In the United States the granting of patent monopolies by the colonies had been so infrequent that it may be said there was no established custom before the privilege of granting patents to inventors was conferred upon the federal government by the framers of the Constitution. By that date the facility of communication was such as to have removed completely the reasons because of which patents for importations had been sustained by the Common Law.<sup>35</sup> Nothing is said expressly in the Constitution, or in the patent acts passed thereunder, regarding importation or importers as such, and the only possible right to a patent for an importation would have to depend, therefore, upon a favorable interpretation of the word "invention." The courts have been uniform in holding that "information" is *not* included in "invention."<sup>36</sup>

DISCOVERY. The statute authorizes the issue of a patent to one who has "invented or discovered" certain things. In ordinary usage the verb "discover" has a sense of bringing to light that which before existed but was unknown. In such sense Columbus "discovered" America and Newton "discovered" the law of gravity. It is defined as meaning to "uncover" or "disclose." In the Century Dictionary it is said,

in the same position as the first and true inventor, or as being in an equivalent position, and gradually the language seems to have been changed and he was treated as the true and first inventor." *Marsden v. Sayville St. etc. Co.*, supra. The court then went on to hold that whether the "ordinary or the existing meaning" of the word inventor be used, the particular plaintiff, as the facts lay, did not come within either. In a recent English work (*The Laws of England*, by the Earl of Halsbury and others, vol. 22, p. 130 ff) it is said "An inventor is a person who discovers or finds out something new, a framer, contriver, or deviser of what was before unknown. Invention is an act of the mind, and a person whose mind performs the act is the true inventor." But almost immediately the writer goes on to say "as the Statute of Monopolies was construed to intend to preserve all monopolies which would have been good at common law, the words "true and first inventor" have always been construed to include "true and first importer."

<sup>35</sup> There seems to have been some belief even at the time the Constitution was adopted that a monopoly for new importations would be desirable. See Story's Commentaries on the Constitution, vol. II, § 1153.

<sup>36</sup> *McClain v. Ortmeier*, 141 U. S. 419, 427; and cases infra.

"*Discover, Invent*, agree in signifying to find out; but we *discover* what already exists, though to us unknown; we *invent* what did not before exist." The conjunction of the two words in the statute might seem to imply that one is complementary of the other and that the framers intended to allow patenting of both inventions and discoveries, in the normal sense of the words, provided only that they were not known and used before. The courts have, however, consistently interpreted the statutes as being confined to those things which come within the meaning of "invention" only, and have treated discovery as though it were synonymous therewith instead of an addition to it.

The word "invention" has never been defined with any degree of exactness in delimitation and both courts and writers agree that it can not be. "The truth is," says the Supreme Court, "the word can not be defined in such manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not."<sup>37</sup> But the cases all agree that there can not be invention without *creation*. Mere revelation of something existing but unknown is not sufficient, there must be something produced by operation of the mind.

A PRINCIPLE OR LAW OF NATURE, (that is, the fact that from certain causes certain different results will "naturally" and invariably follow) exists, at least according to many accepted philosophers, whether humanity is aware of it or not.<sup>38</sup> The discovery that a certain result will follow from certain relations of matter is not in any way creation of the result, it is a mere revelation of the causal relation. It is truly *discovery*, in its usual sense, and not *invention*. It is therefore not patentable. Possibly the statutes are defective economically, and unjust also, in not providing rewards for such revelation of important knowledge, but, as interpreted by the

<sup>37</sup> McClain v. Ortmeyer, 141 U. S. 419, 426.

<sup>38</sup> As to whether principles of nature have been given to us by God or by the human beings who first revealed them to us, is entertainingly argued by Gerard and the Doctor in Reade's, "The Cloister and the Hearth."

courts, they do not authorize any reward. The most conspicuous case of unpatentable discovery of a law of nature is that of *Morton v. New York Eye Infirmary*.<sup>39</sup> The patentee in this case had discovered that the introduction of sulphuric ether to the lungs, that is to say, its inhalation, "would produce insensibility to pain, or such a state of quiet nervous action as to render a person or animals incapable, to a great extent, if not entirely, of experiencing pain while under the action of the knife. . . ." This beneficent effect, the court conceded, had never been known before. It was, however, the only new thing about the alleged invention, the ether itself and the apparatus for applying it being both well known. It was, in short, only the discovery of a result naturally arising from a certain relation of matter. As the court put it, the patent presented nothing new except the *effect* produced by well known agents, administered in well known ways on well known subjects.

The court recognized the ineffable benefit to humanity of this discovery but nevertheless held the patent which had been issued to be invalid, saying "At common law an inventor has no exclusive right to his invention or discovery. That exclusive right is the creature of the statute, and to that we must look to see if the right claimed in a given case is within its terms. The act of Congress provides, 'that any person or persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in public use, or on sale with his consent or allowance as the inventor or discoverer,' shall be entitled to receive a patent therefor. The true field of inquiry, in the present case, is to ascertain whether or not the alleged invention, set forth in this specification, is embraced within the scope of the act. Very little light can be shed on our path by attempting to draw a practical distinction between the legal purport of the words 'discovery' and

<sup>39</sup> 5 Blatch. 116, 2 Fisher 320.

'invention.' In its naked ordinary sense, a discovery is not patentable. A discovery of a new principle, force, or law operating, or which can be made to operate, on matter, will not entitle the discoverer to a patent. It is only where the explorer has gone beyond the mere domain of discovery, and has laid hold of the new principle, force, or law, and connected it with some particular medium or mechanical contrivance of which, or through which, it acts on the material world, that he can secure the exclusive control of it under the patent laws. He then controls his discovery through the means by which he has brought it into practical action, or their equivalent, and only through them. It is then an invention, although it embraces a discovery. Sever the force or principle discovered from the means or mechanism through which he has brought it into the domain of invention, and it immediately falls out of that domain and eludes his grasp. It is then a naked discovery, and not an invention.

"A discovery may be brilliant and useful, and not patentable. No matter through what long, solitary vigils, or by what importunate efforts, the secret may have been wrung from the bosom of Nature, or to what useful purpose it may be applied. Something more is necessary."<sup>40</sup>

The result of the case seems hard, but the exposition of the court demonstrates that the patentee *created* nothing. He could not therefore acquire a reward, because the patent laws have never been construed as rewarding diligence in merely finding out the various possessions with which the Creator of all things has already blessed the world.

Another case which is frequently cited as supporting the rule that a principle of nature can not be patented, even though newly discovered, is that of *O'Reilly v. Morse*.<sup>41</sup> The patentee, Morse, had discovered that electricity, acting through the electro-magnet, could be used for the transmission of intelligible signals, and he had devised a particular means for utilizing this discovery. The first seven claims of his patent dealt with

<sup>40</sup> The credit for the discovery is attributed to Morton, beyond doubt, in Park's History of Med. 2d ed. p. 312.

<sup>41</sup> 15 How. 61.

this particular idea of means and were sustained by the Supreme Court. The eighth claim was broader, and amounted in reality to a claim of the natural principle or force of electro-magnetism for transmitting intelligible signals. It read "I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for marking or printing intelligible characters, signs, or letters, at any distances, being a new application of that power of which I claim to be the first inventor or discoverer." This claim the court rejected as invalid saying of it, "It is impossible to misunderstand the extent of this claim. He claims the exclusive right to every improvement where the motive power is the electric or galvanic current, and the result is the marking or printing intelligible characters, signs, or letters at a distance. If this claim can be maintained, it matters not by what process or machinery the result is accomplished. For aught that we now know some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in the plaintiff's specification. His invention may be less complicated—less liable to get out of order—less expensive in construction, and in its operation. But yet if it is covered by this patent the inventor could not use it, nor the public have the benefit of it without the permission of this patentee. No one we suppose will maintain that Fulton could have taken out a patent for his invention of propelling vessels by steam, describing the process and machinery he used, and claimed under it the exclusive right to use the motive power of steam, however developed, for the purpose of propelling vessels. It can hardly be supposed that under such a patent he could have prevented the use of the improved machinery which science has since introduced; although the motive power is steam, and the result is the propulsion of vessels. Neither could the man who first discovered that steam might, by a proper arrange-



ment of machinery, be used as a motive power to grind corn or spin cotton, claim the right to the exclusive use of steam as a motive power for the purpose of producing such effects.”<sup>42</sup>

<sup>42</sup> In a sense this statement was dictum since it affected only the costs of the suit and not its merits. *Leroy v. Tatham*, 14 How. 156; *Id.* 22 How. 132, 136; *Foot v. Silsby*, 2 Blatch. 260. An opposite view is set out by Mr. Justice Nelson in his dissenting opinion in *Leroy v. Tatham*, 14 How. 156, 186. “I shall not pursue a reference to the authorities on this subject any further. The settled doctrine to be deduced from them, I think, is, that a person having discovered the application for the first time of a well-known law of nature, or well-known property of matter; by means of which a new result in the arts or in manufactures is produced, and has pointed out a mode by which it is produced, is entitled to a patent; and, if he has not tied himself down in the specification to the particular mode described, he is entitled to be protected against all modes by which the same result is produced, by an application of the same law of nature or property of matter. And *a fortiori*, if he has discovered the law of nature or property of matter, and applied it, is he entitled to the patent, and aforesaid protection. And why should not this be the law. The original conception—the novel idea in the one case, is the new application of the principle or property of matter, and the new product in the arts or manufactures—in the other, in the discovery of the principle or property, and application, with like result. The mode or means are but incidental and flowing naturally from the original conception; and hence of inconsiderable merit. But, it is said, this is patenting a principle, or element of nature. The authorities to which I have referred, answer the objection. It was answered by Chief Justice Eyre, in the case of *Watts’s patent*, in 1795, fifty-seven years ago; and more recently in still more explicit and authoritative terms. And what if the principle is incorporated in the invention, and the inventor protected in the enjoyment for the fourteen years. He is protected only in the enjoyment of the application for the special purpose and object to which it has been newly applied by his genius and skill. For every other purpose and end, the principle is free for all mankind to use. And, where it has been discovered, as well as applied to this one purpose, and open to the world as to every other, the ground of complaint is certainly not very obvious. Undoubtedly, within the range of the purpose and object for which the principle has been for the first time applied, piracies are interfered with during the fourteen years. But anybody may take it up and give to it any other application to the enlargement of the arts and of manufactures, without restriction. He is only debarred from the use of the new application for the limited time, which the genius of others has already invented and put into successful practice. The protection does not go beyond the thing which, for the first time, has been discovered and brought into practical use; and is no broader than that

PATENTS FOR THE MEANS OF UTILIZING A NATURAL PRINCIPLE have been consistently sustained; indeed it would be difficult to conceive of any mechanical contrivance whose effectuation of a given result, static or dynamic, did not make use of some "natural principle." The conception of a means of utilizing such a principle does, however, involve creation; the means is something which did not before exist, in the ordinary comprehension of existence, and such a concept is therefore within the intended protection of the patent laws.<sup>43</sup>

The courts have experienced considerable difficulty, however, in distinguishing with certainty between the use of a principle, which is not patentable, and the means of utilizing it, which is patentable. The discovery of a new principle is held to entitle the discoverer to a wide range of protection in the means he devises to utilize it. He is secured not merely in the precise form of means he sets out in his patent but in all forms which are essentially similar. The principle itself thus becomes a part, at least, of the device, inasmuch as it is the real distinguishing feature of two otherwise similar devices. The result is that in a certain sense the principle is actually patented, *as part of the entire device*. The difficulty of differentiating between the patenting of a principle, by itself, and the patenting of a device which is distinguished from other devices only by the principle utilized in it, has created much confusion. That the principle may be an essential part of a patented device is sustained by many cases which, if the distinction between a principle by itself, and as part of a device,

extended to every other discoverer or inventor of a new art or manufacture. I own, I am incapable of comprehending the detriment to the improvements in the country that may flow from this sort of protection to inventors. To hold, in the case of inventions of this character, that the novelty must consist of the mode or means of the new application producing the new result, would be holding against the facts of the case, as no one can but see, that the original conception reaches far beyond these. It would be mistaking the skill of the mechanic for the genius of the inventor."

<sup>43</sup> O'Reilly v. Morse, 15 How. 61; Neilson v. Harford, 1 Webs. Pat. Cases, 295. Tilghman v. Proctor, 102 U. S. 707, Leroy v. Tatham, 14 How. 551; Parker v. Hulme, 1 Fish. Pat. Cases 44, Fed. Cas. No. 10740.

be not clearly understood, seem to conflict with the rule that a principle can not be patented. The author suggests, though far from stating it as the accepted rule, that the fundamental difference between an unpatentable law of nature and one which is patentable as part of a concrete contrivance, be it "machine" or "process," is in the self-operative character of the law involved. If it is a principle which will produce the result automatically when merely given substance to operate on it is unpatentable. It is utilized to be sure, but not through the assistance of any means of utilization. But a principle which produces the desired result only through physical manipulation of substances, and as a concomitant of that manipulation, not as a sequent to it, is patentable as *part of the idea of means* whereby the result is produced. Certainly the cases decided recently give credence to the proposition, that while a principle of nature may not be patented as a means and an end in itself, it may be patented as an integral part of an idea of means the substantive part of which, even as an entirety, is old.<sup>44</sup> That is to say, the principle alone could not be patented; neither could the substantive contrivance by itself be patented, for it is already well known; but the *new combination*, of unpatentable principle and old mechanical device, can itself be patented.

An excellent illustration of this is seen in the case of *Leroy v. Tatham*.<sup>45</sup> Here the patentee had discovered

<sup>44</sup> This is in exact accord also with the theory on which patents are economically justified, if the proposition of Mr. Taussig in "Money-Makers and Inventors" is correct. This proposition is that people will invent and make research to the full extent of their abilities of the creative instinct, and without the stimulation of a legal reward, but that the monopoly of a patent is necessary to induce capital to make inventions commercially practical. If this be so, no reward is necessary to stimulate research and discovery of the principles of nature, and, not being necessary, would not be justifiable. But a reward is necessary to investigate the development of practical means of utilizing the discovered principle, and such a reward is offered by the patent statutes. On this theory, therefore, the fact that discovery of an important principle of nature is not patentable, but conception of a means by which that principle may be put to practical use is patentable, even though the material part of that means be already well known, is not a defect in the patent law, but a virtue.

<sup>45</sup> 14 How. 156. For the facts see *Tatham v. Leroy*, 2 Blatch. 474.

the principle that lead in a solid condition would reunite after separation, if heated under great pressure. He devised a method of utilizing this principle in the making of lead pipes, and claimed, as his invention, this particular device when used for such a purpose. Similar machines, on a lighter scale, had been used before this for other purposes such as the making of clay pipes and macaroni. The court in this case confined him to the device as set forth, without considering its connection with a new principle, and held that evidence of other similar devices for other purposes, utilizing other principles, might be admitted to prove that the patentee's device was not new. But this same case came before the Supreme Court again, in equity,<sup>46</sup> and a conflicting decision was reached. The court in the second case held that the device patented was not deprived of novelty by the existence of other *machines* similar to it, but smaller and intended for other purposes. The novelty of the patentee's device lay, it would appear, in the fact that it was used in combination with the new principle.<sup>47</sup> The patentee's concept was the new combination of the old machine with the novel principle; clearly a *new* concept.

It can not therefore be correct to say broadly either that a principle of nature can not be patented or that it can be patented. Either statement results in confusion. It must be understood, before any statement is definite, in just what sense the terms are used.

"FUNCTION," "RESULT," "PRINCIPLE OF OPERATION," ETC.  
What has just been said in regard to a principle of nature ap-

<sup>46</sup> 22 How. 132.

<sup>47</sup> In *Foot v. Silsby*, 2 Blatch. 260, the court held, broadly that a patent might be granted for any means, old or new, of utilizing a newly discovered principle. *Poillon v. Schmidt*, 6 Blatch. 209; *Tilghman v. Proctor*, 102 U.S. 707. See also *The Telephone Cases*, 126 U.S. 1. The patent sustained in *Minerals Separation Co. v. Hyde*, 242 U. S. 261, seemed to be practically a patent for a principle, the means by which it might be utilized are so general. At any rate, the court of Appeals declared the patent invalid because the appreciable means used was so nearly identical with means long known. The Supreme Court reversed this, and held the patent valid because the difference from the known means, slight as it was, brought an entirely different principle into play.

plies equally to the patentability of such abstractions, as the function of a machine, or its principle of operation, etc. These are qualities or characteristics of a device, and have no conceivable existence except as appertaining to something else. In no sense can they be created in and of themselves; if they are created, it is because something else of which they are an inherent quality or characteristic has been created. Not being themselves created they can not themselves be patented.

But the function which a device performs, the principle on which it operates, or the result which it accomplishes may be the particular characteristic which distinguishes it from other devices. This function, etc., is an intrinsic part of the concept which is the invention. Indeed, the result accomplished, the purpose, the principle of operation, or the like, may, like the principle of nature utilized, be the *only* characteristic which distinguishes the device, that is, the concept, from the concept of other devices. Just as the natural principle used in Tatham's machine for making lead pipe was the only thing which distinguished his invention from the old machines for making macaroni, so the result which a device accomplishes may serve as its only distinction from known devices. If this difference is sufficient to convince the courts that the later concept, as characterized by its function, etc., was the result of inventive genius, it may be patented. Thus it may happen that a device is recognizedly patentable whose only distinguishing feature is its principle of operation, its function, or the like. One tends, therefore, to think of the function or principle of operation as having itself been patented, and is apt to say loosely that it has been. This leads to a deal of confusion in the expressions of the cases. For instance, Mr. Justice Brown appears guilty of contradicting himself by saying, in one and the same opinion,<sup>48</sup> first that a function can not be patented, and then, that a "pioneer patent,"—which gives the patentee an especial breadth of protection—"is commonly understood to denote a patent covering a function never before performed." But owing to the fact that these abstract qualities have them-

<sup>48</sup> Westinghouse v. Boyden Power Brake Co., 170 U. S. 537.

selves no separate existence, it is only the devices characterized by them that are patented, and the cases demonstrate indubitably that devices differentiated from others by these characteristics only may be validly patented, if it required inventive genius to conceive that difference.

## § 2. CHARACTER

Thus far we have considered the nature of patentable inventions in respect to their source. We now take up their necessary character.

AN INVENTION IS A CONCEPT. Of first importance is the proposition that an invention is not tangible. It is a concept; a thing evolved by the mind. It is not a tangible thing produced by manual effort. The statute does refer, to be sure, to one who has invented any new "art, machine, manufacture, or composition of matter." These things are tangible. But it does not say, one who has "made" a machine, etc.; it says "invented" such things. And the act of invention is undeniably and undeniably a mental and not a manual act. The phrase "art, machine, manufacture, or composition of matter" merely refers to and limits the subject matter of the concept.

*Machine, Manufacture, Composition of matter.* Since patentable inventions are limited to concepts of a new art, machine, manufacture or composition of matter, it is essential to know just what those terms include. There is a most remarkable confusion of definition and judicial explanation of the meaning of each term. A frequent subject of dispute is whether or not the privilege of patenting a "machine" includes that of patenting a "tool." In other words is a "tool" a "machine?" Variant definitions are to be found in the cases;<sup>49</sup> text writers are equally indecisive of the meaning of machine. Mr. Hopkins accepts<sup>50</sup> the definition that "the term 'machine' includes every mechanical device or combination of mechanical powers to produce some function and to produce a certain

<sup>49</sup> *Corning v. Burden*, 15 How. 252; *Burr v. Duryee*, 1 Wall. 531; *Coupe v. Weatherhead*, 16 Fed. 673.

<sup>50</sup> Hopkins on Patents, I. p. 53 ff.

effect or result." Macomber<sup>51</sup> says, vaguely, "A machine consists in imposing upon mechanical elements the mind of the inventor, working in harmony with the laws of mechanics to effect a result." Robinson<sup>52</sup> insists that a distinction between machines and other instruments is necessary for harmony in the law and for its proper application. Nevertheless he recognizes that whether or not a device is a machine or a tool has nothing whatever to do with its inherent patentability. The name by which the inventor himself calls the device is immaterial to the validity of the patent; and if the device be not, in fact, a "machine," it is equally as patentable as a "manufacture."

So far as there is any harmony of usage of the terms, the distinction appears to turn, generally speaking, upon whether the desired result is accomplished by a dynamic means or a static one. An inventively shaped collar button, for instance, holding a collar in place by its mere presence, or accomplishing the result of its own position with novel ease because of its mere shape, would probably be a "manufacture." A thing of wheels and levers accomplishing the result of producing an old form of collar button from flat, unformed material would undoubtedly be a machine. A typewriter would probably be a machine; but would a pair of pincers, which accomplishes a result by transmitting dynamic energy, be a machine; or would a hammer, or cold chisel? The question has never been settled and it is fortunate that it does not need to be.

The term "composition of matter" is generally applied to those embodiments of the invention whose peculiarity does not depend upon external, visible shape, but upon internal relations.

As Mr. Robinson himself says, the name "manufacture" includes "every article devised by man except machinery upon the one side, and compositions of matter and designs upon the other." The name by which the inventor characterizes his concept is immaterial. The terms machine, manufacture, composition of matter and design cover everything tangible which

<sup>51</sup> Fixed Law of Patents, p. 61.

<sup>52</sup> Rob. on Patents, Vol. I, Ch. II.

man could conceivably contrive. It seems clear therefore that a concept of anything to be given tangible form by man is, so far as its subject-matter is concerned, patentable. It is quite unnecessary to decide into what class of tangible things it falls. So far as the writer is aware, in no case has this ever been a material issue.<sup>53</sup>

*Art.* The Century Dictionary defines an art as, "the combination or modification of things to adapt them to a given end; the employment of a given means to effect a purpose; . . . a system of rules and traditional methods for facilitating the performance of certain actions." Despite the provision that an invention whose subject matter is an "art" may be patented, the early cases had some doubt as to whether an idea of accomplishing a given result by a novel series of steps, or sequence of operations, could be patented. Such a sequence of actions is usually called, in the patent law, a "process."

Of the cases which declare a process not to be patentable, that of *Risdon Iron & Locomotive Works v. Medart*<sup>56</sup> is typical. The invention was a method of manufacturing belt pulleys. It appeared that pulleys as theretofore made had been more or less out of balance, owing to the fact that the distance from the axis of revolution to the inside of the rim was not uniform along all radii. In consequence, when the outside of the rim was ground to a perfect surface everywhere equidistant from

<sup>53</sup> A unique statement is found in *Jacobs v. Baker*, 7 Wall. 295 which appears to be in conflict with the proposition that everything tangible is included in the terms machine, manufacture or composition of matter. The device patented was a jail having "a secret passage, or guard chamber," around the outside of an iron-plate enclosure. The purpose was to allow the keeper to hear the prisoners and oversee them without their being conscious of his presence. The court held the patent to be invalid, and in the course of its opinion said, "Now a jail can hardly come under the denomination of a 'machine'; nor, though made by hands, can it well be classed with 'manufactures'; nor, although compounded of matter, can it be termed a 'composition of matter', in the meaning of the patent act." This statement is, however, the merest dictum and the court, "waiving all these difficulties as hypercritical," found that there was no novelty whatever in the jail described but that it had been in use long before the alleged invention.

<sup>56</sup> 158 U. S. 68.



the axis, the thickness of the rim necessarily varied at different radial points. The patentee proposed to obviate this inequality by grinding the ends of the radial arms to an equality from the center before the rim itself was attached.

In a very confusing opinion the court says, "That the patent is for a process in manufacture, and not for the mechanism employed, nor for the finished product of some manufacture, is undeniable, and is so expressed upon the face of the specification. That certain processes of manufacture are patentable is as clear as that certain others are not, but nowhere is the distinction between them accurately defined. There is somewhat of the same obscurity in the line of demarcation as in that between mechanical skill and invention, or in that between a new article of manufacture, which is universally held to be patentable, and the function of a machine, which it is equally clear is not. It may be said in general that processes of manufacture which involve chemical or other similar elemental action are patentable, though mechanism may be necessary in the application or carrying out of such process, while those which consist solely in the operation of a machine are not. Most processes which have been held to be patentable require the aid of mechanism in their practical application, but where such mechanism is subsidiary to the chemical action, the fact that the patentee may be entitled to a patent upon his mechanism does not impair his right to a patent for the process; since he would lose the benefit of his real discovery, which might be applied in a dozen different ways, if he were not entitled to such patent. But, if the operation of his device be purely mechanical, no such considerations apply, since the function of the machine is entirely independent of any chemical or other similar action." The court therefore came to the stated conclusion that "all that he invented in fact was a machine for the more perfect manufacture of such pulleys, and the operation or function of such machine, however, is not patentable as a process." The relation of this statement to the first statement, that the patent was not for a machine, is decidedly obscure. The real reason for the decision is ob-

vious enough, however, after the confusion of other statement is stripped off, in the express finding that "in short, this is a patent only for superior workmanship, and within all the authorities is invalid."<sup>57</sup>

Of the cases holding that a "process" is patentable, the strongest is that of *Cochran v. Deener*.<sup>58</sup> The purpose of the inventor was "to increase the production of the best quality of flour," and the invention "consisted in separating from the meal first the superfine flour, and then the pulverulent impurities mingled with the flour producing portions of the middlings-meal, which when reground and rebolted, would yield pure white flour" thus increasing the total amount of such white flour. The method described consisted "in passing the ground meal through a series of bolting-reels clothed with cloth of progressively finer meshes, which pass the superfine flour and retard the escape of the finer and lighter impurities; and, at the same time, subjecting the meal to blasts or currents of air introduced by hollow perforated shafts furnished with pipes so disposed that the force of the blast may act close to the surface of the bolting-cloth; the bolting-chest having an opening at the top for the escape of the air, and of the finer and lighter particles therewith, through a chamber where the particles are arrested, whilst the floor and sides of each compartment of the chest are made close, so as to prevent the escape of the air in any other direction than through the said opening. By this means, the superfine flour is separated, and the fine and light specks and impurities, which ordinarily adhere to the middlings and degrade the flour produced therefrom, are got rid of; and when the middlings are now separated from the other portions of the meal, they are white and clean, and capable of being reground and rebolted, so as to produce superfine flour equal in quality and even superior to the first instalment. This is the process described; but the patentee claims that it is not limited to any special arrange-

<sup>57</sup> For other cases in which it has been held that the alleged invention revealed only superiority of workmanship and was therefore not invention, see *infra*.

<sup>58</sup> 94 U. S. 780.

ment of machinery. He admits the prior use of currents of air in the interior of the reels, introduced by means of hollow, perforated shafts, for the purpose of keeping back the speck, and increasing the quantity of superfine flour; but not for purifying the middlings preparatory to regrinding. His improvement, therefore, does not consist in using drafts and currents of air, but in the process as a whole, comprising the application of the blast, and the carrying off of the fine impurities, whereby the middlings are purified preparatory to regrinding after being separated from the other parts." The defendants used a formally different mechanical device, but the same process of manufacture.

It was admitted that the new method had produced a revolution in the manufacture of flour. The fact that the mechanical devices actually used were old did not affect the validity of the patent, the court held, because they were not themselves the invention. This, the court said, was a process, and "That a process may be patentable, irrespective of the particular form of the instrumentalities used, cannot be disputed. If one of the steps of a process be that a certain substance is to be reduced to a powder, it may not be at all material what instrument or machinery is used to effect that object, whether a hammer, a pestle and mortar, or a mill. Either may be pointed out; but if the patent is not confined to that particular tool or machine, the use of the others would be an infringement, the general process being the same. A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence."

A more recent statement is found in *Expanded Metal Co. v. Bradford*.<sup>59</sup> The suit involved defendant's right to use a certain machine for making "expanded" sheet metal. Before complainant's patent, such metal had been made either by cutting properly placed slits in the plates and then opening the metal by bending the severed portions, as two operations, or by cutting and opening, in a different way, simultaneously. Both these methods had the objection of distorting the external dimensions of the plate from which it was made. Golding conceived the idea of simultaneously cutting and opening the metal by both bending and stretching the severed portions and of following this up with a like operation in which the location of the cuts was changed in a longitudinal as well as a transverse direction. This method resulted in substantial advantages. It was the coordination of these two operations to produce the result, which in the opinion of the court constituted the invention.

The mechanism by which the work was perfected could have been produced on demand by any competent mechanic. Furthermore, no mechanism for doing it was described in the specification, though enough was suggested to indicate to a skilled mechanic what to construct for the purpose. It thus appears that the invention could have been nothing more than the method of procedure for accomplishing the result. The real invention was a concept of procedure, although to be carried out by substantial machinery. The court held the patent valid. In discussing the meaning of this "process," it quoted with approval<sup>60</sup> "A machine is a thing. A process is an act or a mode of acting. The one is visible to the eye—an object of perpetual observation. The other is a conception of the mind, seen only by its effects when being executed or performed. Either may be the means of producing a useful result." "We therefore," said the court, "reach the conclusion that an invention or discovery of a process or method involving mechanical operations, and producing a new and useful

<sup>59</sup> 214 U. S. 366.

<sup>60</sup> *Tilghman v. Proctor*, 102 U. S. 707.

result, may be within the protection of the Federal Statute, and entitle the inventor to a patent for his discovery."<sup>61</sup>

It now seems settled that the concept of a series of steps, or a method of operation, to produce a stated result is patentable, so far as its subject matter is concerned. It will be noted, however, that in all the cases cited on this point, the art, or process, has been carried out through the manipulation of substance and the use of tangible instrumentalities.

*Mental process.* It is a pertinent inquiry, therefore, whether a method of accomplishing a given result which does not require the use of tangible instrumentalities; in other words, whether a purely *mental process*, not involving the manipulation of substance, can be protected by patent as an "art." If, for instance, a mathematician should evolve, as the result of real inventive genius, a new method of determining the cube root of numbers; or if a stage "magician" should hit upon a novel method of conveying secret information by means of apparently commonplace speech, would not these methods of accomplishing the ends desired come within the statutory meaning of an "art"? There is no direct authority upon the question, but the writer fully believes that such a process of accomplishing a result is an "art," and as such is patentable. The reason is negative; that is, there is no sound reason why it should not be patentable as an art.

All the authority opposed to the proposition appears to be

<sup>61</sup> *Lawther v. Hamilton*, 124 U. S. 1. The court upheld the patent in this case although all the instrumentalities were well known, because "the mode of using and applying these old instrumentalities" was new. "And what is that but a new process? This process consists of a series of acts done to the flax-seed. It is a mode of treatment." Cf. *Gage v. Herring*, 107 U. S. 640; Cf. *Crescent Brewing Co. v. Gottfried* 128 U. S. 158; *Fuller v. Yentzer*, 94 U. S. 288. "That the means, and the only means, of applying the process, are strictly mechanical, is a matter of no moment, so far as patentability is concerned. If the process when distinguished from the means of performing it, is new, useful, and intellectually rises to the dignity of invention, it is patentable—if it falls within the meaning of the word 'art' as used in the statute." *Buffalo Forge Co. v. City of Buffalo*, 255 Fed. 83.

in the form of *dicta* only. The case of Hotel Security Checking Co. vs. Lorraine Co.<sup>51</sup> is typical of all those most nearly in point. The claim of the patent was for a "means for securing hotel or restaurant proprietors or others from losses by the peculations of waiters, cashiers or other employees, which consists of a sheet provided with separate spaces, having suitable headings, substantially as described, said heading being designatory of the several waiters to whom the several spaces on the sheet are individually appropriated, in conjunction with separate slips, each so marked as to indicate the waiter using it, whereby the selling price of all the articles sold may be entered in duplicate, once upon the slip of the waiter making the sale, and once upon his allotted space upon the main sheet, substantially as and for the purpose specified." It will be observed that the claim really made was not in the least for a mental process, nor even for a series of human actions, or other form of art, but for a wholly tangible sheet of paper, to be used in conjunction with other sheets of paper, all appropriately marked and designed. Of this tangible means the court said briefly, "It can not be maintained that the physical means described by Hicks,—the sheet and the slip—apart from their manner of use, present any new and useful feature." The court then proceeded to discuss the case on the seemingly unwarranted assumption that the patentee had claimed an intangible thing. It said, "It is manifest that the subject matter of the claim is not a machine, manufacture or composition of matter. If within the language of the statute at all, it must be as a 'new and useful art.'" It then went on to say, "In the sense of the patent law, an art is not a mere abstraction. A system of transacting business disconnected from the means for carrying out the system is not, within the most liberal interpretation of the term, an art. Advice is not patentable." This expression, and more of like tenor, is pointedly to the effect that an intangible means of effectuating a result is not patentable. The actual decision of the case did not require any such statement and is, in fact,

<sup>51</sup> 160 Fed. 467.

placed on the ground that the fundamental principle of the system is "as old as the art of book-keeping" and the patentee had "modified and adapted it to fit the ephemeral character of the business in hand, but it required no exercise of the inventive faculties to do this." The case thus clearly turns on the lack of novelty of the alleged invention and the statements in regard to the character of patentable invention are merely *dicta*.<sup>55</sup>

Lest this discussion may have somewhat overshadowed the original proposition, it may well be said again, that although an invention is an idea, not a tangible thing, not every idea is patentable as an invention. It must be an idea of the classes named in the statute, namely the idea of a new art, machine, manufacture or composition of matter.

<sup>55</sup> In a case more nearly in point (*Fowler v. City of N. Y.*, 121 Fed. 747) the patent was described by the court as "a new plan for handling the large number of passengers who patronize the public vehicles provided for rapid transit in large cities." It consisted in an arrangement of tracks and stations such that passengers could be picked up at local stations, and transferred to express trains at express stops, without necessitating an interfering use of the same tracks by both express and local trains. It was in substance the now well known system of "island stations," or platforms, located between the local and express tracks so that passengers can be received at one side and transhipped from the other. It was argued that this system constituted a "machine." The court appears to have doubted the proposition but to have conceded it for the sake of argument, and on such concession, held the device unpatentable because any competent engineer could have devised the same plan whenever it should become practically usable. The only justification for interpreting the case as authority for holding an intangible means of accomplishing a result unpatentable is the fact that the court did concede, for the sake of argument, that the contrivance in question was tangible. Another case in which the real and expressed ground for the holding belies the loose statements of patentability is *Rison Loco. Wks. v. Medart*, 158 U. S. 68. A class of cases apt to be confused with the character of patentable invention is that in which the means employed to the end is the result of selection and good judgment. The courts have held this excellence of judgment not to constitute invention. This is equivalent only to holding that this type of means is unpatentable for lack of invention and is quite different from holding that no intangible means can be patented. References to particular cases are noted *infra*. See a further discussion in 15 Michigan Law Rev. 660.

INVENTIVE QUALITY. We have already discussed invention in respect to the creative element which is necessary. But while nothing is patentable as invention which is not the result of creation, not everything that has been created by a person is patentable. One may actually create something by the labor of his own mind so that, in respect to himself, it comes within all the definitions of invention. But the purpose of the patent laws is to promote the progress of science and the useful arts, not merely to reward mental effort as such. Therefore nothing is patentable which is not "new." The fact that a production is new to the producer does not bring it within the statute; it must be new to the public, to the science and arts which the statutes intend to promote.<sup>63</sup>

<sup>63</sup> An interesting illustration of this proposition is found in *New Departure Bell Co. v. Bevin Bros. Mfg., Co.*, 73 Fed. 469. The patent in issue was for a bicycle bell. It had gone into wide use, but the evidence in the case revealed that a very similar mechanism had been described in an English patent for door-bells and call bells issued to one Bennett some fourteen years previous to that of the complainant. If this English mechanism had been utilized in this country, the court said, the fact that it had not been utilized for bicycle bells until complainant's patent would strongly have indicated the presence of invention. But, went on the court, "this argument . . . is not applicable to the case at bar. There is no reason to suppose that Bennett or his bell was ever heard of by any bell manufacturer in this country until his patent was unearthed by a search for anticipating devices." "So well adapted is that mechanism to bicycle bells that it is almost inconceivable that it could have been known to bell makers here during the 14 years in which they were trying to improve such bells, and yet was not availed of. No doubt, Rockwell devised the striking mechanism set out in his patent independently, and with no knowledge of what Bennett had done; and, since that mechanism was better adapted to meet the requirements of a bicycle bell than anything which rival manufacturers had succeeded in producing, it may be accepted as the fruit of an inventive conception, but its novelty is negatived by the British patent. The statutes authorize the granting of patents only for such inventions as have not been patented or described in any printed publication in this or any foreign country before the applicant's embodiment of his own conception. It may be a hardship to meritorious inventors, who, at the expenditure of much time and thought, have hit upon some ingenious combination of mechanical devices, which, for aught they know, is entirely novel, to find that, in some remote time and place, some one else, of whom they never heard, has published to the



This question of novelty does not come up at the time of application and issue of a patent, except as prior knowledge is shown by other applications and already issued patents. These are all that is of record in the Patent Office. New applications are compared with this record, and if anticipation is clear a patent may be refused. But the office can not go outside of this record to look for prior knowledge. The patent when issued indicates, therefore, nothing whatever as to the patentable novelty of the invention, except in respect to other patents issued in this country. Even in this respect it indicates but little since the benefit of the doubt is given to an applicant when his device is at least superficially different from anything theretofore patented.

Whether a production which is new to the creator himself is properly to be called "invention" need not be here discussed. It is possible that in correct definition, "invention" includes the element of novelty as to all human knowledge. If this be true, to speak of a new invention is redundant, and an invention which is lacking in novelty is not an invention. But in ordinary parlance both of courts and of laymen, invention is applied to those productions which the producer thinks are new, whether they are actually of such novelty as to be patentable or not. The statute itself is either unreasonably redundant or else is framed upon this usage; it reads "one who has invented . . . any new . . . art, machine . . . not known or used by others." The reports are replete with references to "inventions" which are not patentable for lack of novelty.<sup>64</sup>

The fact that a device can not be patented unless it is new to the public, being accepted, the question at once arises, in each case, whether the particular device is new or old.

world, in a patent or a printed publication, a full description of the very combination over which they have been puzzling; but in such cases the act, none the less, refuses them a patent."

<sup>64</sup> Reed v. Cutter, 1 Story 590. 2 Robb. Pat. Cas. 81, Fed. Cas. No. 11,645; "Under our patent laws," says Judge Story, "No person, who is not at once the first, as well as the original, inventor, by whom the invention has been perfected and put into actual use, is entitled to a patent. A subsequent inventor, although an original inventor, is not entitled to any patent." Reckendorfer v. Faber, 92 U. S. 347, 350.

The great bulk of litigation under the patent law has arisen out of this question. In mere terminology the question sometimes takes the form of whether there is "novelty" in the "invention," and sometimes whether the concept under consideration is really an "invention" or not. Properly speaking, whether it is "invention" should relate only to whether or not it is such a creation of the mind as comes within the legal meaning of "invention." Whether it is so new to the public as to be patentable should come under the question of "novelty." Nevertheless, both text-writers and courts often discuss the matter of novelty of the idea as though it were a matter of "invention." In a sense this is logical and arises thus;—the courts have consistently held that an alleged inventor must be presumed, legally, to have had knowledge of everything similar to his own production, whether he actually had such knowledge or not.<sup>65</sup> This being the case, a production which is not new to the public is not new, in legal construction, even to the producer, and therefore can not be "invention" even as to him. It is absolutely impossible to allocate, upon a reasonable basis of distinction, those cases which say that a particular device is not patentable because it is "not new," and those which refuse patentability on the ground that it is "not invention" because not sufficiently unlike contrivances already known to society. Except for the form of expression used, however, the inquiry is precisely the same in either class of cases, and the methods of solution are substantially identical. In this analysis therefore, the issue will be considered, for the sake of simplicity and clarity, as one of invention or non-invention, on the principle that the alleged inventor is presumed to have had knowledge of all existing ideas and therefore a production which is not "new" could not have been created by the mind of the person subsequently claiming it.<sup>66</sup>

<sup>65</sup> *Daylight Glass Mfg. Co. v. American Prismatic Glass Co.*, 142 Fed. 454; *Foot v. Silsby*, 2 Blatch. 260, 268.

<sup>66</sup> The precision and extent of knowledge which will suffice to preclude a production from being an invention and the amount of proof of such knowledge which is necessary are discussed later.

It should be repeated here, however, that there is a real distinction between the act of "invention" and certain other acts such as "discovery" or "importation," and that the latter are not patentable however "novel" they may be. It is only novel inventions that the patent statute protects, and therefore it seems more satisfactory to discuss the matter of novelty under the term "invention" than under "novelty." There is less chance for forgetfulness that "novelty" alone is not sufficient.

If the fact of invention depended upon the mere visible form or manifestation of an art, machine, manufacture or composition of matter, the inquiry as to whether a production were invention would involve simply the determination of identity or non-identity of its form with the form of anything which had already existed. But invention, as interpreted by the courts, requires a creation by mental act, a new idea as well as a new substantial and perceptible form. It follows therefore that the substantial form of two devices may be practically identical, yet the later one may be invention because it involves a new concept, idea, principle, or whatsoever it may be called. There is something new actually presented to the public although tangibly embodied in an old form. Thus, a device may be a new idea of means, because the purpose is new, although the physical means is old.<sup>67</sup>

On the other hand a device may be, in tangible form, different from anything which had ever existed, but yet not be an invention because its production involved *no new concept* or idea of means sufficiently different from that of the first device to constitute invention.<sup>67a</sup> We shall discuss this latter condition first.

<sup>67</sup> Such was the invention involved in *Leroy v. Tatham*, 22 How. 132. The patent was sustained although the actual tangible form of the device had existed in other usages before. *Potts v. Creager*, 155 U. S. 597. See also cases under new use for old device.

<sup>67a</sup> The determination of this question is obviously a mental conclusion; in a sense, it is a question of fact. As a rule, however, it is not left to juries to determine but is decided by the court itself. Courts sitting in equity, may, of course, decide questions of fact themselves, but there is no lack of judicial statement to the effect that when the trial is at law the question should be submitted to the jury. *Winans v. N. Y., etc. R. R.*

Assuming, then, that the tangible form of a concept is unlike any form already known, is the concept itself sufficiently different from anything else to be an invention? The answer is not the ascertainment of a sensible fact; it is wholly a mental conclusion, deduced from the perceptible facts.

Whether this new idea, this novelty of concept, is present or not, depends upon all the circumstances of each particular case. There are no rules for determining it, in the sense that there are rules for deciding issues in the common law. Such precision as is necessary to a rule is precluded by the fact that in the nature of the subject no case can arise wherein the facts are the same as those of a precedent case.

In ordinary processes of society and of individuals, the essential circumstances are recurrently similar in many instances. A man buying a suit of clothes on credit from a department store is very apt to do it under precisely the same overt circumstances as the ten or the hundred men preceding him have done. And, in consequence, it may fairly be said that he and his salesman had the same constructive intent in regard to the passing of title as did the buyers and sellers preceding. Proceeding to wider analogies, it is not illogical to say that the buyer of clothes on credit has the same presumptive intent as to the passing of title as the buyer of furniture. There is in all such cases a usual similarity of observable external circumstances. It is possible, also, by a long line of decisions to give to words that may be commonly used a perfectly definite legal meaning.

But where patents are concerned, the very nature of the subject itself precludes similarity, and consequently eliminates any possibility of definite *standards*. When a device whose patentability is asserted is physically like a preceding device there is usually no case for the court. The fact of exact identity, which is in such case apparent to any observer, obviates any pretense of invention. On the other hand, a mere visible difference between two devices does not *ipso facto* denote the

Co., 21 How. 88, "There was in fact but one question to be decided by the court, viz.: the construction of the patent; the question of novelty being the fact to be passed on by the jury." Jackson v. Allen, 120 Mass. 64.

presence of invention. Whether it does actually denote invention is the issue to be decided. Broadly speaking, this issue, and others of the patent law, can not be determined by a mere comparison of those facts which are cognizable by the senses. The decision must come from the operation of the mind upon these observed facts. It is the conclusion of the particular judge, in each case, whether the alleged invention is really a new creation or merely a natural and normal modification of existing ideas.

Sometimes where the observed facts are essentially the same in many instances, the operation of a normal mind upon them will produce the same conclusion that preceding normal minds reached. Consequently, the conclusion which other minds have arrived at, from approximately the same external facts which now face a judge, may properly be considered by him in reaching his own judicial conclusion. So it is possible to compile a line of court decisions whose weight is of controlling influence in a later case where a judicial conclusion is to be reached upon facts that are essentially similar to those in the collected precedents.

But in patent law there can not be this requisite similarity of external facts. The facts appreciable by the senses are the concrete, and usually material, elements of the concept. Always they must be essentially different from the elements of the devices which have preceded them or there is no case at all. The abstract similarity or dissimilarity of the whole to something else, the *legal* likeness or difference, is purely a conclusion of the mind from these always variant external stimuli. As the visible, sensible, facts are always different it follows that the conclusion of another mind in another case can furnish no logical influence upon the decision to be made and it is not only impossible to lay down rules for decision, as in other branches of the law, but absurd to try.<sup>68</sup> As Mr. Justice Story said long ago,<sup>69</sup> "The doctrine of patents may truly be said to constitute the metaphysics of the law."

<sup>68</sup> *Marshall v. Wirt*, 232 Fed. 603, each decision is a question of fact, and stands on its own bottom.

<sup>69</sup> *Barrett v. Hall*, 1 Mason 447, 471.

To some slight advantage, however, decisions in regard to the presence or absence of invention can be grouped according to the particular tangible feature which distinguishes the device involved from other devices. And to the extent that the judicial opinions repeatedly refer to some characteristic circumstance as strongly indicating invention, or as negating it, it can be broadly laid down as a rule, though not an invariable one, that the presence of such feature indicates invention, or otherwise. It may be said, however, that these "rules" have been customarily restricted to the negative position that such or such a feature does not indicate invention.

The great disadvantage of thus attempting to group decisions into even the least forceful or obligatory of "rules" is that it tends to perpetuate the pernicious idea that certain concepts *can not* intrinsically be invention, regardless of their novelty. We have seen that some things which are novel, such as discoveries and importations, are not inventions, and can not be patentable, as such, but that is because those things are not creations of the mind. This proposition seems to confuse itself at times with the so called rules that certain characteristics do not usually denote sufficient mental genius to be worth the name of invention, and the result is the anomalous and vicious proposition that certain characteristic mental concepts *can not* be properly called inventions. Thus it is one thing to say that the aggregation into a unit of static elements (e.g. the placing of an eraser in one end of a wooden sheathed lead pencil) is not usually the product of inventive genius and is therefore not usually invention. But it is quite another thing to say that such aggregation does not ever indicate inventive genius, and, as a matter of law, *can not* be invention. This latter idea is found in the decisions much less often than it used to be, but it is sometimes found, most obnoxiously, in the Patent Office itself, and among young practitioners, trained by text-books and lectures in which it has been laid down as a real rule, that certain mental creations, such as the concept of a particular aggregation, or of a substituted material, *can not* be considered as inventions. It is therefore repeated most emphatically that the cases here

grouped do not stand for rules that certain concepts are not invention, but only illustrate concepts which courts have said, in a number of particular and striking instances, did not *in those cases* reveal invention.

The number of these groups or rules depends upon the judgment of the particular classifier. One text-book of considerable note<sup>70</sup> refers to twelve rules, another<sup>71</sup> to thirty-two. The difference lies in the number of instances which each author considered necessary before a rule could be deduced. Of the thirty-two "rules" of Hopkins' text, some are deduced as rules from the existence of but a single decision in which the particular distinguishing feature was held not to indicate invention. The only authority apparently needed for citing such a decision as a "rule" is, to some minds, the fact that a court has declared as its own generalization that the particular feature involved does not constitute invention. If the mere statement of the court that a particular feature never indicates, or generally cannot indicate, invention, may be taken as a "rule", the number of rules possible is naturally greater than if they be deduced from a consistency of actual decisions. Only the more generally accepted "rules" will be given here.

*Excellence of workmanship* has been held not to denote sufficient mental creation to constitute invention. Therefore a particular manufacture, as such, is not patentably distinguished from others of the same type merely because it is better made. The art of making it, or the machinery by which it is made might be patented under proper circumstances, but the manufacture itself, *if considered apart from the way it is made* is not patentable. It might be said, that the *fact* of better workmanship is not in itself patentable.<sup>72</sup> But it is not im-

<sup>70</sup> Walker.

<sup>71</sup> Hopkins.

<sup>72</sup> *Risdon Locomotive Wks. v. Medart*, 158 U. S. 68, 80. "In short this is a patent only for superior workmanship, and within all the authorities is invalid. This court has repeatedly stated that all improvement is not invention. If a certain device differs from what precedes it only in superiority of finish or in greater accuracy of detail, it is but the carrying forward of an old idea and does not amount to invention. Thus, if it has been customary to make an article of unpolished metal, it does not

possible that the fact of better workmanship *might* come from some underlying idea that is itself an invention.

*Change arising from the use of better or more desirable materials* is not normally treated as showing invention. Thus in *Hicks v. Kelsey*,<sup>73</sup> the validity of a patent for a particular form of "wagon reach," (the shaft connecting the front and rear axles of a wagon), was in question. Ordinarily this shaft is curved in such a way as to allow the front wheel to pass under it when cramped for a turn. Before the patentee's change, reaches had been made of wood with a strap, or straps, of iron fastened along either side of the curved part. The patentee conceived the idea of omitting the wood at the curve and bolting the iron straps together. By this means the shaft became less bulky at the curve though in all other respects and purposes it remained the same. The court held the patent invalid, saying, "The question is whether the mere change of material—making the curve of iron instead of wood and iron—was a sufficient change to constitute invention; the purpose being the same, the means of accomplishing it being the same, and the form of the reach and mode of operation being the same. It is certainly difficult to bring the case within any recognized rule of novelty by which the patent can be sustained. The use of one material instead of another in constructing a known

involve invention to polish it. If a telescope has been made with a certain degree of power, it involves no invention to make one which differs from the other only in its having greater power. If boards had heretofore been planed by hand, a board better planed by machinery would not be patentable, although in all these cases the machinery itself would be patentable." (It should be noted, however, that a manufacture is often identified not by its physical appearance but by its method of manufacture). *International Tooth Crown Co. v. Gaylord*, 140 U. S. 55, 64. "It is hardly necessary to say that it is no invention, within the meaning of the law, to perform with increased speed a series of surgical operations old in themselves, and in the order in which they were before performed. With what celerity these successive operations shall be performed depends entirely upon the judgment and skill of the operator, and does not involve any question of novelty which would entitle him to a patent therefor." *Smith v. Nichols*, 21 Wall. 112, 119; *Edison v. American Mutoscope Co.*, 114 Fed. 926, 935.

<sup>73</sup> 18 Wall. 670.



machine is, in most cases, so obviously a matter of mere mechanical judgment, and not of invention, that it cannot be called an invention, unless some new and useful result, an increase of efficiency, or a decided saving in the operation, is clearly attained. Some evidence was given to show that the wagon-reach of the plaintiff is a better reach, requiring less repair, and having greater solidity than the wooden reach. But it is not sufficient to bring the case out of the category of more or less excellence of construction. The machine is the same. Axe-helves made of hickory may be more durable and more cheap in the end than those made of beech or pine, but the first application of hickory to the purpose would not be, therefore, patentable."<sup>74</sup>

*Mere enlargement* has been held not to indicate the mental creation necessary to invention.<sup>75</sup>

<sup>74</sup> It should be noted that express exception is made if by the substitution of materials "some new and useful result" is produced. *Hotchkiss v. Greenwood*, 11 How. 248. In this case it was urged that it should have been left to the jury to say whether or not the change of materials amounted to invention, but the court held as a matter of law that if the change required no more skill than was required by an ordinary mechanic there was no invention involved in making it. "The difference is formal, and destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of the materials in the manufacture of the instrument for the purposes intended, but nothing more." *New York Belting & P. Co. v. Sierer*, 149 Fed. 756; *Crouch v. Roemer*, 103 U. S. 797; *Guidet v. Brooklyn*, 105 U. S. 550; Cf. *Smith v. Goodyear Dental Vulcanite Co.*, 93 U. S. 486.

<sup>75</sup> *Phillips v. Page*, 24 How. 164; *Planing Machine Co. v. Keith*, 101 U. S. 479; "The appellant contends that the Anson machine fails to be an anticipation of the Woodbury invention, because, as they say, it has no solid bed. It plainly has, however, a solid bed, adequate for the purposes for which the machine was intended and used,—for cutting, and planing light material, sash, and blinds, and the bed is sufficiently solid for such uses. It may be admitted it would be too weak for general planing work upon boards or plank. It is comparatively a small machine. It would not cease to be the same machine, in principle, if any one or all of its constituents were enlarged or strengthened, so that it might perform heavier work. True, the bed is divided by a slit running longitudinally from one end to the other; but the two parts are arranged so as to constitute one bed, and is is not perceived why, if enlarged, it would not answer all the purposes of the Woodbury machine. Mere en-

*Mere duplication of parts* has not normally shown invention. In one case<sup>76</sup> involving a patent for the combination, in a tobacco curer, of two sets of furnaces of different capacities the court said, "But surely there can be no invention in this! Where one stove is found to be unequal to the heating of a room, to put another beside it, even though smaller, requires no invention. And if at the time of the issue of plaintiff's patent there was in use for curing tobacco, or anything else, single furnaces, with flues entering a common flue with a return flue to the chimney, it is not a patentable combination to put two furnaces side by side to accomplish the same purpose, even though one be smaller than the other. The plaintiff's combination produces no new result. It works in no different manner. It is a mere colorable variation from the old method of building furnaces, required no exercise of the inventive faculty, and is not patentable."<sup>77</sup>

But this rule like all the others is not absolute: it does not largement is not invention. The simplest mechanic can make such a modification. Woodbury's patent claims no particular form of a bed. It does not require the bed to be of any specified thickness, or constructed in one piece. Its purpose is to furnish a firm and unyielding support to the material when passing under the cutter, and that may be done as well by constructing the bed of two parts as of one. An anvil composed of two pieces is not the less an anvil, a solid block to resist the blows of a hammer. A solid foundation of a house may be composed of more than one stone. We cannot but think this objection to the Anson machine as an anticipating device is entitled to no weight." *Am. Road Machine Co. v. Pennoek & Co.*, 164 U. S. 26; *American Well Works v. Austin Mfg. Co.*, 98 Fed. 992. dictum.

<sup>76</sup>*Millner v. Voss & Co.*, 4 Hughes 262.

<sup>77</sup>In *Dunbar v. Myers*, 94 U. S. 187, it was held that the use, on a circular saw, of two deflecting plates was not invention because of the fact that the use of one had long been known. "Grant that 2 such plates are in certain cases better than one used alone, still the question arises whether it involves any invention to add the second plate to a machine already constructed with one plate. Beyond doubt, every operator who had used a machine having one deflecting plate knew full well what the function was that the deflecting plate was designed to accomplish, and the reasons for placing it at the side of the saw are obvious to the understanding of every one who ever witnessed the operation of a circular saw. Ordinary mechanics know how to use bolts, rivets, and screws, and it is obvious that any one knowing how to use such devices would

mean that duplication *can not* be the result of invention.<sup>78</sup> In one case where the device was actually only a duplication of existing ones the court held the patent covering it to be valid, saying,<sup>79</sup> "It is contended the changes made by Firm were merely mechanical, and that in reality he but took the presses which he found standing side by side, and banked them one upon another, that the change involved was mere reconstruction, rearrangement, duplication. It is to be noted, however, that printing-press construction is mechanically a highly-developed industry. The complex and intricate details of these great presses; the calls upon them for speed, strength, and product; the constant demand upon builders for improvement; and the keen rivalry existing among such builders and the users of the presses,—are factors which brought the art to this high mechanical standard. The very fact that, with all these stimulating considerations, insuring the most rapid strides in mechanical advance, no such step as Firm's was taken in duplex presses, shows that Firm's change was not in the line of mechanical progress, but in the original, inventive sphere. Granted the change consisted in banking one press upon another, yet the two, when so combined, and in their new relation, so co-acted as to dispense with angle-bars, with a web-de-

know how to arrange a deflecting plate at one side of a circular saw which had such a device properly arranged on the other side, it being conceded that both deflecting plates are constructed and arranged precisely alike, except that one is placed on one side of the saw and the other on the opposite side. Both are attached to the frame in the same manner; nor is it shown, either in the specification or drawings, that there is anything peculiar in the means employed for arranging the deflecting plates at the sides of the saw, or in attaching the same to the frame. Both are alike, except that the outer end of the one on the same side as the strengthening plate projects farther from the saw than the inner end, and that the other is rather smaller in diameter, and that the ends project about an equal distance from the saw." *Slawson v. Grand St. R. R. Co.*, 107 U. S. 649; *Ferguson v. Roos Mfg. Co.*, 71 Fed. 416; *New Departure Ball Co. v. Bevin Bros. Mfg. Co.*, 73 Fed. 469.

<sup>78</sup> Duplication may constitute invention, *Parker v. Hulme*, 1 Fish. Pat. Cases 44 Fed. Cas. No. 10740.

<sup>79</sup> *Goss Printing Press Co. v. Scott*, 108 Fed. 253, 259.

flected course, and made possible a straight-line duplex press. A single straight-line press in itself was no novelty, so far as the straight-line printing of an individual web is concerned; but, when the product of two such presses were united, it was only through angle-bar agency. Firm's device, by placing the two in new relations, eliminated the angle-bar, did away with the tangent-turning webs, and thus secured valuable results. The test in such cases is not whether duplication exists, but whether duplication produces, not mere duplication of product or function, but a new unitary, additional result, and not the mere aggregate of prior, separate mechanism. The mere elements of the combination are immaterial. In their individual relations they may be old, may be mere duplicates; but the test is not the character of the combining elements, but the result flowing from their being combined." Duplication producing a new and a useful result, as it was here produced, may be patentable. It renders useful what was previously useless.

*Aggregation.* Merely to gather static elements into juxtaposition with each other has been held not to indicate invention. A case often cited upon this point is that of *Reckendorfer v. Faber*.<sup>80</sup> The patent in this case was for the now common wooden sheathed lead pencil, having an eraser somewhat larger in diameter than the lead, set into a cylindrical hole in one end. The court, three justices dissenting, held the patent to be invalid, saying, "The combination, to be patentable, must produce a different force or effect, or result in the combined forces or processes, from that given by their separate parts. There must be a new result produced by their union; if not so, it is only an aggregation of separate elements. An instance and an illustration are found in the discovery, that, by the use of sulphur mixed with india-rubber, the rubber could be vulcanized, and that without this agent the rubber could not be vulcanized. The combination of the

<sup>80</sup> 92 U. S. 347. It has always seemed to the writer that this case was wrongly decided—that the collocation into one instrument of these various elements showed much more inventive genius than many another collection of interacting elements which has been upheld as invention. The whole tenor of the case suggests the vision theory, heretofore referred to, that certain concepts, such as aggregation, can not be considered invention.

two produced a result or an article entirely different from that before in use. Another illustration may be found in the frame in a saw-mill which advances the log regularly to meet the saw, and the saw which saws the log; the two co-operate and are simultaneous in carrying on a continuous sawing. A stem-winding watch-key is another instance. The office of the stem is to hold the watch, or hang the chain to the watch: the office of the key is to wind it. When the stem is made the key, the joint duty of holding the chain and winding the watch is performed by the same instrument. A double effect is produced or a double duty performed by the combined result. In these and numerous like cases the parts co-operate in producing the final effect sometimes simultaneously, sometimes successively. The result comes from the combined effect of the several parts, not simply from the separate action of each, and is, therefore, patentable. In the case we are considering, the parts claimed to make a combination are distinct and disconnected. Not only is there no new result, but no joint operation. When the lead is used, it performs the same operation and in the same manner as it would do if there were no rubber at the other end of the pencil; when the rubber is used, it is in the same manner and performs the same duty as if the lead were not in the same pencil. A pencil is laid down and a rubber is taken up, the one to write, the other to erase: a pencil is turned over to erase with, or an eraser is turned over to write with. The principle is the same in both instances. It may be more convenient to have the two instruments on one rod than on two. There may be a security against the absence of the tools of an artist or mechanic from the fact, that, the greater the number, the greater the danger of loss. It may be more convenient to turn over the different ends of the same stick than to lay down one stick and take up another. This, however, is not invention within the patent law, as the authorities cited fully show. There is no relation between the instruments in the performance of their several functions, and no reciprocal action, no parts used in common."<sup>81</sup>

<sup>81</sup> Acc. *Thacker Heating Co. v. Burtis*, 121 U. S. 286. Here the patentee had combined a fuel reservoir which was well known with a particular

But, after all, practically every device involves juxtaposition of elements. A machine is an aggregation of wheels, shafts, levers, etc. A patentable wash board is a juxtaposition of wood and zinc parts; and so the list might run unendingly. The statement that juxtaposition does not constitute invention is therefore only possible of those groupings in which, as in the Reckendorfer pencil, each element remains individual, in proximity and connection with other elements which also retain their identity. This is called aggregation, as distinct from those combinations of elements which form a patentable device.<sup>82</sup> The distinction is often expressed by saying, as in the Reckendorfer case, "The combination to be patentable must produce a different force or effect, or result in the combined forces or processes, from that given by their separate parts. There must be a new result produced by their union; if not so, it is only an aggregation of separate elements." The same idea is expressed in *Hailes v. Van Wormer*,<sup>83</sup> where the court says: "It must be conceded that a new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the combination, and not a mere aggregate of several results each the complete product of one of the combined elements. Combined results are not necessarily a novel result, nor are they an old result obtained in a new and improved manner. Merely bringing old devices into juxtaposition of stove which was also well known. They had not, however, been used together before. The court held the patent void because invention was absent. The confused reasoning of this case is an illustration of the difficulties encountered in explaining absence of invention by some rule of thumb.

*Hailes v. Van Wormer*, 20 Wall. 353, *Stephenson v. Brooklyn Cross-Town Ry. Co.*, 114 U. S. 149, *Pickering v. McCullough*, 104 U. S. 310, *Palmer v. Corning*, 156 U. S. 342, *Richards v. Chase Elevator Co.*, 159 U. S. 477, *Grinnell Washing-Machine Co. v. E. E. Johnson Co.*, 247 U. S. 426, *National Tube v. Aiken*, 163 Fed. 254, *James Spear Stove Co. v. Kelsey Heating Co.*, 158 Fed. 622; *Fort Pitt Supply Co. v. Ireland & Matthews Mfg. Co.*, 232 Fed. 871.

<sup>82</sup> *Loom Co. v. Higgins*, 105 U. S. 580.

<sup>83</sup> 20 Wall. 353.

tion, and there allowing each to work out its own effect without the production of something novel, is not invention. No one by bringing together several old devices without producing a new and useful result the joint product of the elements of the combination and something more than an aggregate of old results, can acquire a right to prevent others from using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others, in combination."

The real difficulty is in determining just when the juxtaposition of parts does produce a cooperative result such that the presence of invention is not *prima facie* absent. If the parts actively co-operate so that there is mutual or reciprocal action and interaction of some kind, the device is then *ipso facto* a combination instead of aggregation and has possibilities of patentability.<sup>84</sup>

But while this is the thought frequently expressed, it is a

<sup>84</sup> Pickering v. McCullough, 104 U. S. 310, 318. "In Nimmo's apparatus, it is perfectly clear that all the elements of the combination are old, and that each operates only in the old way. Beyond the separate and well-known results produced by them severally, no one of them contributes to the combined result any new feature; no one of them adds to the combination anything more than its separate independent effect; no one of them gives any additional efficiency to the others, or changes in any way the mode or result of its action. In a patentable combination of old elements, all the constituents must so enter into it as that each qualifies every other; to draw an illustration from another branch of the law, they must be joint tenants of the domain of the invention, seized each of every part *per my et per tout*, and not mere tenants in common, with separate interests and estates. It must form either a new machine of a distinct character and function, or produce a result due to the joint and co-operating action of all the elements, and which is not the mere adding together of separate contributions. Otherwise it is only a mechanical juxtaposition, and not a vital union. In the case of this apparatus the mould was known, and a rib or former was known, and their use in combination was known. Salvetat described a rib, so arranged that, after it had performed its function in shaping the interior of the vessel, it could be withdrawn, through the top of the vessel, so as not to produce injury by striking against its side. This rib Nimmo substituted for the old one in the same combination. And this is the whole of the invention. Upon the principle stated, there is no invention in it."

fact that mere static juxtaposition has been held so to co-operate in producing a new result as to be indicative of invention, and therefore patentable. In *Hailes v. Van Wormer*, just quoted from, the court assumed the validity of a patent covering the simple juxtaposition in a stove of a fire-pot, coal magazine, revertible flues, etc., all of which by themselves were old, but had never been so grouped together. In the case of *The Barbed Wire Patent*<sup>85</sup> the court sustained the patent, which was directly attacked, despite the fact that the device was nothing more than the collocation—aggregation, in its non-technical sense—of fence wires twisted together and a short transverse wire coiled at its central portion about one of the twisted strands, so that its ends would project therefrom to form the well known barb. The court called it a combination, without discussing its differentiation from unpatentable aggregation.<sup>86</sup>

*Combination.* The word “combination” ordinarily means any grouping of parts, as for instance, the combining of parts of a stove into one whole or the placing together of wheels, shafts, etc., in combination to form a single machine. It is so used generally in the patent law, and in this sense we have just discussed it. But it has also a technical use in patent law. In this technical sense “combination” is used of a collection or arrangement of parts which do not themselves entirely submerge their identity in the new device. In a machine, for instance, the identity of the individual wheels and other parts is entirely lost; they go to make up the machine which is itself looked upon as the only entity. The well known *Seldon patent*,<sup>87</sup> however, is an illustration of a “combination” in the technical usage. It covered the collection in an automobile, of engine, driving mechanism, and carriage. While these parts all went to make up the whole, yet their individual identity was not lost as in the case of the parts of a single machine.<sup>88</sup> Out

<sup>85</sup> 143 U. S. 275.

<sup>86</sup> Juxtaposition of old elements in a rubber tire held invention, *Diamond Rubber Tire Co. v. Consolidated R. T. Co.*, 220 U. S. 428; *Rubber Tire Co. v. Goodyear Co.*, 232 U. S. 413.

<sup>87</sup> *Col. Motor Car Co. v. Duerr*, 184 Fed. 893.

<sup>88</sup> *Gould v. Rees*, 15 Wall. 187. *Barrett v. Hall*, 1 Mason 447, 474.



of this use of combination grow such rules as that "the substitution of equivalents is not such invention as will sustain a patent,"<sup>89</sup> and others having to do especially with changes in a combination.<sup>90</sup> The fact that the combination consists of old and well known elements does not necessarily deprive it of patentability.<sup>91</sup>

*Mere change of form.* Another holding, frequently expressed as a rule, is that mere change of form does not constitute invention. The difficulty with this as a "rule" is that it is even more indefinite than the generalities just discussed. It leaves still open the question, what is *mere* change of form. Practically all invention involves change of form in some way, if only the change, for instance, from bulk steel to that of a finished tool. Even if the rule be confined to change of physical appearance without change of use or purpose there is conflict. In harmony with the "rule" are such cases as *Glue Co. v. Upton*.<sup>92</sup> Here the invention alleged was that "of glue comminuted to small particles of practically uniform size, as distinguished from the glue in angular flakes hitherto known." It was claimed for this form of glue, which was called "instantaneous and comminuted glue," that less preparation for use was required, that it could be more readily put up in packages as there were no large sharp edged flakes to cut the container, and that it had a more pleasing appearance. "It thus appears," said the court, "that the invention claimed is not any new combination of ingredients, creating a different product, or any new mechanical means by which a desirable change in the form of a common article of commerce is obtained; but it consists only of the ordinary flake glue reduced to small particles by mechanical division. The advantages from such division consist in its more ready and rapid solution, its greater con-

<sup>89</sup> *Smith v. Nichols*, 21 Wall. 112.

<sup>90</sup> *Burt v. Ivory*, 133 U. S. 349, *McClain v. Ortmeyer*, 141 U. S. 419. *Moody v. Fiske*, 2 Mason 112.

<sup>91</sup> *Loom Co. v. Higgins*, 105 U. S. 580, *Expanded Metal Co. v. Bradford*, 214 U. S. 366; *Rubber Tire Co. v. Goodyear Co.*, 232 U. S. 413; *Seim v. Hurd*, 232 U. S. 420. *Hay v. Heath Cycle Co.*, 71 Fed. 411, *Steiner v. Voegtly Hardware Co.*, 178 Fed. 831.

<sup>92</sup> 97 U. S. 3.

venience for packing and retailing, and its whiter appearance and enhanced salableness. The whole claim is to an old article of commerce in a state of mechanical division greater than previously used, but unchanged in composition and properties; and the benefits arising from the increased division are such as appertain to every soluble substance when divided into minute particles. A distinction must be observed between a new article of commerce and a new article which, as such, is patentable. Any change in form from a previous condition may render the article new in commerce; as powdered sugar is a different article in commerce from loaf sugar, and ground coffee is a different article in commerce from coffee in the berry. But to render the article new in the sense of the patent law, it must be more or less efficacious, or possess new properties by a combination with other ingredients; not from a mere change of form produced by a mechanical division."<sup>93</sup>

The inexactness of stating the result of such holdings as a *rule* is, however, shown by the case of *Winans v. Denmead*.<sup>94</sup> This concerned the validity of a patent for a body for railroad freight cars. The bodies in use before the patent had been rectangular. Transportation of such freight as coal and ore in these cars caused a great lateral pressure upon the body of the car and a consequent tendency to distortion. To overcome this, so much bracing and stiffening was necessary that the cars were capable of transporting a load of not more than their own weight. The patentee had conceived the idea of building the body in the form of a frustrum of a cone, inverted. This so far did away with the tendency to distortion

<sup>93</sup> *King v. Gallum*, 109 U. S. 99. Validity was denied to a patent for the idea of putting plastering hair into smaller bales than had been heretofore known. The court did not refer to "change of form" at all. The Patent Act of Feb. 21, 1793, §2, provided specifically, "It is hereby enacted and declared, that simply changing the form or proportions of any machine, or composition of matter in any degree, shall not be deemed a discovery." *Belding Mfg. Co. v. Corn Planter Co.*, 152 U. S. 100, *Lowell v. Lewis*, 1 Mason 182, 189; "I say substantially the same invention, because a mere change of form or proportions of any machine cannot, *per se*, be deemed a new invention."

<sup>94</sup> 15 How. 330.

as to permit elimination of a great deal of lateral bracing. The cars could, in consequence, carry a load of considerably more than their own weight, and they had other advantages over the old rectangular ones. In its decision the court recognized that "under our law a patent can not be granted merely for a change of form." But it held that the production of the patentee involved more than a change of form and was, in fact, an invention. The reasoning by which the decision is reached is, at least, not quite logically clear, on account of the assumed necessity for holding that the change from a rectangular container to a conical one was not merely a change of form. The truth is, it ~~was~~ merely a change of form, but it required, according to the decision, the mental act of invention to conceive of that change.

*Application of old device to new purpose.* It often occurs that patentability is claimed for an invention, even when the substantial embodiment of the means conceived does not differ at all, in form, from other known embodiments of means. The quality of invention is alleged to lie in the conception of using such known substantial means for a new purpose; to accomplish some result not before reached by that means.

Just when this application of an old and known device to the accomplishment of an end for which it has not before been used amounts to invention, is a question which has greatly troubled the courts. They are reasonably agreed that if the new use is "analogous" to the old one, no invention is involved, but that there may be invention in the application of an old device to a new and "non-analogous" end. The issue therefore, when the use only is changed and not the device, is whether the purpose or use is so like the known use that no inventive genius was required for its conception. One of the clearest cases of "analogous" use is that considered in *Pennsylvania Ry. Co. v. Locomotive, etc. Co.*<sup>95</sup> Here the patentee claimed to have invented the use of a certain swivel truck, which allowed a slight amount of lateral motion, under railroad engines. Exactly the same form of truck, which was well

<sup>95</sup> 110 U. S. 490.

known, had already been used under railroad cars, for the same purpose, but it had never been placed under an engine until the patentee conceived the idea. The patent was held invalid on the ground that its subject matter had required no invention. The court said, "It is settled by many decisions of this court, which it is unnecessary to quote from or refer to in detail, that the application of an old process or machine to a similar or analogous subject, with no change in the manner of application, and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated."

In *Grant v. Walter*<sup>96</sup> the patentee had discovered that silk wound in a peculiar form of skein could be dyed in the skein. Theretofore it had been dyed while in much smaller skeins and then re-wound. The patentee's discovery effectuated considerable saving in time and effort. What he claimed was his particular form of skein when made up of silk ready for dyeing. Practically the same form of skein was already used for silk from which the gum was to be boiled off, and which was not, therefore, ready for the dye. The court was in much doubt as to just for what the patent purported to be but finally decided apparently that it was for the skein. It therefore held that, "The most that can be said of this Grant patent is that it is a discovery of a new use for an old device which does not involve patentability. However useful the nature of the new use to which the skein is sought to be confined by the disclaimer, compared with the former uses to which the old skein was applied at the date of the improvement, it forms only an analogous or double use, or one so cognate and similar to the uses and purposes of the former cross-reeled and laced skein as not to involve anything more than mechanical skill, and does not constitute invention, as is well settled by authorities already referred to."<sup>97</sup>

<sup>96</sup> 148 U. S. 547.

<sup>97</sup> *Jones v. Cyphers*, 126 Fed. 753. *Bowman v. DeGrauw*, 60 Fed. 907, *Brown v. Crane Co.*, 133 Fed. 235. *Mellon v. Wm. C. Gregg & Co.*, 137 Fed. 68, 77, "It is only when the new use is so recondite and remote from that to which the old device has been applied, or for which it was con-

On the other hand, in *Bary v. Harpoon Castor Mfg. Co.*,<sup>98</sup> a device consisting of a spherically convex piece of metal, having sharp projections vertical to its plane, on the concave side, and intended to be fastened to the ends of table legs, etc., by driving the projections into the wood, the whole being to supply the place of a "castor," was held patentable despite the fact that an almost precisely similar article had previously been used for ornamentation of Mexican saddles. The court said, "In order to test the question let us assume that the exact structure shown in the patent to Alleyn was taken from the shield of a Scottish Highlander or the war bonnet of a North American Indian 300 years ago, and was on exhibition in some museum here. Would it not involve invention to put it to use as a substitute for the elaborate, clumsy and expensive castors now in use? We think it would."<sup>99</sup>

These cases represent extremes on either side of the line. Between them is the debatable ground. Whether the new use is analogous, mere unpatentable "double use," or is a new and novel one involving invention can not be determined by any rule of thumb. All that is possible is, "as a result of the authorities upon this subject, it may be said that, if the new use be so nearly analogous to the former one, that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use, but if the relations between them be remote, and especially if the use of the old device produce a new result, it *may* at least involve an exercise of the inventive faculty. Much, however, must still depend upon the nature of the changes required to adapt the device to its new use."

*Mechanical skill.* All of these decisions and "rules," and many others, may be summed up in the proposition that *no*

ceived, that its application to the new use would not occur to the mind of the ordinary mechanic, skilled in the art, seeking to devise means to perform the desired function, with the old machine or combination present before him, that its conception rises to the dignity of invention."

<sup>98</sup> 209 Fed. 207.

<sup>99</sup> Acc. *DuBois v. Kirk*, 158 U. S. 58; Here the presence of inventive genius was determined by the theretofore unsatisfied need. *Western Elec. Co. v. La Rue*, 139 U. S. 601.

change, from what already is known, amounts to invention, unless it is something more than any capable mechanic would have accomplished when faced by the need for it.<sup>100</sup> It is just the difficulty of determining whether a production has proceeded out of something more than mechanical skill which makes patent law so inexact as a science. "The task of distinguishing between invention and the power of adaptation possessed by a skillful mechanic is not always an easy one, nor have the courts apparently succeeded in formulating a proposition to cover all cases. While the statutes require that a patent, to be valid, must disclose invention and novelty, yet the degree or amount of invention required is not prescribed, and, from the nature of the case, can not be."<sup>101</sup> The various so called rules above referred to are merely the attempts of courts to formulate something by which the difficulty of this decision can be lessened. But it arises afresh in each case, and can be helped by precedents only to the most meagre extent.

In the great bulk of cases in which a patent has been held void for want of the quality of invention in the device set forth, the court has not even attempted to give reasons for its finding. It has simply said something to the effect that "In view of the prior art . . . it can not be claimed that the com-

<sup>100</sup> *Hollister v. Benedict Mfg. Co.*, 113 U. S. 59, *Smith v. Nichols*, 21 Wall., 112, 118, *Reckendorfer v. Faber*, 92 U. S. 347, *Blandy v. Griffith*, Fed. Cas. No. 1529, 3 Fisher 609. *Blake v. Stafford*, 6 Blatch. 195, 205. *Hollister v. Benedict Mfg. Co.*, supra, "As soon as the mischief became apparent, and the remedy was seriously and systematically studied by those competent to deal with the subject, the present regulation was promptly suggested and adopted, just as a skilled mechanic, witnessing the performance of a machine, inadequate, by reason of some defect, to accomplish the object for which it had been designed, by the application of his common knowledge and experience, perceives the reason of the failure, and supplies what is obviously wanting. It is but the display of the expected skill of the calling, and involves only the exercise of the ordinary faculties of reasoning upon the materials supplied by a special knowledge, and the facility of manipulation which results from its habitual and intelligent practice; and is in no sense the creative work of that inventive faculty which it is the purpose of the Constitution and the patent laws to encourage and reward."

<sup>101</sup> *Hillborn v. Hale, etc. Mfg. Co.*, 69 Fed. 958, 963.

bination in question exhibits such novelty as amounts to invention."<sup>102</sup>

The question of ability of a mechanic to make a device on first call is never involved when the device is not a mere development of existing forms, but is essentially unique. In such case, the idea of means is indubitably a creation of the mind and could not be a mere skillful change of something existing.

To understand fully the difference between mere mechanical skill and invention, and to reconcile many seemingly adverse holdings, one must remember the existence of the "idea" as well as the substantial "means" in invention. Many a device covered by a valid patent, could have been produced by any skillful mechanic who had been told what was wanted. Often, as is evident in the range of equivalents against which an invention is protected, other devices, totally unlike in substantial form would be quite as efficient means. The thing that is protected, that is really patented, and hence is really the invention, is the *idea* of accomplishing the result by the described means or its equivalent. It is only when this *idea of means* could have been thought of by a skillful mechanic that the concept is lacking in inventive genius, not when the substantially operating part, that is, the means itself, could have been devised by one informed of the idea.<sup>103</sup>

<sup>102</sup> *Fougeres v. Jones*, 66 Fed. 316.

<sup>103</sup> The foregoing discussion has been concerned chiefly with the fact that mere physical difference does not indicate invention, but the converse is equally true and mere physical similarity does not preclude it. This is apparent from the cases involving the new use of an old device. In *Brown v. Puget Sound Reduction Co.*, 110 Fed. 383, the court said, "The Holthoff-Wethey furnace, according to the description of it in the specifications of the patent and the model exhibited to the court, is double decked, like the Brown furnace, and closely resembles it in other particulars, to such an extent that in a mere casual observer would probably create an impression that the chief difference between the two is in the superior construction of the Holthoff-Wethey furnace; but to reach a just determination of the rights of the parties a close examination of the two patents is necessary." They found such actual difference as to warrant a decision of non-infringement.

Neither does similarity of name preclude invention. *Machine Co. v. Murphy*, 97 U. S. 120, 125.

Various matters, wholly extraneous to the substance of the contrivance itself, have been declared, recurrently, to have influenced the court in its finding upon the question of invention. Theoretically perhaps, the character of an alleged invention should be predicated solely upon the peculiarities by which the idea is manifested. But inasmuch as the determination is not directed by any definite limits, and there can be no scientific exactness, it is inevitable that the opinion, on which the determination actually rests, should be more or less affected by other matters than simple contemplation of the concept itself. The most obvious and recurrent of these extraneous influences are here set out.

*The length of time required in evolving the alleged invention*, it may be said at once, does not indicate whether it is in fact invention or not. "Originality is the test of invention. If that is successfully exercised, its product is protected; and it is as immaterial whether it is displayed in greater or less degree, or whether the new idea revealed itself to the inventor by a sudden flash of thought, or slowly dawned on his mind after groping his way through many and dubious experiments."<sup>104</sup> The production of the housewife who in a flash of inspiration sees a simpler way of performing a daily task, and that of an Edison who definitely strives and experiments for the means of accomplishing a certain result, may be equally entitled to the protection of a patent.<sup>105</sup>

<sup>104</sup> *Blake v. Stafford*, 6 Blatch. 195, 205; *Bowman v. DeGrauw*, 60 Fed. 907. "Nor does it detract from its merit that it is the result of experiment and not the instant and perfect product of inventive power." *Diamond Rubber Co. v. Consolidated Tire Co.*, 220 U. S. 438.

<sup>105</sup> *O'Reilly v. Morse*, 15 How. 62.

The invention was a "flash of genius." *O'Rourke Engineering Co. v. M'Mullen*, 160 Fed. 933, 937. The Goodyear patent for the composition of matter, which alone makes rubber usable for such purposes as tires, has been upheld many times and has been enormously capitalized. The invention was the result of mere accident, however. The inventor in an apparently hopeless search for a composition that would effectuate the purpose accidentally spilled some of a mixture on a hot stove, and the discovery was made.

The patent upheld in *Minerals Separation Co. v. Hyde*, 242 U. S. 261,



*Long existing demand.* The fact, however, that *others* have been searching for a long time for a means of accomplishing a certain result, does affect the question of whether invention is present in the final revelation of such a means. The fact that others engaged in the search were unable to evolve a means, very clearly indicates that its production was beyond the power of mere mechanical skill. This is illustrated in the case of Brunswick-Balke-Collender Co. v. Thum.<sup>108</sup> The patent here involved was for "a bowling alley runway, comprising a descending or downwardly sloped portion, beginning at the pit end of the alley, and returning towards the players' end, and an ascending or up-grade portion connected therewith, and located near the playing end of the alley, which merges into the ball receiving and retaining terminal of the runway, all in such manner, as hereinbefore described, that the balls put into the receiving end of the runway will roll downwardly toward the playing end of the alley, and then, ascending the up grade, or ascending portion of the runway, will pass thence onto the terminal or ball receptacle of the player's end of the returnway without much shock or concussion." The court said, "The improvement consists in an extremely simple, and, it would seem, perfectly obvious, application of common knowledge as to the law of gravitation. Were there nothing in the record but the bare statement of facts above set forth, we would be inclined to concur with the court below in the proposition that: 'Had any skilled mechanic been asked to perfect a structure that should gradually arrest the momentum of the returning ball, an ascent would obviously have been the structure needed.' But in this case, as in the Singer Case, the evidence shows conclusively, and, indeed, without contradiction, followed from an unexpected discovery. The inventors were searching for the minimum amount of oil that could be used in a certain process for separating minerals from the undesirable quartz, or rocky material, when crushed. They observed that when this apparent minimum had been reached and the separation had ceased, a further reduction in the amount of oily substances caused separation to begin again. Investigation of this startling result disclosed the reason and the patent subsequently obtained for it was upheld.

<sup>108</sup> 111 Fed. 904.

that this very demand for an arrester of the returning ball was before skilled mechanics for many years, and yet no one before Reisky hit upon the device which now seems so obvious. The defects of the old system were serious. The time required for the return of the ball was not uniform, and in its entirety was slow. If started with a shove, it came more quickly, but, if merely placed in the trough, it made but slow time at the beginning; and the player, desirous often of using a particular ball already played became impatient. Whether started with a shove or not, its velocity steadily increased, and it was running at its highest speed when it came home against the post or other ball at rest at the player's end. Moreover, this speed was generally so high that the surfaces of the balls were broken or chipped, particularly at the vicinity of the finger holes, and thus soon became unfit for use. This damage put the alley keeper to considerable expense in keeping the balls in fair condition, or in getting new balls, and also resulted in great dissatisfaction among the players at the damaged condition of the balls. There was also constant danger of an incautious player having his hand among the homed balls when the returning ball smashed in. The evidence shows that this condition of affairs had lasted for a long time; the old style of runway persisted for 40 years, during this period there was a constant demand for an improvement which would remedy the difficulty, and to that demand the skilled mechanic who put up bowling alleys responded. Various devices were contrived, —all of them, save one, independent of the trough itself. Suspended shot bags of various shapes, some with appendages in the shape of patches or belts, weighted sections of hose pipe, pieces of stiff leather attached shutter-wise across the trough, pivoted levers having a piston entering a dashpot, are among the devices independent of the trough. It was also sought to retard the ball by successive transverse pieces of rope at the sides or bottom of the trough. So many of these devices are shown that it is apparent that the skilled mechanics were for years trying to find some way to properly retard the ball, and the proof conclusively shows that all of them were unsatis-

factory. Not one of them secured retardation by a change of grade of the trough itself, until the patentee disclosed his simple method, which has so commended itself, that now, within three years after the issuance of the patent, 90 per cent of the existing bowling alleys have the new style, or Reisky, returnways. In the face of this evidence, we cannot hold that his improvement is devoid of patentable invention."

Precisely this same doctrine has been declared by the Supreme Court in the case of *Krementz v. Cottle Co.*<sup>109</sup> It had been claimed that the patent, which was for an improved collar button, formed out of a single piece of sheet metal, was anticipated by other devices to the extent that, as the lower court said, "any competent mechanic, versed in the manufacture of hollow sheet-metal articles, having before him the patents of Stokes and Keats, could have made these improvements and modifications, without exercising invention, and by applying the ordinary skill of the calling." But the upper court responded that, "The view of the court below, that Krementz's step in the art was one obvious to any skilled mechanic, is negatived by the conduct of Cottle, the president of the defendant company. He was himself a patentee under letters granted April 16, 1878, for an improvement in the construction of collar and sleeve buttons, and put in evidence in this case. In his specifications he speaks of the disadvantages of what he calls 'the common practice to make the head, back and post of collar and sleeve buttons separate, and to unite them by solder.' His improvement was to form a button of two pieces; the post and base forming one piece, and then soldering to the post the head of the button as the other piece. Yet, skilled as he was, and with his attention specially turned to the subject, he failed to see, what Krementz afterwards saw, that a button might be made of one continuous sheet of metal, wholly dispensing with solder, of an improved shape, of increased strength, and requiring less

<sup>109</sup> 148 U. S. 556.

material."<sup>111</sup> The court therefore held the device to be the product of invention rather than mere mechanical skill.

*Immediate acceptance by public.* Another circumstance closely akin to the fact that a device has been long sought for, is the fact that when the alleged invention was offered to the public it was immediately accepted and welcomed. The theory on which this influence is based is that immediate acceptance indicates an existing demand on the part of the public, which was unsatisfied until the advent of the device in question. If the device might have been produced by mere mechanical skill, the public need would, in the foregoing theory, have called it forth at once instead of remaining unsatisfied. This has shown marked and admitted influence upon the courts in inducing them to find the presence of invention in the device. So closely allied is it to the circumstance of long search that reference to both is usually found conjoined, and indeed, confused.<sup>112</sup> In the Krementz case just quoted from, the court in reasoning to its conclusion of patentability, further said, "It was also made to appear that the advantages of the new button were at once recognized by the trade and by the public, and that very large quantities have been sold.

"The argument drawn from the commercial success of a

<sup>111</sup> *Davis v. Parkman* 71 Fed. 961. A claim of invention in turning the foot-rest of a row-boat upward at an angle of 45° was upheld on the ground that "various rude and unsatisfactory expedients had been used by many persons for the purpose of accomplishing what Davis accomplished by the simple expedient of turning up the foot-board, that this occurred to none of them, and that after it had been suggested by him it came into general use." *American Gramophone Co. v. Universal*, 151 Fed. 595. *McFarland v. Spencer*, 23 Fed. 150. *O'Rourke Engineering Co. v. M'Mullen*, 160 Fed. 933, "Where the court has to deal with a device which has achieved undisputed success and accomplished a result never attained before, which is new, useful and in large demand it is generally safe to conclude that the man who made it is an inventor." In one case, at least, the fact of a long existing desire for a device was held to be evidence of stupidity on the part of the public concerned, rather than of genius on the part of him who answered the call. *Butler v. Steckel*, 27 Fed. 219.

<sup>112</sup> *Consol. Car Heating Co. v. American, etc. Corp.* 82 Fed. 993.

patented article is not always to be relied on. Other causes, such as the enterprise of the vendors, and the resort to lavish expenditures in advertising, may cooperate to promote a large marketable demand. Yet, as was well said by Mr. Justice Brown, in the case of *Consolidated Brake-Shoe Co. v. Detroit Co.*, 47 Fed. Rep. 894, 'When the other facts in the case leave the question of invention in doubt, the fact that the device has gone into general use and has displaced other devices which had previously been employed for analogous uses, is sufficient to turn the scale in favor of the existence of invention.'

"*Loom Co. v. Higgins*, 105 U. S. 580, 591, was a case where the patented device consisted in a slight modification of existing mechanism, and it was contended that this slight change did not constitute a patentable invention; but this view did not prevail, the court saying: 'It is further argued, however, that supposing the devices to be sufficiently described, they do not show any invention; and that the combination set forth in the fifth claim is a mere aggregation of old devices already well known; and therefore it is not patentable. This argument would be sound if the combination claimed by Webster was an obvious one for attaining the advantages proposed,—one which would occur to any mechanic skilled in the art. But it is plain from the evidence, and from the very fact that it was not sooner adopted and used, that it did not for years occur in this light to even the most skilful persons. It may have been under their very eyes; they may almost be said to have stumbled over it; but they certainly failed to see it, to estimate its value, and to bring it into notice. Who was the first to see it, to understand its value, to give it shape and form, to bring it into notice and urge its adoption, is a question to which we shall shortly give our attention. At this point we are constrained to say that we cannot yield our assent to the argument, that the combination of the different parts or elements for attaining the object in view was so obvious as to merit no title to invention. Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with

inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result never attained before, it is evidence of invention. It was certainly a new and useful result to make a loom produce fifty yards a day when it never before had produced more than forty; and we think that the combination of elements by which this was effected, even if those elements were separately known before, was invention sufficient to form the basis of a patent.' ”<sup>113</sup>

But the utility of a device can not be relied on absolutely as indicative of invention. It may not at all indicate a need that was unsatisfied. The demand may have arisen out of recent changes in conditions, and have been at once supplied. An illustration of this is seen in the case of Falk Mfg. Co.

<sup>113</sup> *Hollister v. Benedict Mfg. Co.*, 113 U. S. 59, 72. “Such an increased utility, beyond what had been attained by devices previously in use, in cases of doubt, is usually regarded as determining the question of invention.” *Barbed Wire Patent*, 143 U. S. 275, “There are many instances in the reported decisions of this court where a monopoly has been sustained in favor of the last of a series of inventors all of whom were groping to attain a certain result, which only the last one of the number seemed able to grasp.” *Expanded Metal Co. v. Bradford*, 214 U. S. 366, 381; *Adams v. Howard*, 19 Fed. 317, 318, “The defense that the patent is anticipated by the lantern described in the prior application for a patent by Anthony M. Duburn is not tenable, because there is no evidence, except his application for a patent, that he ever invented such a lantern. It was conceded by his solicitors upon the application that the model accompanying his application would not answer for use as a lantern, although it was sufficient to illustrate the construction of the device; and the examiner in charge condemned the model as inoperative. As there is no evidence in the case to show that such a lantern as was described in the application and illustrated by the model was ever actually constructed by Duburn, sufficient does not appear to defeat the novelty of Irwin’s invention.” *American Caramel Co. v. Thos. Mills & Bro.*, 149 Fed. 743; *Carnegie Steel Co. v. Cambria Iron Company*, 185 U. S. 403, 429; *Magowan v. New York Belting Co.*, 141 U. S. 332; *Diamond Rubber Co. v. Consolidated Tire Co.*, 220 U. S. 428, “It (the law) regards a change as evidence of novelty, the acceptance and utility of a change as a further evidence, even as demonstration.” “Litigation shows and measures the existence of the public demand for its use.”

v. Missouri R. R. Co.<sup>114</sup> The device here involved was for welding steel rail-joints, and it varied but little from other well-known devices. It was argued that the patent was valid, despite this resemblance, because the extent to which the device was used, especially for welding electric streetcar rails, proved its character as an invention. The court held however, that the utility was due to the fact that electric street car rails had come into general use only recently, and was not due to the fact that the device filled a long-felt want.<sup>115</sup>

A warning against the overvaluation of utility as an indication of invention, has been issued by the Supreme Court, which says,<sup>116</sup> "Counsel for the plaintiff in the case under consideration has argued most earnestly that the only practical test of invention is the effect of the device upon the useful arts—in other words, that utility is the sole test of invention, and, inferentially at least, that the utility of a device is conclusively proven by the extent to which it has gone into general use. He cited in this connection certain English cases which go far to support his contention. These cases, however, must not be construed in such way as to control the language of our statute, which limits the benefits of patent laws to things which are new as well as useful. By the common law of England, an importer—the person who introduced into the kingdom from any foreign country any useful manufacture—was as much entitled to a monopoly as if he

<sup>114</sup> 103 Fed. 295.

<sup>115</sup> The court said, of the general topic, "The utility of a machine, article of manufacture, process, or an improvement thereof, is only allowed to turn the scale in favor of its patentability in those instances where the question whether the inventive faculty has been exercised is balanced with doubt and uncertainty. In such cases the conceded utility of a patented machine or process, or an improvement thereof, may well be allowed to sustain the patent; but conceded utility can not be permitted to have that effect in a case like the one in hand, where the process which is described and claimed as new is clearly old." *Duer v. Corbin Lock Co.*, 149 U. S. 216, "The mere fact that a patented article is popular and meets with large and increasing sales is unimportant when the alleged invention is clearly without patentable novelty."

<sup>116</sup> *McClain v. Ortmyer*, 141 U. S. 419, 427.

had invented it. It is evident that these principles have no application to the patent system of the United States, whose beneficence is strictly limited to the invention of what is new and useful, and that the English cases construing even their more recent acts, must be received with some qualification. That the extent to which a patented device has gone into use is an unsafe criterion even of its actual utility, is evident from the fact that the general introduction of manufactured articles is as often effected by extensive and judicious advertising, activity in putting the goods upon the market and large commissions to dealers, as by the intrinsic merit of the articles themselves. The popularity of a proprietary medicine, for instance, would be an unsafe criterion of its real value, since it is a notorious fact that the extent to which such preparations are sold is very largely dependent upon the liberality with which they are advertised, and the attractive manner in which they are put up and exposed to the eye of the purchaser. If the generality of sales were made the test of patentability, it would result that a person by securing a patent upon some trifling variation from previously known methods might, by energy in pushing sales or by superiority in finishing or decorating his goods, drive competitors out of the market and secure a practical monopoly, without in fact having made the slightest contribution of value to the useful arts. The very case under consideration is not barren of testimony that the great success of the McClain pads and clasping hooks, a large demand for which seems to have arisen and increased year by year, is due, partly at least, to the fact that he was the only one who made the manufacture of sweat pads a specialty, that he made them of a superior quality, advertised them in the most extensive and attractive manner, and adopted means of pushing them upon the market, and thereby largely increased the extent of their sales. Indeed it is impossible from this testimony to say how far the large sales of these pads is due to their superiority to others, or to the energy with which they were forced upon the market. While this court has held in a number of cases, even so late as *Magowan v. The New York Belting and Packing Co.*, *ante*, 332, decided at the present term,



that in a doubtful case the fact that a patented article had gone into general use is evidence of its utility, it is not conclusive even of that—much less of its patentable novelty.”

The weight of such a factor is therefore absolutely indeterminate. Indeed, it is not altogether possible to delimit the extent to which utility and public appreciation of a device actually influence the courts to declare the device an invention, from a mere judicial use of such matters to bolster up an independent conclusion of patentability. A recent case well indicates the difference in effect of such a factor.<sup>117</sup> The Circuit Court of Appeals<sup>118</sup> held the device to be lacking in inventive novelty and reversed the decision of the District Court, which had sustained the patent. This court in deciding invention to be lacking, said, “The decision of the court below appears to have been largely influenced by the consideration that the appellees’ patent had gone into extensive and successful use. The fact that a patented device or process has gone into extensive and successful use is often of value in determining the question of invention and patentability. It is referred to for the purpose of turning the scales in cases of grave doubt. It is of no value whatever where the question of the invention or patentability is free from doubt, and in any case its value depends largely upon the causes which produced it. It is often due to business ability in manufacturing, exploiting, and advertising, and to the fact that prior conditions have not stimulated development. The appellees’ process, originally patented in Great Britain, has been installed in Australia, Sweden, Finland, Chile, and Wales, and it is in the process of installation in Cuba. It is not improbable that in those countries the prior art may have been substantially unknown, and it is possible that the appellees’ success there is referable to the fact alleged in the bill.” The Supreme Court in turn reversed the Circuit Court of appeals, and as one reason for so doing said, the process “promptly came into extensive use for the concentration of ores in most if not all of the principal mining countries of the world, notably in the United States, Australia, Sweden,

<sup>117</sup> *Hyde v. Minerals Separation Co.*, 242 U. S. 261.

<sup>118</sup> 214 F. 100.

Chile and Cuba and . . . because of its economy and simplicity it has largely replaced all earlier processes. This of itself is persuasive evidence of that invention which it is the purpose of the patent laws to reward and protect."<sup>110</sup> Thus we find the same fact disregarded by one court and given considerable influence by another, because the *reason why* the device had been so generally adopted was not made clear by counsel but was left to the court's own guess.

*The opinion of experts* is supposed to have considerable weight in the court's conclusion. Their testimony may be heard by the court and usually is heard as a matter of course. The expert's true function is to explain and interpret technical matters, and generally to elucidate the principles of the patented contrivance, and their difference from or resemblance to those of other contrivances. But the expert may also be asked his opinion upon the ultimate issue as to whether the particular device differs from others in such a way as to have resulted from inventive genius.<sup>110a</sup>

<sup>110</sup> Doig v. Morgan Mach. Co., 59 C. C. A. 616; Grant v. Walter, 148 U. S. 547; Keystone Mfg. Co. v. Adams, 151 U. S. 139, "The argument drawn from the commercial success of a patented article is not always to be relied upon. Other causes such as the enterprise of the vendors and the resort to large expenditures in advertising, may cooperate to promote a large marketable demand." Apple v. Am. Shoe Mach. Co. 232 Fed. 603.

<sup>110a</sup> If it be true that the presence or absence of "invention" is a question of "law" for the court, rather than of fact for the jury, a mere witness ought not to be permitted to give his opinion in regard to it. It is a conclusion for the judicial mind alone, based on all the evidentiary facts of the case. Even if the question of invention be treated as one of fact rather than of law, it is nevertheless the ultimate issue in the case. An answer to it is not a basis for the decision; it is the decision itself. To ask a witness his opinion as to the presence or absence of invention in the concept in question, would be to ask him his opinion as to how the court should decide the case, or what verdict the jury should bring in. There is some conflict of authority, in cases relating to other branches of law, as to whether such a question, whose answer "usurps the function of the jury" is permissible. On the whole, it seems to be proper. *Chamberlayne*, Evidence sec. 1820; *Wigmore on Evidence*, sec. 1921.

The point seems never to have been passed upon precisely in relation to inventions, but it is clear that courts do in fact admit the opinions of

*The personality and mental equipment of the particular judge by whom the issue is decided undoubtedly has influence upon the answer. A judge who can not drive a nail, to whom a mechanical toy is an inexplicable mystery, and chemistry incomprehensible, will naturally tend to find invention in that which a more technically trained judge would recognize as mere mechanical skill. The reports show that certain judges experts in regard to the presence or absence of invention. Ideal Stopper Co. v. Crown Cork, etc. Co. 131 Fed. 244.*

The opinion of experts in regard to the facts from which the ultimate conclusion of invention or non-invention is to be derived may of course be given. Thus, witnesses may point out and explain the features and characteristics of the device which is described in the patent, and may state the extent to which any or all of these were already known before the alleged invention. They may also point out to the court or jury the essential as well as formal similarity and difference between an alleged invention and the already known art, or between two particular devices. "Experts may be examined to explain terms of art, and the state of the art, at any given time. They may explain to the court and jury the machines, models, or drawings, exhibited. They may point out the difference or identity of the mechanical devices involved in their construction. The maxim of '*cuique in sua arte credum*' permits them to be examined to questions of art or science peculiar to their trade or profession; but professors or mechanics can not be received to prove to the court or jury what is the proper or legal construction of any instrument of writing." *Winans v. New York & E. R. Co.* 21 How. 88, 100. *Commercial Mfg. Co. v. Fairbank Co.*, 135 U. S. 176, 187. In *National Cash Reg. Co. v. Leland*, 94 Fed. 502, objection was raised because an expert was asked to say whether a certain part of one machine was an "equivalent" of a part of another machine. The court held the question proper, saying, "The mechanism . . . was complicated, and an ordinary man unskilled in mechanics, might well have failed to understand it completely. It was proper, therefore, that a witness skilled in mechanics and understanding the term 'mechanical equivalent,' should be allowed to express to the jury his opinion of the relation of one machine to the other, subject to further direct examination and to cross examination, in order to bring out more clearly the grounds of his opinion." But compare *Osgood Dredge Co. v. Metropolitan etc. Co.*, 75 Fed. 670; *Jackson v. Allen*, 120 Mass. 64.

So, also, experts may be asked whether or not the patent does reveal anything definite and, if so, just what it is. As stated in the text a patent which does not describe some real, comprehensible concept is a nullity, but the description need not be such as is clear to an untrained person. If it

have more often decided in favor of the presence of invention than against it, while others have the more often decided adversely to invention. One judge by whom many decisions have been rendered is well known among his friends to be lacking in any mechanical ability, and to hit the nail on the thumb more often than on the head. To one who has read many of

conveys a clear idea to persons skilled in the particular subject matter, that is sufficient. It follows therefore that experts may be asked whether the description is clear to them, and to translate it, as it were. See *Loom Co. v. Higgins*, 105 U. S. 580. ..

It is not only permissible for experts to give their opinion on these matters, but it is expressly desired by courts in abstruse and technical matters. Thus the court in *Decco Co. v. George E. Gilchrist Co.*, 125 Fed. 293, 296, said, "There may be, and there probably is, an underlying suggestion applicable to both Mann and the present inventors which is fundamental, and which was first put to use in this art by the former. We are lacking, in this case, any explanation of the operation of either device by any scientific person, capable of applying and making clear the laws of pneumatics and hydraulics, each of which sciences are here involved in an occult manner. . . . In the absence of the scientific explanation which we say is not in the record, we are unable to find this proposition proved. "Expert testimony should be introduced when difficult technical questions are involved. *Fay v. Mason*, 127 Fed. 325; *Greene v. Buckley*, 135 Fed. 520.

But courts are, of course, not in any way bound by the testimony and opinions of experts. "The admission of an expert witness is, of course, entitled to weight in the interpretation of technical terms employed in a patent. But the court is not necessarily concluded by such interpretation when other satisfactory evidence is available." *Panzl v. Battle, etc. Co.*, 138 Fed. 48. "Opinions of experts generally, though given under oath, are but arguments in behalf of the side calling them." *Ideal Stopper Co. v. Crown Cork, etc. Co.*, 131 Fed. 244, 249; *Winans v. New York & E. R. R. Co.*, 21 How. 88. Indeed there is occasional judicial suggestion of a feeling of general unreliability in expert testimony. "Unhappily we cannot accept without reservation the opinions of the experts who have been examined as witnesses, for they are necessarily partizans of the side calling them, and essentially advocates, and their opinions are contradictory, and tend to perplex, instead of elucidating, although they appear to be gentlemen of great ability and deserved eminence." *Ideal Stopper Co. v. Crown Cork, etc. Co.*, 131 Fed. 244.

One can find in the opinions suggestions of possible value to witnesses. For instance, "If the expert who is called to testify in such cases would only appreciate that he is not addressing electrical engineers, but laymen,

his decisions it is apparent that he tends to find invention in anything mechanically ingenious, and to be loath to see infringement where there is great material change. On the other hand, another judge whose opinions indicate a highly technical education, is obviously conservative about dignifying a production with the name of invention and very ready in holding an invention to have been infringed. It is, of course, perfectly reasonable that what might seem to an untrained mind impossible of conception by any one but an inspired genius,

and if, when undertaking to describe what some particular patent showed to a man skilled in the art, he would take the specifications and drawings of the patent as his text, instead of some conventional paraphrase of his own devising with its lettering entirely changed, he would materially lighten the labor of the court." *Western Elec. Co. v. Rochester Tel. Co.*, 145 Fed. 41. Again there is pertinent suggestion, in *Béné v. Jeantet*, 129 U. S. 683, in the fact that although one witness testified as a matter of theory that a certain alleged anticipation could not work, the court decided against his proposition because an opposing witness testified that he had made a device according to the description of the alleged anticipation which did actually work.

One frequent fault of expert testimony is its prolixity and volume. In *Columbia Motor Car Co. v. Duerr*, 184 Fed. 893, where the only question involved was whether the modern Otto type of compression gas engine was essentially identical with the old Brayton type, the record of the case filled 36 large volumes. In *Am. Stove Co. v. Cleveland Foundry Co.*, 158 Fed. 978, the court, in commenting upon another long record of expert testimony, said, "As a contest between gentlemen learned in the science of the subject, it might be interesting if one had leisure, though it seems sometimes to run into very attenuated points. This prolixity seems not so much the fault of the witnesses as a mistake of the counsel. It is not the province of witnesses to advocate the cause of the party who calls him, nor to pass upon the questions of law and facts presented by the controversy. Frequently, an expert witness may be of much aid to the court in explaining matters which can only be appreciated and understood by learning higher than the ordinary; but his province is to instruct and not to decide; and even the instruction is of uncertain value when it is colored from standing in the place of a partisan for one of the parties."

The last sentences of this opinion are quite worth noting: "Usually the testimony of one competent witness on each side is enough to insure a full and fair elucidation of what is recondite in the case. The voice of a single teacher is worth more than a confusion of many tongues. And the expense is worse than useless."

would be to a mind skilled in the art, nothing but the mechanical answer to recent call. The reality of the influence of the human factor upon the result is indubitably demonstrated by the very many flatly conflicting decisions upon the same state of facts in different circuits. A number of illustrations of such divergence of personal conclusion are noted in a later section. This influence of the unusual upon the result is suggested by the words of Mr. Justice McKenna, in giving very favorable interpretation to a recent patent. The device covered by it was a gas check for large breech-loading guns. It had to withstand enormous pressure and great heat, yet it was made of tallow and asbestos. "If our purpose was speculative," said he, "not practical, we might pause to wonder how such substances could produce such results under the conditions to which they are subjected, and by wondering we express in a way the quality of the invention."<sup>120</sup> This intrusion of diverse personalities into the decisions in patent cases can not help but make for even greater uncertainty of rights than is inherent in other subjects depending upon opinion. It furnishes at least one argument in favor of a special court for the adjudication of controversies arising under the patent laws.

*The opinion of other courts* of concurrent or lower jurisdiction, even upon the same facts, is not of any compulsory effect upon the court which is trying a case. The statutes contain nothing upon the matter and the courts themselves have never recognized any obligation to follow the decisions of their co-adjudicators.<sup>121</sup> Neither are the decisions of other courts of

<sup>120</sup> *U. S. v. Anciens Etablissements*, 224 U. S. 309, 323. As indicative of the effect of personality on the result, compare the different decisions of an United States court and an English one upon the same facts, in *Haskell Golf Ball Co. v. Perfect, etc. Co.*, 143 Fed. 128, and 25 R. P. C. 194. The decision in the *Selden Patent case*, *Columbia, etc. v. Duerr*, 184 Fed. 893 is often said to have been affected by the court's disapproval of the patentee's unconscionably long delay in procuring his patent.

For discussions of the proposal to establish a special court to try patent cases, see *The Report of the Committee on Pat. Law*, Am. Bar Assn., 1910, 43 *Chi. Legal News*, 63; Editorials, 20 *Green Bag* 203, 22 *Id.* 408; H. K. Wagner, in 21 *Case & Comment* 265.

<sup>121</sup> *Elec. Mfg. Co. v. Edison Elec. Lt. Co.*, 61 Fed. 834; *Rubber Tire Wheel Co. v. Milwaukee Rubber Works Co.*, 154 Fed. 358.

any appreciable practical influence upon the opinion of later judges. There is an occasional dictum to the effect that the decision of other courts, especially of the lower courts which are being reviewed, ought not to be overturned except upon strong evidence.<sup>122</sup> But even these remarks are seldom found, and there is a distressing frequency of patents which have been held valid in one or more jurisdictions and invalid in others, and the number of times a lower court is reversed upon its opinion of the validity or scope of a patent is astonishing.<sup>123</sup> The opinion of a superior court, however, has at least a little weight when another suit on the same patent comes before the lower court.<sup>124</sup>

<sup>122</sup> Elec. Mfg. Co. v. Edison Elec. Lt. Co., 61 Fed. 834; Nat'l Fold'g Box & Paper Co. v. Elsos, 65 Fed. 1001.

<sup>123</sup> As examples see, Am. Stove Co. v. Cleveland Foundry Co., 158 Fed. 978; Consolidated Rubber Tire Co. v. Firestone Tire & Rubber Co., 151 Fed. 237. The patent involved in this case was held valid in four circuits, (91 Fed. 978; 116 Fed. 629; 147 Fed. 739; and one unreported). Two of these decisions were reversed and the patent held invalid by the Circuit Court of Appeals, (Goodyear Tire & Rubber Co. v. Rubber Tire Wheel Co., 116 Fed. 363; Rubber Tire Wheel Co. v. Victor Rubber Tire Co., 123 Fed. 85); and a writ of *certiorari* to review one of these decisions was refused by the Sup. Ct. (Rubber Tire Wheel Co. v. Goodyear Tire & Rubber Co., 187 U. S. 641). The circuit court of appeals in the principal case sustained the validity of the patent. Its validity was declared by the Supreme Court in Diamond Rubber Co. v. Consolidated Rubber Tire Co., 220 U. S. 428, Approved, Rubber Tire Co. v. Goodyear Co., 232 U. S. 413; Mayor of N. Y. v. American Cable Ry. Co., 60 Fed. 1016; Fireball Gas Co. v. Commercial Acetylene Co., 239 U. S. 156; 168. Compare also the conflicting opinions as to who was the real inventor, in 229 Fed. 730 and 234 Fed. 343.

<sup>124</sup> Anderson Foundry & Mach. Co. v. Potts, 108 Fed. 379; Rawson v. Western Sand Blast Co., 118 Fed. 575; Rubber Tire Wheel Co. v. Victor Rubber Tire Co., 123 Fed. 85; Cramer v. Singer Mfg. Co., 147 Fed. 917.

When the issue concerns not the validity of a patent or its infringement but merely the propriety of a temporary injunction it would seem that final adjudications of other courts ought to have considerable influence. That they do so, is stated in Elec. Mfg. Co. v. Edison Elec. Lt. Co., 61 Fed. 834, 836, "It may be difficult to formulate a rule that will comprehend all the conditions which could be presented, but we think it safe to say that in general, where the validity of a patent has been sustained by prior adjudication upon final hearing, and after bona fide and strenuous con-

The weakness of influence of other adjudications is shown in the statement and proceedings of the Supreme Court in *Rubtest*, the matter of its validity upon motion for preliminary injunction is no longer at issue, all defense, except that of infringement, being reserved to the final hearing; subject, however, to the single exception that, where a new defense is interposed, the evidence to support it must be so cogent and persuasive as to impress the court with the conviction that, if it had been presented and considered in the former case, it would probably have availed to a contrary conclusion. In the consideration of such new defense of anticipation, regard should be had to the rule that such a defense is an affirmative one; that the burden of proof is upon him who asserts it; and that the grant of letters patent is *prima facie* evidence that the patentee is the first inventor of the device described therein, and of its novelty. *Coffin v. Ogden*, 18 Wall. 120; *Smith v. Vulcanite Co.*, 93 U. S. 486; *Lehnbeuter v. Holthaus*, 105 U. S. 94; *Cantrell v. Wallick*, 117 U. S. 689, 6 Sup. Ct., 970; *Barbed-Wire Patent*, 143 U. S. 275, 12 Sup. St. 443, 450. The propriety of this rule is enforced by the consideration that an adjudication in the case of a patent is not only a judgment *inter partes*, but is a judicial construction of a grant by the government, and in a broad sense deals with and determines the rights of the public. A patent is *sui generis*. By it the public, through its authorized representatives, grants a monopoly for a term of years in consideration of the surrender of the invention to public use upon expiration of the term. When, upon judicial contest, a competent court has sanctioned the grant, and determined the right thereunder, the monopoly hereby granted ought not to be permitted to be invaded except upon a clear showing that the decision invoked in its favor was wrong. It is true that the prior adjudication does not deal with the supposed new defense, and does not affect the merits of that defense upon final hearing; but the fact that it was not presented, especially where the existence of the claim was known to and considered by counsel, is a circumstance to be considered by the court in passing judgment upon the merits upon the hearing for an interlocutory injunction. We are of opinion that the rule was correctly interpreted by the court below, and properly applied to the case in hand. We are asked to determine the extent to which this court should go in review of an exercise of discretion by the court below in granting a preliminary injunction. There would seem to be some divergence of opinion in the circuit courts of appeals upon this question. The cases of *Dudley E. Jones Co. v. Munger, etc., Manuf'g Co.*, 2 U. S. App. 188, 1 C. C. A. 668, and 50 Fed. 785, in the fifth circuit; *Watch Co. v. Robbins*, 6 U. S. App. 275, 3 C. C. A. 103, and 52 Fed. 337, and *Blount v. Societe Anonyme du Filtre Chamberland Systeme Pasteur*, 6 U. S. App. 337, 3 C. C. A. 455, and 53 Fed. 98, in the sixth circuit; *Consolidated Electric Storage Co. v. Accumulator Co.*, 3 U. S. App. 579, 5 C. C. A. 202,



ber Co. v. Goodyear.<sup>120</sup> Referring to the patent in suit, they said, "The validity of the claim of the testator was never shaken by any adjudication. It has been uniformly affirmed and sustained. If the subject was never brought here before, it was doubtless because those who were defeated elsewhere saw no ground for the hope of a more favorable result in this court. These considerations are very persuasive to the presumption that the claim of Chas. Goodyear, the elder, that he was the original and first inventor is impregnable. If it were not so we can not doubt that it would have been overthrown in the numerous and several assaults would have been made upon it. We have, however, examined the question by the light of the evidence. . . ." The uniformity of opinion of other courts upon the same matter did not, it appears, so satisfy the last court as to obviate its independent examination of the evidence.

and 55 Fed. 485, in the third circuit; *American Paper Pail & Box Co. v. National Folding Box & Paper Co.*, 1 U. S. App. 283, 2 C. C. A. 165, and 51 Fed. 229, in the second circuit; and *Davis Electrical Works v. Edison Light Co.*, 5 U. S. App. 611, 60 Fed. 276, in the first circuit,—are perhaps in antagonism, leading the court of the sixth circuit to certify the question to the Supreme Court. That court, however, in *Watch Co. v. Robbins*, 148 U. S. 266, 13 Sup. Ct. 594, held that the fact that courts had reached contradictory results did not under the statute warrant the submission of the question or its decision, but might furnish ground for a certiorari upon proper application. We do not deem it needful at this time to enter that field of discussion, because, assuming the right of the appellate court to review to the fullest extent the decision of the court below, we are satisfied with the correctness of the conclusion reached upon the merits with respect to the issuance of the preliminary injunction." Approved in *Breshnam v. Tripp Giant Leveller Co.*, 7 Fed. 920. In *National Cash Reg. Co. v. Am. Cash Reg. Co.*, 178 Fed. 79 the influence appears to have been limited to adjudications of appellate courts.

<sup>120</sup> 9 Wall. 788, 793. The fact that a patent has been judicially declared to be valid does not obligate another court even to grant a preliminary injunction against infringement. "While it is a rule of comity, convenience, and expediency that deference shall be paid to the judgment of a co-ordinate tribunal sustaining the validity of a patent, its obligation is not imperative." *Vulcan Soot Co. v. Amoskeag Mfg. Co.*, 255 Fed. 88.

## § 3. ORIGINALITY—PRIOR KNOWLEDGE

ANTICIPATION AND NOVELTY. The foregoing has been a discussion of the general proposition that nothing amounts to invention, within the meaning of the patent laws, which is not so different from prior existing actualities as to have necessitated a certain degree of uncommon mental operation. If the new product does not sufficiently differ from the existing knowledge as to be invention it is, technically, said to be "anticipated" by such knowledge. It is also said to lack novelty. The expressions are practically synonymous; "anticipated" and "lacking in novelty" are used interchangeably.<sup>127</sup> As has been already said, the phrase "lacking in invention" is also synonymous with the others, being merely a different way of saying that a device has been anticipated and is lacking in novelty. Some writers treat "invention" and "novelty" as distinct, but it will be observed, that the same cases or type of cases are used by them to show when invention is present, and when not, as are used to illustrate the presence or absence of novelty. A production can not be an invention, when knowledge of all the prior art is conclusively presumed to be possessed by the inventor, unless it does possess novelty. It is only when invention is used in the very broad sense of something actually new to the producer himself that it can be dissociated from novelty. For the sake of convenience it is often used in this sense, but there is no need for further discussion of the determination of the presence of patentable invention under this head. The context usually shows clearly with which meaning the word invention is employed.

We come now to a discussion of the *extent* to which knowledge must exist to constitute anticipation, and the degree of proof of its existence which is necessary.

FOREIGN USE. The one exception to the requirement that a production must be new, to be a patentable invention, is in the fact that mere *use* in a foreign country does not preclude patentability of a device in this country.

<sup>127</sup> But see the apparent distinction made in *Crandall v. Richards*, 8 Fed. 808.

If the applicant for a patent appears to have been ignorant of such use, and therefore to be more than a mere importer, he is entitled to a patent despite the use. The statute of 1836 and those following authorize issue of a patent for an invention "not known or used by others in this country . . . and not patented or described in any printed publication in this or any foreign country." In the earlier statutes the words "in this country," following "not known or used" were absent. Under this phraseology it was held that use even in a foreign country deprived an inventor of his right to a patent monopoly.<sup>129</sup> But since the act of 1836 the Supreme Court has said that a patent issued to one who believed himself the true and first inventor is not avoided by evidence of mere prior use in a foreign country.<sup>130</sup> In such case "the party who invents is not strictly speaking the first and original inventor. The law assumes that the improvement may have been known and used before his discovery. Yet his patent is valid if he discovered it by the efforts of his own genius, and believed himself to be the original inventor. The clause in question qualifies the words before used, and shows that by knowledge and use the legislature meant knowledge and use existing in a manner accessible to the public. If the foreign invention had been printed or patented, it was already given to the world and open to the people of this country, as well as of others, upon reasonable inquiry. They would therefore derive no advantage from the invention here. It would confer no benefit upon the community, and the inventor therefore is not considered to be entitled to the reward. But if the foreign discovery is not patented nor described in any printed publication it might be known and used in remote places for ages, and the people of this country be unable to profit by it. The means of obtaining knowledge would not be within their reach; and, as far as their interest is concerned, it would be the same thing as if the improvement had never been discovered. It is the inventor here that brings it to them, and places it in their possession. And as he does this by the effort of his own genius, the law regards

<sup>129</sup> *Whitney v. Emmet*, Baldwin 303.

<sup>130</sup> *Gayler v. Wilder*, 10 How. 476, 496.

him as the first and original inventor, and protects his patent, although the improvement had in fact been invented before, and used by others."<sup>131</sup>

It is to be noted that these cases, even though they sustain patents for devices already known abroad, do not conflict with the rule that an importer is not entitled to a patent. They merely hold that one who has truly created something by his own mental action, and therefore believes himself to be not only a true inventor but also the first inventor, shall not lose his right to a patent because the same thing was known but not published in a foreign country. Proof that the alleged inventor had acquired his own knowledge from abroad, and therefore could not believe himself the inventor, but was merely an importer, would undoubtedly deprive him of his right to a patent.<sup>132</sup>

The publication of knowledge, or the actual patenting of the device, even in a foreign country will, as said in *Gayler v. Wilder, supra*, be sufficient to deprive a device of patentability here.

But if the foreign patent was taken out by the same inventor who is seeking a patent in this country the statute provides an exception, in § 4887. "No person otherwise entitled thereto shall be debarred from receiving a patent for his invention or discovery by reason of its having been first patented or caused to be patented by the inventor or his legal representatives or assigns in a foreign country, unless the application for said foreign patent was filed more than twelve months prior to the filing of the application in this country, in which case no patent shall be granted in this country.

"An application for patent filed in this country by any person who has previously regularly filed an application for a patent for the same invention or discovery in a foreign coun-

<sup>131</sup> *O'Reilly v. Morse*, 15 How. 62, 110. *Roemer v. Simon*, 95 U. S. 214. *Cornely v. Marckwald*, 17 Fed. 83, *Schillinger v. Greenway Brew'g Co.* 17 Fed. 244; *Worswick Mfg. Co. v. Steiger*, 17 Fed. 250, *Doyle v. Spaulding*, 19 Fed. 744. *McFarland v. Spencer*, 23 Fed. 150. *Vacuum Engineering Co. v. Dunn*. 209 Fed. 219.

<sup>132</sup> *Roemer v. Simon*, 95 U. S. 214 and cases *supra*.

try which, by treaty, convention, or law, affords similar privileges to citizens of the United States shall have the same force and effect as the same application would have if filed in this country on the date on which the application for patent for the same invention or discovery was first filed in such foreign country, provided the application in this country is filed within twelve months from the earliest date on which any such foreign application was filed; but no patent shall be granted upon such application if the invention or discovery has been patented or described in a printed publication in this or any foreign country, or has been in public use or on sale in this country, for more than two years prior to the date of filing in this country."

**EXTENT OF PRIOR KNOWLEDGE.** Knowledge or use in this country, or description in a printed publication anywhere, constitute sufficient knowledge, by the very words of the statute, to deprive a production of novelty. The prior knowledge need not have been widespread to constitute anticipation; it is sufficient if it was general enough to be satisfactorily proved. In a case as early as 1817, this particular point came before the court,<sup>133</sup> which said "The law never could intend, that the greater or less use, in which it might be, or the more or less widely the knowledge of its existence might circulate, should constitute the criterion by which to decide upon the validity of any subsequent patent for the same invention. I hold it, therefore, to be the true interpretation of this part of the Statute, that any patent may be defeated by showing, that the thing secured by the patent had been discovered and put in actual use prior to the discovery of the patentee, however limited the use or the knowledge of the prior discovery might have been."

The Supreme Court itself has said,<sup>134</sup> "The prior knowledge and use by a single person is sufficient. The number is immaterial." In this particular case the prior knowledge appears to have been held by at least five persons. While this dictum is

<sup>133</sup> *Bedford v. Hunt*, 1 Mason 302.

<sup>134</sup> *Coffin v. Ogden*, 18 Wall. 120. *Twentieth Century Co. v. Loew Mfg. Co.*, 243 Fed. 373, 378, "Prior knowledge and use by a single person would have been sufficient to require denial of the patent."

undoubtedly sound as a matter of law, it is obvious that the actuality could seldom arise. If the knowledge were truly confined to one person, it is clear that the proof of such knowledge would, almost as a corollary, be confined to the same one person. In view of the tendency of the courts to scrutinize most carefully the evidence of alleged prior knowledge where, as they say, the incentive to perjury is extreme, it is decidedly improbable that the testimony of one individual, that he, alone, possessed knowledge of the device before the time of the disputed invention, would be accepted as sufficient to show anticipation. But it is not impossible; as is clear from the case of *Bannerman v. Sanford*.<sup>135</sup> In this case the prior knowledge was actually embodied in a wooden model. Although this model was known to but one individual and no use of the device had ever been made, the court held that it constituted anticipation, and quoted as authority the dictum of *Coffin v. Ogden*.<sup>137</sup>

Some confusion as to this proposition, that the extent of the prior knowledge is immaterial, is caused by the expression of courts which have failed to distinguish clearly between knowledge and the proof of knowledge. As we have said, the fact that but one or two persons testify as to the existence of the prior knowledge may well leave effective doubt as to its actuality. If a court being unsatisfied, for some such reason, as to its existence, puts its decision upon the ground merely of "absence of prior knowledge," there may be confusion as to whether the court disbelieved the evidence, or believing it, did not consider the knowledge proved to be sufficient. An excellent illustration of this looseness of thought and expression is found in the case of *Lincoln Iron Works v. M'Whirter Co.*<sup>139</sup> The statement is definitely made in this case that, "It is not enough to defeat the patent that some one other than Gilmour (the patentee) had conceived the invention before he did, or had even perfected it, so long as it had not been in public use or described in some patent or publication." This is in flat

<sup>135</sup> 99 Fed. 294.

<sup>137</sup> 18 Wall. 120.

<sup>139</sup> 142 Fed. 967.

conflict with the cases just referred to and contrary to the statute itself. But on examination of the particular case, it appears clearly that the matter of prior knowledge, as anticipation, was not involved in the statement quoted at all. The question was whether the patentee, Gilmour, had obtained the idea of the device which he patented from one Brown, to whom it was claimed the credit for the invention really belonged, and the court held that Gilmour had not obtained from Brown anything new or patentable. The court then did adjudge the patent void, in view of prior knowledge, for lack of novelty. This case stands as illustration also of the facility and positive harm of relying for the law upon statements excerpted from cases, instead of upon the facts and actual holdings thereof.

PROOF OF PRIOR KNOWLEDGE. But although the prior knowledge need not have been general, its actual existence must be conclusively proved. This proof takes what may be considered as two distinct forms, which however are incapable of exact differentiation. There must first be proved the existence of *some* knowledge as alleged; and then it must be demonstrated to the satisfaction of the court that this knowledge, as proved to have existed, is in truth enough like the subsequent alleged invention to constitute an anticipation of it. When the alleged prior knowledge exists in some tangible or substantial form, as in published works, or well known machines or processes, the first proof is comparatively simple; the real issue arises out of the attempt to identify this earlier knowledge with that of the patent in suit. On the other hand, if the prior knowledge is not embodied in any visible form, but rests only in the memory of witnesses, there is a decided issue of fact, arising from the necessity of proving the actual existence of this alleged knowledge, before the issue of similarity can arise at all. This is equally true where the alleged prior knowledge is embodied in substantial form, in drawings, or in written description but the authentic date of these embodiments is disputable. In such case the same issue of *existence* of the alleged knowledge arises before that of *identity* can be considered. There are so many correlations, however, between

the existence and the identity of knowledge, that the issues and the proof can not well be separately treated. The whole matter must be considered as one issue, namely, that of the *existence of identical* knowledge.

The uncertainty of oral testimony is commented on by the Supreme Court, forcefully, in saying,<sup>142</sup> "We have now to deal with certain unpatented devices, claimed to be complete anticipations of this patent, the existence and use of which are proven only by oral testimony. In view of the unsatisfactory character of such testimony, arising from the forgetfulness of witnesses, their liability to mistakes, their proneness to recollect things as the party calling them would have them recollect them, aside from the temptation to actual perjury, courts have not only imposed upon defendants the burden of proving such devices, but have required that the proof shall be clear, satisfactory and beyond a reasonable doubt. Witnesses whose memories are prodded by the eagerness of interested parties to elicit testimony favorable to themselves are not usually to be depended upon for accurate information. The very fact, which courts as well as the public have not failed to recognize, that almost every important patent, from the cotton gin of Whitney to the one under consideration, has been attacked by the testimony of witnesses who imagined they had made similar discoveries long before the patentee had claimed to have invented his device, has tended to throw a certain amount of discredit upon all that class of evidence, and to demand that it be subjected to the closest scrutiny. Indeed, the frequency with which testimony is tortured, or fabricated outright, to build up the defence of a prior use of the thing patented, goes far to justify the popular impression that the inventor may be treated as the lawful prey of the infringer."<sup>143</sup>

*The Patent as Evidence.* The issuing of the patent itself gives rise to a presumption that the device covered thereby is novel.

<sup>142</sup> The Barbed Wire Patent, 143 U. S. 275, 284.

<sup>143</sup> Mere testimony of a single witness as to the prior existence of a device held too uncertain to show anticipation. *Peters v. Union Biscuit Co.*, 120 Fed. 679.



The burden of proving the invalidity of a patent is thus thrown upon the party asserting it. "The burden of proof rests upon him, and every reasonable doubt should be resolved against him."<sup>140</sup> "Evidence of doubtful probative force will not overthrow the presumption of novelty and originality arising from the grant of letters patent for an invention. It has been frequently held that the defense of want of novelty or originality must be made out by proof so clear and satisfactory as to remove all reasonable doubt."<sup>141</sup> In the case quoted from, to overthrow the presumption that the patentee, Bell, was the first inventor, the other party introduced the testimony of nearly 200 witnesses to prove the priority of a device quite sufficiently identical with the patented one to deprive it of novelty. Despite this overwhelming abundance of corroborative testimony, the court upheld the patent, questioning the validity of the testimony very largely on the ground that if such prior device had actually existed it would have been put into use or, at least, patented.

**SIMILARITY OF THE PRIOR KNOWLEDGE AS PROVED.** When, however, the existence of the prior knowledge has been proved, the issue then becomes not one of evidence and credibility, but one of mere conclusion as to its similarity with the patented device. This may be treated by the courts as a question of fact, to be proved by expert testimony, or as a mere conclusion to be reached in some intuitive or logical way.

But in either aspect, it is not a matter to be determined by rules of law, and could not be. Precedents may influence to a certain extent, as in other findings on the matter of invention, but each case must, in the very nature of the subject, be determined solely on its own peculiar circumstances. The expression of individual findings as rules of law is not uncommon in the reports, but it is wholly inaccurate, misleading,

<sup>140</sup> *Coffin v. Ogden*, 18 Wall. 120, 124. *Parks v. Booth*, 102 U. S. 96, *Cond't v. Brush*, 132 U. S. 39, *Am. Caramel Co. v. Mills & Bro.*, 149 Fed. 743.

<sup>141</sup> *Am. Bell Telephone Co. v. People's Telephone Co.*, 22 Fed. 309, 313, citing authority. *Underwood Typewriter Co. v. Elliott-Fisher Co.*, 165 Fed. 927.

and a source of much confusion when other courts come to a different conclusion upon similar superficial facts.

*Use.* The fact of *use* of a prior device has great influence upon the decision in each of these questions. As is obvious from the cases just referred to, actual use or absence of use, may be a determinant factor in the credibility to be given to evidence of the existence of the alleged prior knowledge.<sup>144</sup> So, also, as will be seen, it plays a very great part in determining the identity of the prior knowledge with that of the patent. The proposition is that an already existing idea of means which was never in fact put into use, was probably not essentially identical with the later one which was actually put into use. "In determining a question of this character (anticipation) it is a pertinent and reasonable inquiry, if it be true that the disclosure of an earlier patent was substantially that of

<sup>144</sup> *Deering v. Winona Harvester Works*, 155 U. S. 286, 301, "Granting the witnesses to be of the highest character, and never so conscientious in their desire to tell only the truth, the possibility of their being mistaken as to the exact device used, which, though bearing a general resemblance to the one patented, may differ from it in the very particular which makes it patentable, are such as to render oral testimony peculiarly untrustworthy; particularly so if the testimony be taken after the lapse of years from the time the alleged anticipating device was used. If there be added to this a personal bias, or an incentive to color the testimony in the interest of the party calling the witness, to say nothing of downright perjury, its value is, of course, still more seriously impaired. If, as he says, in 1878, he tried a rigid extension and found it unserviceable, and subsequently, in the same season, he invented a pivoted extension, and it worked well, it is improbable that he would have cast it aside altogether at the end of the season, and taken up again the theory of a rigid extension, and applied it not only to his own, but to a number of other machines. His excuse that the binder was incapable of doing satisfactory work during the season of 1879, by reason of the shortness of the grain that season, is evidence that it was inoperative. If it had been a success, he would hardly have thrown it aside permanently. Doubtless he did use a rigid extension of some sort; but if he ever used a pivoted device at all—of which we have considerable doubt—his efforts in that direction must be relegated to the class of unsuccessful and abandoned experiments, which, as we have repeatedly held, do not affect the validity of a subsequent patent." *Gamewell Fire Alarm Telegraph Co. v. Municipal Signal Co.*, 61 Fed. 948.

Jones, why during a period of many years was it not practically applied to the same use?"<sup>145</sup>

The statute does not provide that the prior knowledge shall have been put into actual use to constitute anticipation. It is sufficient to deprive an alleged invention of patentability if it were used *or known* before. In many instances, there is practical reason why use should be required before a finding of anticipation will be reached. Actual use often is necessary, as has been said, to show that the prior knowledge was identical with the alleged invention; but, except as regards proof, if the identity of the knowledge is otherwise clear, the prior knowledge need not have been placed in use.<sup>146</sup>

Even in cases where actual use has been held requisite to show the real similarity of the prior device to the usable one in question, only enough use to demonstrate this has been demanded. Thus in *Brush v. Condit*<sup>147</sup> only one embodiment of the earlier known device had ever been made. It had been used a very short time only, and then discarded. Nevertheless the court said, "With a strong disinclination to permit the remains of old experiments to destroy the pecuniary value of a

<sup>145</sup> *Carnegie Steel Co. v. Cambria Iron Co.*, 89 Fed. 721, 738.

<sup>146</sup> *Sayles v. Chi. & N. W. R. R. Co.*, 4 Fisher Pat. Cases. *Hoe v. Miehle Printing Press Co.*, 141 Fed. 112. It must, however, be noted that in at least one case, very positive prior knowledge was held not to constitute anticipation because it had never gone into practical use. This was so held even though the identity of knowledge was undisputed. *Carnegie Steel Co. v. Cambria Iron Co.*, 89 Fed. 721. The case involved a patent for the process of mixing molten iron so as to produce uniformity by emptying the contents of several converters into a central basin, from which the combined contents were drawn off as desired. This was held not anticipated by an earlier publication in which it was said, "Uniform results . . . can hardly be expected unless a number of blast furnace charges are mixed. This would seem to be the theoretical solution of the problem." *Gayler v. Wilder* 10 How. 476, 409, "The case was thus made to turn not on the priority of invention only, but upon that *and the fact of its having been tested by experiments*. This introduces a new principle into the patent law. The right under the law depends upon the time of the invention. An experimental test may show the value of the thing invented, but it is no part of the invention." *Stitt v. Eastern R. R. Co.*, 22 Fed. 649; *Crown Cork & Seal Co. v. Aluminum Stopper Co.*, 108 Fed. 845.

<sup>147</sup> 132 U. S. 39.

patent for a useful and successful invention, and remembering that the defendants must assume a weighty burden of proof, I am of the opinion that the patentee's invention is clearly proved to have been anticipated by that of Hayes."<sup>148</sup>

*Abandoned Experiments.* Whether or not abandoned experiments are sufficient to anticipate a later production, is a question of evidence rather than of substantive law. It is occasionally said that "abandoned experiments do not anticipate," as though it were a matter of law that they could not.<sup>149</sup> This, however, is not correct. Abandoned experiments not only can anticipate, theoretically, but have been held to do so.<sup>150</sup> The abandonment of experiments may result not from the inutility and unsuccessfulness of the device as developed, but from wholly extraneous causes, such as lack of capital to build machinery. If the essential identity of the prior device, concerning which the experiments were being made, with the particular device in issue is clear, no further showing is necessary.<sup>151</sup>

But if the alleged anticipated device was different in formal structure from the later one, the difficulty of proving that it was essentially identical with the later one is extreme. It is perfectly obvious that a device which will not work is not the same in form or construction as a device which will work.

If the prior device has been actually built, so that its formal characteristics are clearly demonstrated, the question of anticipation becomes merely the usual issue, already discussed, of whether the change which made the latter device successful required invention or was merely mechanical.

If the earlier device has not been formally embodied, there is then a complication arising from the difficulty of determining exactly what the "experimental" device was, or purported to be, either in form or essence. With this in view, there are two possibilities in respect to an alleged anticipated device

<sup>148</sup> Hall v. McNeale, 107 U. S. 90; Bedford v. Hunt, 1 Mason 301.

<sup>149</sup> The Corn Planter Pat. 23 Wall. 181, 211. Deering v. Winona Harvester Works, 155 U. S. 286, 302.

<sup>150</sup> Crown Cork & Seal Co. v. Aluminum Stopper Co., 108 Fed. 845.

<sup>151</sup> Sayles v. Chi. & N. W. R. R. Co., 4 Fish. 584.

which has never been put into practical use. It may have been completed on paper, so that a device made according to the plans and description would work, but no device may have ever been made according to those plans. Or it may never have been completely developed, either substantially or on paper, to the extent that it would quite work.

In the former case, it certainly amounts to a prior description of the later device, and the only possible question is whether this alleged description was in reality so clear that an expert would, in following it, produce the later device. In the latter case, the fact that it did not work, and could not be made to work, so far as the experimenter had proceeded, is generally treated as rather conclusive evidence that the knowledge represented by it was not sufficiently like the knowledge represented by a workable device to constitute anticipation.

It is obvious, that the mere fact of prior knowledge not having been put to actual use, can not be absolutely relied on as negative invention. If the prior knowledge is clearly quite identical with the patented device, as for instance if it were shown in a published statement word for word and completely descriptive of the device, the anticipation could not logically be avoided by the fact that the utility of the device had not been generally recognized or that it had never been constructed. Even if the prior knowledge were only substantially similar to the patented device, the failure to use it might be due not to essential and inventive difference from the later device, but wholly to extraneous circumstances.<sup>152</sup>

*Drawings, models, etc.* Where the prior knowledge exists in the form of a published description, or in the specification of

<sup>152</sup> *Crown Cork & Seal Co. v. Aluminum Stopper Co.*, 108 Fed. 845. *Crandall v. Richardson*, 8 Fed. 808. "In a defence of prior use it is often a controlling circumstance, where there is doubt in the proof, that, considering the success of the later device, if it had been made previously it would have attracted the attention of the trade and immediately have gone into use; but it often happens that from various fortuitous circumstances a complete invention, in a branch of business where much depends on energy and facilities and capital, fails to attract that attention which, under different and better auspices, it receives when independently produced at a later day."

a patent, or in the existence of a mere model, the question of anticipation is, in the first inquiry, one of evidence only. Is prior knowledge surely proved? Does the publication, the patent, or the model clearly show the same device as the one in question? If it does, the device in question is anticipated.

One text writer has taken a different position.<sup>153</sup> He says, "Novelty of a machine or manufacture, is not negatived by any prior unpublished drawings, no matter how completely they may exhibit the patented invention, nor by any prior model, no matter how fully it may coincide with the thing covered by the patent. The reason of this rule is not stated with fullness in either of the cases which support it, but that reason is deducible from the statute and from the nature of drawings and of models. The statute provides, relevant to the newness of patentable machines and manufactures that they shall not have been previously known or used by others in this country. Now, it is clear that to use a model or a drawing is not to use the machine or manufacture which it represents; and it is equally obvious that to know a drawing or a model is not the same thing as knowing the article which that drawing or model more or less imperfectly pictures to the eye. It follows that neither of those things can negative the newness required by the statute. Nor is the statutory provision on this point lacking in good reasons to support it. Private drawings may be mislaid or hidden, so as to preclude all probability of the public ever deriving any benefit therefrom; and even if they are seen by several or by many, they are apt to be understood by few or by none. Models also are liable to be secluded from view and to suffer change and thus to fail of propagation. Moreover, if a patent could be defeated by producing a model or a drawing to correspond therewith, and by testifying that it was made at some sufficiently remote point of time in the past, a strong temptation would be offered to perjury. Several considerations of public policy and of private right combine, therefore, to justify the rule of this section."

This seems to be supported, in part, at least, by the case of

<sup>153</sup> Walker, Patents.

American Writing Machine Co. vs. Wagner Typewriter Co.<sup>154</sup> in which the court said "It is clear, as pointed out by Mr. Walker, that knowledge of a model or a machine is not knowledge of the machine itself any more than knowledge of a model of Brooklyn Bridge is knowledge of that structure. But we think the rule should be restricted to a model pure and simple as the word is understood in common parlance, viz.: a pattern, a copy, a representation usually upon a reduced scale. The word "model" should not be construed to mean the identical device which is covered by the patent. If this were otherwise a defendant who produces the exact structure of the claims and proves that it was known prior to the date of the alleged invention is completely answered if the complainant can show that the anticipating structure was filed as a model."

There are like expressions to be found in other cases. But on examination it is clear that the true rule is one of evidence simply. It is perfectly obvious that Mr. Walker has fallen into the common error of confusing the *embodiment* of the invention with the invention itself, and therefore he forgets that an invention might be known, or even used, even though it had never been tangibly embodied. In the particular case just referred to the court admits this, although it does lay down the rule of law quoted, in saying further, "In the case of a complicated machine a small model incapable of actual use may be filed for the purpose of explaining and illustrating the drawing; that such a model alone would not anticipate is, of course, perfectly clear. On the other hand, it frequently happens that the applicant files as his model not a pattern or representation of the thing invented by him but the thing itself. Take, for illustration, an application for a patent for a horseshoe nail where one of the nails made by the inventor is filed as a model, can it be that a subsequent applicant can hold a patent for that nail or any feature thereof after proof of its prior existence and the knowledge thereof by the public."

If one only keeps clearly in mind what Mr. Walker evidently forgot and the court in the Typewriter case saw but vaguely,

<sup>154</sup> 151 Fed. 576.

namely, that an invention is a concept, not a tangible thing, then to know a drawing or a model is to know the invention which they represent. Mr. Walker's reasons why the existence of the drawing or model should be carefully scrutinized are sound. But to seriously contend that the concept which constitutes the invention *could not* be revealed to the public by a full and clear written description of it, or by its embodiment in miniature, would be ridiculous.

In the case of *Keys v. Grant*<sup>155</sup> the Supreme Court said it was properly left to the jury to decide whether a device described in a prior publication was in fact so similar to the patented device as to anticipate the latter. As the prior knowledge was represented only by this printed description, there could have been no question for the jury if it were a rule of law that published drawings could not anticipate. There is no more reason why unpublished drawings should not also anticipate, except the reason arising from the natural doubt as to their authenticity.

The confusion arises from the fact that this issue of evidence is confused with the issue of whether the device as demonstrated in the earlier form is the same in essence as the later one. This latter issue is not one of evidence but one of fact, whether for the court or the jury. It is, again, the usual issue of whether the apparent change is such as amounted to invention or is a merely formal and mechanical change, and is determined by the same factors as in all such cases.

But although the foregoing statements of the present writer are indisputable in theory, it must be recognized that the courts do in fact hold inventions not to be anticipated by prior knowledge shown by unpublished drawings, no matter how definite and positive and exact a knowledge those drawings may reveal. Such holdings are clearly indefensible as a matter of logic, but they are based rather obviously on the court's opinion of public good, and they must be reckoned with.<sup>155\*</sup>

<sup>155</sup> 118 U. S. 25.

<sup>155\*</sup> In addition to cases already cited see, to this effect, *Christie v. Seybold*, 55 Fed. 69; *Automatic Weighing Mach. Co., v. Pneumatic Scale Corp.*, 166 Fed. 288; See also the discussion under "date of invention," *post*.



*Summary.* The foregoing discussion has been concerned simply with the evidence on which lack of novelty can be predicated and the weight usually given to the different forms which the evidence takes. It may be summed up as a general proposition by saying that a prior patent, model or other tangible embodiment offered as evidence of lack of novelty must set forth the knowledge in such clear and unequivocal form that a true and just comparison can be made of it with the subsequent device.<sup>156</sup> But in the broadest aspect, after the weight to be given the evidence is settled, the comparison remains to be made; the question of *identity* of the two ideas of means still remains to be settled. This involves of course the whole matter of "invention" and "novelty" thus far discussed. When the existence of the prior patent or other form of knowledge is shown, so that the existence of the knowledge is *proved*, and the issue thereby becomes one of identity, the *form* of the prior knowledge ceases to be material, except as stated in the foregoing discussion. If this is clearly borne in mind much of the confusion as shown in decisions, between conclusions as to identity of concepts, and *proof* of the existence and characteristics of a particular concept, will be eliminated—a consumption devoutly to be desired.

A warning may be here adverted to, which is sometimes uttered by the courts, against reading into the prior knowledge something which is in fact not there. The subsequent device may, when produced, seem so simple that its actual difference from prior knowledge may appear immaterial. Whether it is really immaterial or not, is the whole question of invention as against mere mechanical skill. As one court has said,<sup>157</sup> "The line which separates invention from mechanical skill is at best a narrow one, and the difficulty of demarkation in this case is

<sup>156</sup> Underwood Typewriter Co. v. Elliott-Fisher Co., 165 Fed. 927, 930. "The prior patent or publication relied upon must, by descriptive words or drawings, or by both, contain and exhibit a substantial representation of the patented improvement in such full, clear and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, and practice the invention." Hanifen v. Godschalk Co., 84 Fed. 649.

<sup>157</sup> Ideal Stopper Co. v. Crown Cork & Seal Co., 131 Fed. 244, 246.

enhanced by the fact that of necessity we look upon Young's invention with eyes instructed by Painter's and other subsequent patents, and must take care that we do not in such light so reconstruct Young's patent as to see in it those possibilities which may seem very obvious now, but which may not have been disclosed by the patent itself; for, vague and uncertain as may be the line of demarkation between mechanical skill and invention, we could not deny Painter the right of invention, unless the idea upon which his patent is predicated is so clearly set forth or suggested by Young that a mechanic, with Young's patent before him, could by mere mechanical skill so modify proportions or change the mode of operation as to overcome the difficulties which excluded the prior device from commercial utility, and thus make fruitful the inventive idea which before was futile, merely through lack of the mechanical skill needed for its development."<sup>158</sup>

LOST ARTS. Certain forms of what might be called prior knowledge, even when proved to exist and to be identical with that for which patent is sought, are held, as a matter of law, not to anticipate so as to deprive a later invention of patentability. Prior knowledge which had been forgotten at the time of a later production, will not suffice to deprive that later concept of patentability. The public is no more in possession of forgotten knowledge than if that knowledge had never existed. It is generally believed that centuries ago certain arts existed whose fruits have come down to us today, but whose methods of procedure have been wholly lost to the world. It can not be doubted but that if some one were to resurrect, through his own creative power, the means of producing the same result, he would not be precluded from a patent by the fact that an art had once been known for producing the same result. In *Gayler v. Wilder*<sup>159</sup> the contention was set up that the patent involved was void for lack of novelty because one Conner had used a precisely similar device long before. The court rejected the contention, saying, "If the Conner safe had

<sup>158</sup> *Topliff v. Topliff*, 145 U. S. 156, 161.

<sup>159</sup> 10 How. 477.

passed away from the memory of Conner himself, and of those who had seen it, and the safe itself had disappeared, the knowledge of the improvement was as completely lost as if it had never been discovered. The public could derive no benefit from it until it was discovered by another inventor. And if Fitzgerald (the patentee) made his discovery by his own efforts, without any knowledge of Conner's, he invented an improvement that was then new, and at that time unknown; and it was not the less new and unknown because Conner's safe was recalled to his memory by the success of Fitzgerald's patent."<sup>100</sup>

In this particular case there was a strong dissenting opinion to the effect that Conner's knowledge, merely temporarily *forgotten*, was not truly a "lost" art. Mr. Justice McLean said, "Conner's safe, as appears from the bill of exceptions, was used in his counting-house, being accessible to every one, some six or eight years. In 1838 it passed into other hands; but into whose hands it does not appear. In 1843, Fitzgerald obtained his patent. How long before that he made experiments to test the invention is not proved. At most, the time must have been less than five years. This is a short period on which to found a presumption of forgetfulness. The law authorizes no such presumption. It can never become the law. It is not founded on probability or reason. The question is, Was Conner's invention prior to that of Fitzgerald? That it was of older date by some ten or twelve years is proved. And the instruction, it must be observed, was founded on the supposition that both inventions were similar.

"The instruction seems to attach great importance to the fact that Conner's safe was used only for his private purpose. This is of no importance. The invention is the question, and not the manner in which the inventor used it. The safe was constructed at the foundery, and must have been known to the hands there employed. How can it be ascertained that Fitzgerald was not informed by some of these hands of the structure of Conner's safe, or by some one of the many hundreds

<sup>100</sup> Coffin v. Ogden, 18 Wall. 125.

who had seen it in his counting-house in the city of New York. It was to guard against this, which is rarely if ever susceptible of proof, that the act is express,--if the thing patented was known before, the patent is void. "If the fact of this knowledge in any one be established, it is immaterial whether the patentee may have known it or not, it avoids his patent." Mr. Justice Daniel, also dissenting, very pertinently said, "An attempt has been made to compare the doctrine propounded by the court to what it might be thought is the law as applicable to the discovery, or rather recovery, of the processes employed in what have been called the lost arts. This illustration is in itself somewhat equivocal, and by no means satisfactory; for if that process could certainly be shown to be the same with one claimed by the modern inventor, his discovery could scarcely have the merit of originality, or be the foundation of exclusive right. But, in truth, the illustration attempted to be drawn from a revival of a lost art is not apposite to the present case. The term *lost art* is applicable peculiarly to certain monuments of antiquity still remaining in the world, the process of whose accomplishment has been lost for centuries, has been irretrievably swept from the earth, with every vestige of the archives or records of the nations with whom those arts existed, and the origin or even the identity of which process none can certainly establish. And if a means of producing the effect we see and have amongst us be discovered, and none can either by history or tradition refer to a similar or to the identical process, the inventor of that means may so far claim the merit of originality, though the work itself may have been produced possibly by the same means. But not one principle drawn from such a state of things can be applied to a recent proceeding, which counts from its origin scarcely a period of fifteen years."

That mere temporary *forgetfulness* of knowledge does not prevent that knowledge from anticipating is shown in *Brush v. Condit*.<sup>161</sup> Here the patent was for a device to hold the carbon in electric arc lights. It had been preceded by a simi-

<sup>161</sup> 132 U. S. 39.

lar device, as was shown on the trial, but the earlier one had been used on only one lamp, for a very short time, and had been then relegated to absolute desuetude. In ordinary parlance, it had been completely forgotten, till called to mind by the later device. The court, admitting that the disuse might tend to show dissimilarity with the later, used, one, but being satisfied that there was an identity nevertheless, held that the patented device was not patentable because of this earlier knowledge.

The law is thus left open as to just how far a device, art, etc., must have been forgotten to be technically "lost" and therefore, not anticipatory. Theoretically, if it can be so far recalled as to be compared with the later device, it is not *lost* at all, merely forgotten. Practically, perhaps, the one who causes its recall to public memory by his new device is quite as worthy of a patent as one who absolutely creates a device. The majority opinion in *Gayler v. Wilder* represents the practical view; the dissenting opinion, and such cases as *Brush v. Condit*, the theoretical one.

UNRECOGNIZED RESULTS. Akin to the fact that lost knowledge does not anticipate is the fact that an unrecognized result, an unperceived actuality, if such a phrase may be used, will not serve to anticipate a subsequent alleged creation. In the words of the court,<sup>162</sup> "novelty is not negatived by a prior accidental production of the same thing, when the operator does not recognize the means by which the accidental result is accomplished, and no knowledge of them, or of the method of its employment, is derived from it by any one." In *Andrews v. Carman*,<sup>163</sup> one Green had patented a method of utilizing a principle of nature. It was claimed that the principle had already, prior to his invention, been called into operation by devices accomplishing the same purpose. The court upheld the patent, saying, "A chance operation of a principle, unrecognized by any one at the time, and from which no information of its existence, and no knowledge of a method of its employment, is derived by any one, if proved to have occurred,

<sup>162</sup> *Wickelman v. Dick Co.*, 88 Fed. 264.

<sup>163</sup> 13 Blatch. 307, 323.

will not be sufficient to defeat the claim of him who first discovers the principle, and, by putting it to a practical and intelligent use, first makes it available to man."<sup>164</sup>

The holding is somewhat differently put in another case.<sup>165</sup> It was admitted that a certain earlier patented device approached very near the device in question and might have been made into the same thing by a slight modification. It was held not to anticipate, however, because it was not designed by its maker for the purpose, and the fact that it could have been so modified and used, was not evident to an ordinary mechanic.<sup>166</sup>

SCATTERED KNOWLEDGE. Since an invention is itself, as such, a single idea, although it may be composed of many minor constituent ideas, a patent is not necessarily defeated by showing that some or all of the constituent ideas were already well known. These constituent ideas, uncombined, and each by itself, are not in any sense the one composite idea into which the patentee has welded them. Knowledge of them by themselves is not knowledge of the combination or composite into which they may be welded. Of course, the combining of them into one whole may not have required the exercise of *inventive genius*. In such case the existence of the separate ideas would legally invalidate the patent for the composite idea. The occasional statements to the effect that if the uncombined elements do not show the combination, the patent for the latter is therefor valid, are obviously not meant in their literal significance. Contextually they mean only that if the elements do not show the combination, the patent *may* be valid. It is not necessarily so. But if in fact it did require *invention* to create the patented idea out of the separate ideas, then the patent is valid, however well known the separate ideas may

<sup>164</sup> Warren Bros. v. Owosso, 166 Fed. 309.

<sup>165</sup> Topliff v. Topliff, 145 U. S. 156, 161.

<sup>166</sup> This indicates the substantial identity of invention and novelty. The particular device was not anticipated because to an ordinary mechanic the slight change necessary was not obvious—it would have taken more than mechanical skill to have made the change; hence the later device was a true invention. Tilghman v. Proctor, 102 U. S. 707, 711.

have been. Proof of the prior knowledge of these separate ideas is, therefore, pertinent in a suit, and should not be excluded nor disregarded. But it does not of itself invalidate the patent attacked. It only forms a background against which the inventive quality of the idea patented can be determined.<sup>166a</sup>

**PATENTEE'S PRIOR REVELATIONS.** The fact that the prior knowledge was given to the world by the subsequent patentee himself does not keep it from being such anticipation as will render invalid the later patent. To quote from one decision, "The various improvements or modifications in the process of manufacturing of solidified collodion which are disclosed in the earlier patents to the Hyatts are outstanding against this patent (also issued to the Hyatts) just as much as if they were issued to strangers."<sup>167</sup>

If this prior knowledge has been covered by a patent, granted to the inventor and still held by him, the fact of anticipation will not matter, except as to the greater length of time that the monopoly would exist if it could be obtained under the later patent. If the earlier patent represents a subject matter sufficiently like that of the later one to constitute an anticipation of it, anything that would be an infringement of the later sought patent ought, theoretically, to be an infringement of the earlier patent. If the prior knowledge is not protected by a patent, the inventor may avoid the evils of anticipation by patenting his earlier device, unless he has been guilty of allowing too great a time to pass. Nevertheless, although the earlier patent which would anticipate a later one *ought* to protect the inventor to the same extent as the later one asked for would do, the practical result is not always so equally balanced. Courts tend sometimes to find a device anticipated by a fundamental earlier patent when they might not be inclined to find

<sup>166a</sup> Bates v. Coe, 98 U. S. 31; Smith v. Macbeth, 67 Fed. 137; Imperial Bottle Co. v. Crown Cork etc. Co., 139 Fed. 312; Packard v. Lacing-Stud Co., 70 Fed. 66.

<sup>167</sup> Celluloid Mfg. Co., v. Cellonite Mfg. Co., 42 Fed. 900, 905; So also Doig v. Morgan Match Co., 59 C. C. A. 616; Underwood v. Gerber, 149 U. S. 224; Miller v. Eagle Mfg. Co., 151 U. S. 186; Bannerman v. Sanford, 99 Fed. 294; Williamson v. Neverslip Mfg. Co., 136 Fed. 210.

the later device within the protected scope of the earlier patent if the case should come up from that direction. For this reason, it is sound policy for an inventor to cover all that he is entitled to in a single patent, or at least in patents applied for simultaneously, instead of delaying his application for any part independent of, but closely related to, his main invention.<sup>168</sup>

WHAT CONSTITUTES PRIORITY. The *priority* of the alleged anticipating knowledge is not determined in relation to the date the patent is issued nor even that on which it is applied for. The knowledge, to anticipate, must have existed at the time the invention was made.<sup>169</sup> The patent statute<sup>169a</sup> provides that an inventor may have a patent if his device be "not known or used by others in this country, before his invention or discovery thereof."

If public knowledge is proved to have existed before the application for the patent was filed, the patent is *prima facie* void because of anticipation, lack of novelty in the invention, or whatever one chooses to call it. In the absence of any other proof the invention is *presumed* to have first been brought into existence at the time the application was filed,<sup>170</sup> and it would therefore be subsequent to the public knowledge as proved. But, inasmuch as the date of the invention is not restricted to the date of application, the inventor is free to prove the real time at which his invention was brought into existence.

DATE OF INVENTION. The sufficiency of the evidence upon this point takes two forms, which for the sake of true comprehension of the cases, must not be confused, although they are not always clearly distinguished in judicial discussion.<sup>171</sup> The first issue upon the evidence is whether it amounts to proof

<sup>168</sup> The right of including more than one invention in a single patent is discussed *infra*.

<sup>169</sup> Klein v. Russell, 19 Wall. 433, 464.

<sup>169a</sup> Section 4886.

<sup>170</sup> Drewson v. Hatje, 131 Fed. 734; Automatic Weighing Mach. Co. v. Pneumatic Scale Corp., 166 Fed. 288.

<sup>171</sup> Automatic Weighing Mach. Co. v. Pneumatic Scale Corp., 166 Fed. 288.



of the real existence of any knowledge, regardless of the effect of that knowledge. The inventor might testify under oath that he had evolved his invention in complete detail long before he made his application, but, unless this were corroborated by other evidence, no court would be apt to fix the date of invention according to his statement. The possibility of mere mistake, to say nothing of deliberate falsehood, would be far too great. An invention may be an invention even though it be still locked in the mind of the inventor. But as Lord Justice Brian said, centuries ago,<sup>172</sup> "The devil himself knows not the thought of man," and if there has been no revelation of the invention to others, no substantial embodiment or perceptible expression of it, the proof, resting itself only in the statement of the *soi-disant* inventor is extremely difficult if not impossible. This was somewhat discussed in the case of Clark Thread Co. v. Willimantic Linen Co.<sup>173</sup> "The allegation," said the court, "that the *invention* of Conant, for which his said letters patent were granted, was made before the publication or sealing of Weild's patent requires more careful consideration. . . . The only evidence on the question as to the time of Conant's invention is his own testimony, a species of evidence which, in cases of this kind, ought to be received with great caution." The court felt bound to construe the testimony very strictly against the patentee, "because such testimony, given for the purpose that this was, is necessarily subject to the gravest suspicion, however honest and well intentioned the witness may be." If the inventor could corroborate his statements by the testimony of others to the effect that he had revealed to them his invention in perfected form, it is possible that courts would accept such testimony as sufficient proof, despite its being merely oral statements depending on honesty and exactness of memory. Certainly, however, the testimony would be severely scrutinized and would be accepted as proof with the greatest hesitancy. The statements of courts in respect to the strength of evidence necessary to prove knowledge alleged to anticipate a

<sup>172</sup> Yr. Bk. 17 Ed. IV. 1, 2.

<sup>173</sup> 140 U. S. 481. See also, Symington Co. v. National Malleable Co., 39 Sup. Ct. Rep. 542.

patent, might be applied equally well to the evidence concerning the date of invention.<sup>174</sup>

Occasional courts have gone to the extreme of saying, in effect, that the date of invention *can not* be fixed prior to the time when the invention has been actually embodied in substantial form.<sup>175</sup> These statements, while quite frequent, are logically incorrect, although they do seem to be the law—with some exceptions hereafter discussed. They appear to be based on either of two ideas. One is the vicious error already referred to, that an invention is not a mere concept itself, but is the tangible device resulting from some concept involving inventive genius. On this assumption there could, of course, be no “invention” until there were a tangible contrivance; but the assumption is, as we have said, wholly unwarranted by the cases.<sup>176</sup>

The other idea behind the statement is, that the existence of the invention can not be satisfactorily proved without something more than oral testimony. This idea certainly finds a great deal of support in the cases; and it is at least possible, that no amount of completely credible oral testimony would be accepted as sufficient, by itself.<sup>177</sup>

<sup>174</sup> *Supra*.

<sup>175</sup> *Clark Thread Co. v. Willimantic Linen Co.*, 140 U. S. 481, 489; *Ellithorp v. Robertson*, Fed. Cas. 4408, 4 Blatch. 307; *Automatic Weighing Mach. Co. v. Pneumatic Scale Corp.*, 166 Fed. 288, and cases therein cited; *Symington Co. v. National Malleable Co.*, 39 Sup. Ct. Rep. 542.

<sup>176</sup> *Brown v. Crane Co.*, 133 Fed. 235, Grosscup J., speaking upon an issue other than the one here referred to, “Invention is not in my judgment confined to the concrete mechanical form into which an idea ultimately evolves. Invention is the idea itself, the burst of new thought, the discovery; and patentable invention is the conjunction of these with appropriate and efficient and mechanical means.” See other cases collected *supra*.

<sup>177</sup> A contrary opinion is expressed in *Phila. & Trenton R. R. Co. v. Stimpson*, 14 Peters 448, 461, “In many cases of invention, it is hardly possible, in any other manner, to ascertain the precise time and exact origin of the particular invention. The invention itself is an intellectual process or operation; and like all other expressions of thought, can in many cases scarcely be made known, except by speech. The invention may be consummated and perfect, and may be susceptible of complete

For this reason it behooves an inventor to keep such visible record of the progress of his concept that, should the date of his invention be called into question, he can demonstrate beyond a doubt the date at which he really evolved the concept that constitutes the invention.

The form which this corroborating evidence takes is not material, so long as it demonstrates the existence of the invention claimed. In many cases it has been in the shape of drawings or written description.<sup>178</sup>

description in words, a month, or even a year before it can be embodied in any visible form, machine or composition of matter. It might take a year to construct a steamboat, after the inventor had completely mastered all the details of his invention, and had fully explained them to all the various artisans whom he might employ to construct the different parts of the machinery. And yet from those very details and explanations, another ingenious mechanic might be able to construct the whole apparatus, and assume to himself the priority of the invention. The conversations and declarations of a patentee, merely affirming that, at some former period, he invented that particular machine, might well be objected to. But his conversations and declarations, stating that he had made an invention, and describing its details and explaining its operations, are properly to be deemed an assertion of his right, at that time, as an inventor, to the extent of the facts and details which he then makes known; although not of their existence at an antecedent time." See also, *Bullock Mfg. Co. v. Crocker-Wheeler Co.*, 141 Fed. 101, 107.

<sup>178</sup> *Bullock Elec. Mfg. Co. v. Crocker-Wheeler Co.*, 141 Fed. 101; *Westinghouse Elec. & Mfg. Co. v. Stanley Instrument Co.*, 133 Fed. 167; *Dodge v. Porter*, 98 Fed. 624; *Draper v. Potomska Mills Corp.*, Fed. Cas. No. 4072.

Some confusion has been caused by the cases in which it is said that drawings and descriptions do not constitute an invention and have no effect upon a subsequently granted patent unless they are followed up to practical embodiment, or reduction to practice with proper diligence. Any such statement is on its face paradoxical, and is unsound. If the drawings, etc., do not at least evidence the invention, they could have no effect however diligently they should be followed up. If the invention does not exist until reduced to practice, it does not exist until then however diligent the reduction may have been, and could not therefore take precedence of an invention evolved before the reduction to practice. All that such cases can stand for, in any sort of harmony with other cases, is either that the strength of evidence of the drawings, etc., is weakened by the lapse of time, or that the first inventor has lost his rights because

But here again it must be said emphatically that the decisions are not altogether in accord with the logical theory. In theory, as we have just said, the date of the invention is the date at which knowledge of the precise invention can be satisfactorily proved to have existed. And a drawing or a clear and specific description whose authenticity and existence on the date alleged is beyond dispute, *ought* therefore to be sufficient evidence to protect the inventor. But practically they seem not to be sufficient when there is a question of priority of invention between rival claimants for a patent. In such cases, the courts do say, however illogically, that the date of invention is the date when the concept is first "reduced to practice." Thus, in *Automatic Weighing Machine Co. v. Pneumatic Scale Corp.*<sup>178a</sup> One Watson "conceived his invention, illustrated it by a drawing, and disclosed it to others, as early as January 10, 1896. He reduced his invention to practice by the building of a machine in April, 1897. He filed his application March 11, 1898." One Thomas had filed an application for a patent for precisely the same invention in December, 1896. Thomas' application, therefore, was filed between the admitted date of Watson's concept in its definite and complete form and his embodiment of that concept in its tangible form. The filing was assumed to be the date of Thomas' invention. The issue was whether on these facts Watson or Thomas should be considered the first inventor. Logically, of course, Watson was admittedly the first inventor, he having definitely and precisely formulated the concept which was the invention nearly a year before Thomas did so. But the decision of the court is peculiar. It held the date of Watson's invention to be April,

of his long delay. If, in addition to holding that the earlier alleged inventor has lost the right of precedence which his drawings, etc., might have given and forfeited his possible monopoly, the subsequent and more diligent inventor's patent is upheld, the result is to uphold a monopoly in utter disregard of the fact that the invention covered thereby had been known by others before the patentee evolved it. *Pennsylvania Diamond Drill Co. v. Simpson*, 29 Fed. 288; *Automatic Weighing Machine Co. v. Pneumatic Scale Corp.*, 166 Fed. 288.

<sup>178a</sup> 166 Fed. 288.

1897, and declared it to be a rule that an invention dates not from the time of its full and definite conception but from the time it is first reduced to practice. "The authorities," says the court, "seem to be conclusive upon the point that a conception evidenced by disclosure and drawings does not constitute an invention under the patent laws." The illogicalness of this position is justified by the court on a basis of public advantage.

But the court states two qualifications to this rule. The first is that an application for a patent will be treated as a sort of constructive reduction to practice; that is to say, invention may date from the filing of the application even though the concept has never actually been reduced to practice. As the court puts it, "From these established and seemingly contradictory principles of the patent law, first, that an invention in order to be patentable must be reduced to practice, and, second, that, under the statutes, reduction to practice is not essential either before or after the grant of a patent, it follows that there must be some stage of an invention when it must be presumed as a matter of law that the inventor has reduced his invention to practice; and that stage is presumed to have been reached when he has done all that he is required to do to obtain a valid patent, namely, when he has filed a complete and allowable application; and hence the Patent Office has adopted the rule that the filing of such an application is constructive reduction to practice, and the federal courts have adopted the rule that such an application is conclusive evidence that the patentee has made his invention—that is, reduced his invention to practice—at least as early as that date."

The second qualification is that the date of invention may be carried clear back to the time of the conception, even without any reduction to practice, if the inventor has used due diligence in attempting to reduce it to practice. "It is conceded," says the court, "that a patentee who has used 'reasonable diligence in adapting and perfecting' his invention can carry the date back to his drawings and disclosure."<sup>178b</sup>

<sup>178b</sup> The right of an admittedly prior conceitor was declared to be lost because of his unreasonable delay in reducing his concept to practice, and

*A working model not necessary.* An actual working model of the invention is not required. In the case of *Loom Co. v. Higgins*<sup>170</sup> the court quite precisely said, "An invention relating to machinery may be exhibited either in a drawing or in a model, so as to lay the foundation of a claim to priority, if it be sufficiently plain to enable those skilled in the art to understand it."

*Identification of knowledge.* When a patentee has succeeded in demonstrating to the court's satisfaction that he really did have a certain definite idea at the time alleged, there then arises the very different question whether this idea is the same one actually embodied in the patent. While it is frequently left as a fact for the jury, and is in one sense a question of fact, it is truly a question of psychological fact, a matter of conclusion, reached by the operation of the judicial mind upon the patent of a subsequent conceptor of the same idea was upheld, in *One-Piece Lens Co. v. Bisight Co.*, 246 Fed. 450.

"Now Reno is in this dilemma: if his disclosure was complete in October, 1900, he was not reasonably diligent in waiting until the end of December, 1902, to file his application; if he was reasonably diligent it was because he needed for the completion of his conception the intervening two years, and he does not antedate Stone & Brenchard. He himself suggests no reason for the delay, but the necessity of engineering study, and that did not interfere with an application if he had really fully conceived the invention. . . . He makes no claim that poverty or sickness stood in his way, nor that he was too engrossed with independent affairs, assuming that such would be any excuse. For these reasons his date of invention must be in my judgment that of his application." *United Tunnel Co. v. Interborough, etc. Co.*, 207 Fed. 561, 569.

"Diligence is of the essence of a proper relation between the conception and the reduction to practice of an invention, and must consist of a degree of effort that can fairly be characterized as 'substantially one continuous act.'" *Twentieth Century Co. v. Loew Co.*, 243 Fed. 373, 384.

"As the evidence shows that both inventors used 'reasonable diligence in adopting and perfecting' their inventions by reducing them to practice, each can carry the date of his invention back to the date of his conception and disclosure . . . and the one who first conceived and disclosed his invention and with reasonable diligence connected his conception with its reduction to practice is the 'original and first inventor' under the statutes, without regard to which of the two first completed the reduction to practice." *Evans v. Associated, etc. Co.*, 241 Fed. 252.

<sup>170</sup> 105 U. S. 580.

the perceptible actualities presented. Much the same precedents may be used, in arriving at a particular conclusion upon the evidence presented, as are used for guidance in determining whether certain prior knowledge constitutes anticipation. The question is really the same. In the ascertainment of anticipation the inquiry is, whether the knowledge proved to have existed, prior to the patent, is sufficiently definite and similar to constitute substantially the same thing. When the date of invention is in issue, the inquiry, in the particular phase under discussion is, whether the concept proved to have existed prior to the application for the patent is sufficiently definite and similar enough, in essence, to that of the patent to be substantially the same invention as that patented. The fact that any change from the original idea whose date is proved, and that covered by the patent, was made by the originator of the idea himself does not matter. If the change has been of the essence, has required inventive genius, the date of the new invention can not be carried back to that of the original. "The invention or discovery relied upon as a defense must have been complete, and capable of producing the result sought to be accomplished; . . . If the thing were embryonic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it can not avail to defeat [or to protect] a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated the end in view. The law requires not conjecture but certainty. If the question relates to a machine, the conception must have been clothed in substantial forms which demonstrate at once its practical efficiency and materiality."<sup>180</sup> And again,<sup>181</sup> "Although prior unsuccessful experiments in part suggested the construction which the patentee adopted and perfected, this fact will not defeat [nor protect] the patent."<sup>182</sup> Neither would incomplete, inchoate

<sup>180</sup> Coffin v. Ogden, 18 Wall. 120, 124.

<sup>181</sup> Whittlesey v. Ames, 13 Fed. 893, syl.

<sup>182</sup> Agawam Co. v. Jordan, 7 Wall. 583, 602. "The settled rule of law is that whoever first perfects a machine is entitled to the patent, and is

ideas of the invention suffice to carry the date of invention back of the date of application for the patent, against a showing of knowledge between the dates of the experiments and that of the application.<sup>183</sup>

As illustrative of the effect of collateral circumstances upon proof of the date of invention, is the case, just referred to, of *Loom Co. v. Higgins*.<sup>184</sup> Here, one Davis professed to have invented a device, prior to Webster's production of it. The court rejected this claim, for lack of evidence, and said incidentally, "Another circumstance seems to us as having much weight in this connection. It was found that the loom No. 50, and the Sterling loom, when completed in 1871, worked with wonderful success; sometimes as many as sixty yards being woven on one loom in ten hours. If Davis was the inventor of the wire motion applied to these looms, why did he never apply for a patent for it? He was already a patentee of a different and inferior apparatus. He knew all about the method of going about to get a patent. He belonged to a profession which is generally alive to the advantages of a patent-right. On the hypothesis of his being the real inventor his conduct is inexplicable."

the real inventor, although others may have previously had the idea and made some experiments toward putting it into practice. He is the inventor and is entitled to the patent who first brought the machine to perfection and made it capable of useful operation."

<sup>183</sup> For further authorities see the discussion of the inquiry as to what constitutes sufficient knowledge to anticipate. *Westinghouse Elec. Co. v. Beacon Lamp Co.*, 95 Fed. 462; *The Wood-paper Pat.*, 90 U. S. 566, 594; *Allis v. Buckstaff*, 13 Fed. 879; *Hillard v. Fisher-Book-Typewriter Co.*, 159 Fed. 439, 441, "Statements in a prior application relied upon to prove anticipation must be so clear and explicit that those skilled in the art will have no difficulty in ascertaining their meaning"; *Lincoln Iron Works v. M'Whirter Co.*, 142 Fed. 967.

<sup>184</sup> 105 U. S. 580.



## CHAPTER III

### UTILITY

The statute provides that an invention to be patentable must not only be new but must be "useful" also.<sup>185</sup> It does not, however, say just how much usefulness there shall be, nor does it indicate what is meant by "useful." The interpretation is left open to the courts. It is clear from the decisions that "useful" is not used in the sense of "usable." If it were in this sense, the patent office would be encumbered with a great many fewer absolutely impractical "paper" inventions. There are, for instance, of record, in the neighborhood of 700 patents for various types of explosion turbines and parts thereof. Yet manufacturers are unanimous in saying that a usable, practicable, explosion turbine can not be built, so far as present knowledge of metals goes. It is evident therefore that these 700 patents are not for "usable" devices; yet no one would deny that they are valid patents.

The requirement of usefulness has in fact been restricted to the *purpose* for which the device is intended, and has not been connected with the actual operation of the device. In an early case it was contended strongly that the requirement should properly be applied to the device itself as well as to the purpose of it. The literal form of the statute possibly bears out this assertion, that a "useful art, machine, manufacture or composition of matter" is one which can be used. But the generally held judicial opinion was voiced in that case by Mr. Justice Story as follows:<sup>186</sup> "To entitle the plaintiff to a verdict, he must establish, that his machine is a new and use-

<sup>185</sup> § 4886—"any new and useful art, machine, manufacture or composition of matter"; § 4893—"if on such examination it shall appear . . . that the same (the invention) is sufficiently useful and important, the Commissioner shall issue a patent therefore."

<sup>186</sup> *Lowell v. Lewis*, 1 Mason 182.

ful invention; and of these facts his patent is to be considered merely prima facie evidence of a very slight nature. He must, in the first place, establish it to be a useful invention; for the law will not allow the plaintiff to recover, if the invention be of a mischievous or injurious tendency. The defendant, however, has asserted a much more broad and sweeping doctrine; and one, which I feel myself called upon to negative in the most explicit manner. He contends, that it is necessary for the plaintiff to prove, that his *invention is of general utility*; so that in fact, for the ordinary purpose of life, it must supersede the pumps in common use. In short, that it must be, for the public, a better pump than the common pump; and that unless the plaintiff can establish this position, the law will not give him the benefit of a patent, even though in some peculiar cases his invention might be applied with advantage. I do not so understand the law. The Patent Act uses the phrase "useful invention" merely incidentally; it occurs only in the first section, and there it seems merely descriptive of the subject matter of the application, or of the conviction of the applicant. The language is, 'when any person or persons shall allege, that he or they have invented any new and useful art, machine, etc,' he or they may, on pursuing the directions of the Act, obtain a patent. Neither the oath required by the second section, nor the special matter of defence allowed to be given in evidence by the sixth section of the act, contains any such qualification or reference to general utility, to establish the validity of the patent. Nor is it alluded to in the tenth section as a cause, for which the patent may be vacated. To be sure, all the matters of defence or of objection to the patent are not enumerated in these sections. But if such an one as that now contended for, had been intended, it is scarcely possible to account for its omission. In my judgment the argument is utterly without foundation. All that the law requires is, that the invention should not be frivolous or injurious to the well-being, good policy, or sound morals of society. The word 'useful,' therefore, is incorporated into the act in contradistinction to mischievous or immoral. For instance, a new

invention to poison people, or to promote debauchery, or to facilitate private assassination, is not a patentable invention. But if the invention steers wide of these objections, whether it be more or less useful is a circumstance very material to the interest of the patentee, but of no importance to the public. If it be not extensively useful, it will silently sink into contempt and disregard."<sup>187</sup>

Even though the device set forth in the patent be quite impracticable, in that precise substantial form, it is not necessarily unpatentable. This is another illustration of the fact that it is the idea which is really patented and not the particular form of embodiment described in the application. This is quite definitely settled by those cases which hold that a patent is infringed by some particular device, even though the latter would work successfully and the one patented would not, in the form described, work as well, if the change by which the successful operation was brought about was due solely to mechanical skill. "A machine can not be pronounced useless or impracticable, because it is susceptible of improvement which will obviate or prevent embarrassments to its most perfect operation. If it could, then it would be the duty of the Courts to pronounce the patent for any machine void, so soon as ordinary mechanical judgment, or even ingenuity, had suggested an improvement which made it perform its desired office more rapidly or more perfectly."<sup>188</sup>

Indeed, a patent is valid even though the device as literally described in it will not operate at all, if it can be made practically usable by mere mechanical skill. Such facts as these came before the court in the case of *Crown Cork & Seal Co. v. Aluminum Stopper Co.*<sup>189</sup> This was a suit for infringement, and defense was made that the complainant's patent, on which his action was based, was void for lack of utility. The de-

<sup>187</sup> He repeats much the same thing in *Bedford v. Hunt*, 1 Mason 302; *Acc. Kneass v. Schuylkill Bank*, 4 Wash. 9, Fed. Cas. 7875.

<sup>188</sup> *Wheeler v. Clipper Mower & Reaper Co.*, 10 Blatch. 181, 189; *Rogers Typograph. Co. v. Mergenthaler Linotype Co.*, 64 Fed. 799; *Lamb Knit Goods Co. v. Lamb Glove Co.*, 120 Fed. 267.

<sup>189</sup> 108 Fed. 845.

fendants introduced, as evidence of this lack of utility, the fact that one Lorenz had tried to make bottle stoppers by following faithfully the directions of the complainant's patent and had been unable to do so successfully. Other witnesses also testified that success could not be attained by following the directions. The trouble was that the flange of the stopper as described was too short to fold tightly over the crown of the bottle opening. A mere slight increase in length of this flange was all that was necessary to obviate the defect. This, the court said, any competent mechanic skilled in the art would have realized, and Lorenz and the others failed merely because they were not sufficiently and properly conversant with the particular art. No invention was needed to remedy the inutility of the device. Hence the court held the patent to be valid, despite the fact that, followed literally, it was not usable.

This court said specifically, "Utility being one of the qualities necessary to patentability, the granting of the patent is prima facie evidence of it; and this is not negatived by the fact that the device is susceptible of improvement, or that like inventions are so far superior to it that they may entirely supersede the use of it. Comparative utility between machines or processes is no criterion of infringement, and comparative superiority or inferiority does not necessarily import noninfringement; nor does it tend to avoid infringement if the defendant's device is simpler and produces better results, unless the cause is due to a difference in function or mode of operation or some essential change in character. Differences in utility do not necessarily import differences of invention. The burden is upon the defendant, in a case like this, to prove want of utility. He must show either that it is theoretically impossible for such a device to operate, or demonstrate by clear proof that a person skilled in the art to which the invention pertains has endeavored in good faith to make the patent work, and has been unable to do so. One of the reasons for the failure of the experiments of Lorenz and Hall may be found in the fact that they followed closely the directions in the drawing of the Painter patent as to the dimensions of the

devices shown therein. The object of the drawings filed in the patent office is attained if they clearly exhibit the principles involved, and, in a case like this, rigid adherence to the dimensions thus exhibited is not required or expected, and, if an intelligent mechanic would so proportion the dimensions as to secure practical results, inutility is not demonstrated by experiments with material identical in form and proportion of parts with the drawings in the patent. The special reason assigned for lack of utility consists in the shortness of the flange of the cup which constitutes the bottle stopper, and increase in the length of the flange would cure the defect. That is so obvious that no inventive faculty need be invoked to suggest it, and the learned counsel for the defendants admits in his argument that the bottle stopper of Fig. 6 in the Painter patent can be made useful by sufficiently increasing the length of its flange so as to increase the depth of the cup. We cannot think that a decision adverse to the utility and operative-ness of this invention could safely rest on the ill success of experiments made by those who were not specially skilled in the art, and where it is not obvious that they were specially desirous of making their experiments succeed."<sup>190</sup>

Furthermore, if the device as shown in the patent requires the application of something more than mechanical skill to make it operate successfully, the courts have not declared the patent invalid; they have declared that the improved and operative device is itself an invention, so *different* from the inoperative one as not to be anticipated by it.<sup>191</sup>

This doctrine, that practical usability is not necessary to patentability, and is not included in the "usefulness" of the statute, seems to be a perfectly logical and desirable one. It offers a maximum of protection without any deleterious result. If it develops that a device has been patented which will not work in any practical way and can not by mere mechanical change be made usable, no harm whatever is done by the issue of the patent. It secures to society no knowledge of

<sup>190</sup> Acc. Brunswick-Balke-Collender Co. v. Backus etc. Co., 153 Fed. 288.

<sup>191</sup> See the discussions under utility as evidence of invention, and unsuccessful experiments as anticipation.

any value to be sure; but the public has not been deprived of anything which it could possibly desire. If it could be asserted that the public was actually deprived of something, in being precluded from the use of the subject matter covered by the patent, the very claim itself would demonstrate beyond contradiction the fact that the device is actually of some use. On the other hand, the issue of a patent for a possibly inoperative or inutile device may be of great advantage to the patentee. Its seeming inutility may be due merely to mechanical defects which anyone skilled in the art can remove. If there is ever call for the device, within the life of the patent, the patentee should have, as the statute provides, the monopoly of response to that call. If a change of circumstances should make usable a device theretofore wholly futile, the patentee should have the protection to which he is entitled for having revealed the information whereby the newly developed need may be satisfied. If the information which the patentee has given could not be made useful by mechanical skill whenever needed, or if the thought of using it to satisfy the newly developed need itself amounted to invention, the existence of the patent would not prevent the maker of the inventive changes or the originator of the new and "non-analogous" use from putting his own ideas into practice.<sup>192</sup>

There is just one possibility in which the valid patenting of an inutile device might result harmfully to the public. A later inventor might evolve an *addition* to the inoperative device which, when used as a part of the patented device, or in connection with it, would make it operate successfully. The later invention could not be used alone. In such case it is conceivable that it could not be used at all without the consent of the patentee of the foundational device. In all probability, however, the courts would hold, under such circumstances, that the later device was not a mere patentable addition to the already patented device, but that the later inventor was entitled to a patent for an entirely new device, which did not infringe and was not anticipated by the earlier unsuccessful de-

<sup>192</sup> See discussion under "new use for an old device."

vice. It is not difficult to comprehend that a device which works may be an entirely different device from one which does not work, even though the successful one contains, as an element of itself, the device which failed of success. This is seemingly the actuality in many of the cases holding devices not to have been anticipated by similar but unsuccessful experiments or by other unsuccessful forms of prior knowledge. It does not appear, however, to have been specifically considered by the courts.

As a matter of fact, the charge that a patent is void for lack of utility can by its very nature hardly come before a court for consideration. The only person in a position to make such a charge would be one desiring himself to use the patented device. It could not be brought up as an abstract proposition. It could not be brought up by a patentee seeking to avoid an allegation of lack of novelty in his own patent. In the latter case, if the knowledge set up as anticipation did in fact amount to anticipation, it would do the patentee no good whatever to answer that the patent in which the anticipating knowledge was shown was *void*. The *prior knowledge* would remain as proved, whether covered by a valid patent or open to the public. In such circumstances, the inutility of the earlier device could be set up, not as affecting the validity of the patent for it, but only as showing that it was not identical with the later device. The only possible way, therefore, in which the invalidity of a patent, because of lack of usefulness in the device covered by it, could be called into issue, is by its being set up in answer to a charge of infringement. An alleged infringer might answer, as has been done, that the complainant's patent was itself void for lack of utility. But, on the face of it, such a charge could not be sustained. If the defendant in such a case were in fact *infringing*, his device must be substantially the same as the one covered by the patent. The very fact that the infringer was using the equivalent of the patented device, and thereby infringing, would be

conclusive evidence against him that the patented device could be used, that it was in fact "useful."<sup>193</sup>

Some slight confusion has been caused by the failure of courts to recognize the distinction between comparative utility, as showing the difference between inventions, and usefulness, as necessary to the validity of a patent. An example of this appears in *Bliss v. The City of Brooklyn*.<sup>194</sup> Here, a patent had been issued for a particular form of hose coupling. Suit was brought against the city, for infringement of this patent. By way of defense it was contended that the device shown by the patent was "worthless, and the patent, for this reason, invalid." The court said, "The law upon the subject of utility is not in doubt. No particular amount of utility is required to render an invention patentable, but there must be some. When the invention is shown to be worthless, the patent must fail. Such appears to be the case in the present instance. The evidence fails to disclose any instance where the combination described in the reissued patent of 1869 has been successfully used. The plaintiff himself testifies, that he does not know of any such coupling having been found to be of practical use. Although he sells couplings, he never sold any such, and only recollects three instances where their use has been attempted. His testimony satisfies me that the combination described in the patent here relied on proved inoperative and worthless." On this ground the court held the patent to be invalid. It might be very pertinently asked, why the city was using the device if it were in reality useless. - The answer, as shown by the facts, is that the city was not using the device covered by the patent at all. Its device contained an additional feature, a peculiar lug which served to remedy the defects of the earlier device. "The introduction of this lug," said the court, "makes the combination a different combination from that described in the plaintiff's patent of 1869. But, it is said, that the introduction of the lug is simply an improvement. I cannot see

<sup>193</sup> "The patent was itself evidence of the utility of Claim 4, and the defendant was estopped from denying that it was of value" (dictum) *Westinghouse Co. v. Wagner Mfg. Co.*, 225 U. S. 604, 616.

<sup>194</sup> 10 Blatch. 521.



consider it. The two combinations are distinct, because they have different elements and attain a different result. In the one combination, no lug appears, and no practical result is attained. The introduction of the lug, for the first time produced a combination which accomplished any useful result. An added element, which increases the efficiency of a combination, of itself effective, is of the nature of an improvement; but, when the added element is essential to the production of any useful result, such an addition is not an improvement, but its use gives birth to the only patentable, because the first useful, combination."

The real ground of the decision, therefore, appears to have been lack of substantial identity between the two devices, as demonstrated by the inutility of the earlier one. It was quite outside the scope of the case, and unnecessary, to hold that the patent sued on was invalid.<sup>195</sup>

That "useful" as employed in the statute appertains to the *purpose* of the device rather than to the device itself, is further indicated by the few cases in which patents have been declared invalid for lack of utility. One of the most illuminating of these cases is that of *Rickard v. DuBon*.<sup>196</sup> The complainant here had secured a patent for a process of treating tobacco leaves, while still growing, in such a way as to produce spots upon them. The alleged purpose of the invention was to improve the combustion properties of the leaves. The court dismissed the suit, saying "The patent shows upon its face that it is intended to secure a monopoly in the art of spotting growing tobacco, without reference to improving its quality. The only fact that lends color to the theory that the treatment of the leaves by the patented process will improve the quality is that tobacco rich in organic salts of potash absorbed from the soil has a porous carbon, and is therefore of superior burning quality. But tobacco in which lime replaces the potash has to that extent a compact carbon, and will extinguish rapidly. According to the specification, lime can be

<sup>195</sup> In *Gibbs v. Hoffner*, 19 Fed. 323, "usefulness" is very evidently confused with lack of inventive novelty in view of the prior state of the art.

<sup>196</sup> 103 Fed. 868.

substituted for potash in applying the process of the patent. And the claims of the patent cover a treatment by any alkali. In authorizing patents to the authors of new and useful discoveries and inventions, congress did not intend to extend protection to those which confer no other benefit upon the public than the opportunity of profiting by deception and fraud. To warrant a patent, the invention must be useful; that is, capable of some beneficial use as distinguished from a pernicious use."

In another case,<sup>197</sup> it was said, "In this case the verified answer not only denies that the invention is new and useful, but alleges a specific fact, which, if true, disposes of the question of utility. It charges directly that the apparatus is used for gambling purposes, and that it cannot be used for any other purpose. Clearly, this is an allegation which, under the rule, should be treated as testimony in favor of the defendants, and, in view of the fact that the complainant has introduced no testimony to support the patent, it is, in my judgment, sufficient to entitle the defendants to a decree in their favor."<sup>198</sup>

It is to be observed that this doctrine of invalidity is restricted to those cases in which the device can be utilized for an undesirable and "useless" purpose only. The fact that it may be used in an immoral, harmful, or otherwise undesirable way does not deprive it of patentability, if it is capable of a beneficial use also. Thus, in *Fuller v. Berger*,<sup>199</sup> the patented device was a bogus-coin detector for coin operated slot-machines. It appeared that the complainants, who were assignees of the inventor, had never used the device, nor allowed its use, on anything except gambling machines. The court found that there was no element of chance necessarily connected with the use of the detector, and that it could be applied to perfectly legitimate machines, as well as to those used for gambling, and would work on them equally well. It was decided there-

<sup>197</sup> *Schultze v. Holtz*, 82 Fed. 448.

<sup>198</sup> *Animarium Co. v. Filloon*, 102 Fed. 896; *Mahler v. Animarium Co.*, 111 Fed. 530.

<sup>199</sup> 120 Fed. 274.

fore, that although the device could be used for immoral and harmful purposes, more readily, perhaps, than for innocuous ones, and had been only so used, it could not be declared unpatentable on that account.<sup>199a</sup>

<sup>199a</sup> It may be noted that while, as the foregoing discussion points out, the utility of an invention has nothing to do with its validity, the Patent Office occasionally takes an opposing position. It has been known to refuse patents on the ground that the alleged invention was impractical and would not work.

## CHAPTER IV

### THE PERSON ENTITLED TO A PATENT

ONLY AN INVENTOR IS ENTITLED TO APPLY for a patent for the invention. The patent itself may, if the inventor requests, be issued to another,<sup>200</sup> but the same section of the statute which provides for this declares "in all cases of an application by an assignee for the issue of a patent, the application shall be made and the specification sworn to by the inventor or discoverer." Another section provides<sup>201</sup> "The applicant shall make oath that he does verily believe himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition or improvement for which he solicits a patent." The only exception to the requirement that the inventor himself must apply for the patent is that of § 4896 which provides that, "When any person, having made any new invention or discovery for which a patent might have been granted, dies before a patent is granted, the right of applying for and obtaining the patent shall devolve on his executor or administrator, in trust for the heirs at law of the deceased, in case he shall have died intestate; or if he shall have left a will disposing of the same, then in trust for his devisees, in as full manner and on the same terms and conditions as the same might have been claimed or enjoyed by him in his lifetime; and when any person having any new invention or discovery for which a patent might have been granted becomes insane before a patent is granted the right of applying for and obtaining the patent shall devolve on his legally appointed guardian, conservator, or representative in trust for his estate in as full manner and on the same terms and conditions as the same might have been claimed or enjoyed by him while sane; and when the application is made by such legal representatives

<sup>200</sup> § 4895.

<sup>201</sup> § 4892.

the oath or affirmation required to be made shall be so varied in form that it can be made by them. The executor or administrator duly authorized under the law of any foreign country to administer upon the estate of the deceased inventor shall, in case the said inventor was not domiciled in the United States at the time of his death, have the right to apply for and obtain the patent. The authority of such foreign executor or administrator shall be proved by certificate of a diplomatic or consular officer of the United States. The foregoing section, as to insane persons, is to cover all applications now on file in the Patent Office or which may be hereafter made."

With this exception, a patent which has been issued upon the application of one who is not the inventor of the device thereby covered is void. It is no defense to this invalidity that the application was made with the express consent of the inventor. In *Kennedy v. Hazelton*,<sup>202</sup> the defendant had contracted to assign to plaintiff all patents which he might thereafter obtain from the United States or Canada for inventions appertaining to steam boilers. After this contract he did invent an improvement on steam boilers. In order to evade the effect of his contract he entered into an arrangement with one Goulding whereby application for a patent for this invention was to be made in Goulding's name as inventor, though at the defendant's expense. Goulding, then, "at the request and by the procurement of the defendant" filed an application and the patent was granted. He then assigned it to defendant. Plaintiff brought suit in equity to compel defendant to assign this patent to him, according to the terms of the contract spoken of. The court refused this request on the ground that it could not compel the assignment of an absolutely void patent, and referred the plaintiff to an action at law for breach of contract. In finding that the patent issued to Goulding was void the court said, "The patent law makes it essential to the validity of a patent, that it shall be granted on the application, supported by the oath, of the original and first inventor (or of his executor or administrator), whether the patent is issued to him or

<sup>202</sup> 128 U. S. 667.

to his assignee. A patent which is not supported by the oath of the inventor, but applied for by one who is not the inventor, is unauthorized by law, and void, and, whether taken out in the name of the applicant or of any assignee of his, confers no rights as against the public. Rev. Stat. §§ 4886, 4920.

“The patent issued by the Commissioner to the defendant as assignee of Goulding is only prima facie evidence that Goulding was the inventor of the improvement patented; and the presumption of its validity in this respect is rebutted and overturned by the distinct allegation in the bill, admitted by the demurrer, that the defendant, and not Goulding, was the inventor.

“As the patent, upon the plaintiff’s own showing, conferred no title or right upon the defendant, a court of equity will not order him to assign it to the plaintiff—not only because that would be to decree a conveyance of property in which the defendant, has, and can confer, no title but also because its only possible value or use to the plaintiff would be to enable him to impose upon the public by asserting rights under a void patent.”<sup>203</sup>

Even if the true inventor joins in making application with some one else who was not jointly an inventor with him, the patent is void. Conversely if an invention has been the joint production of two persons, an application by one of them alone as inventor is insufficient to support a patent. In the words of the court,<sup>204</sup> “it is one thing to say that the machine was invented by Louis Royer, for example, and quite another thing to say that it was invented by Herman and Louis Royer. If this machine was invented by Herman and Louis, then it would be untrue to say that it was invented by Louis only or by Herman. If, on the other hand, it was invented solely by Louis or solely by Herman, then it would be equally untrue to say that it was invented by Herman and Louis; and you are to understand the law to be that if, in this respect, the patent contains a statement which is untrue, and not in accordance

<sup>203</sup> Hammond v. Pratt, 16 O. G. 1235.

<sup>204</sup> Royer v. Coupe, 29 Fed. 358, 363; Hartshorn v. Saginaw Barrel Co., 119 U. S. 664.

with the facts, then the penalty which the patentee pays is that his patent is absolutely void, and of no effect."<sup>205</sup>

*Effect on real inventor's rights of another's application.* Just how the rights of the real inventor would be affected by an application made in the name of some one else is not certain. If the application were made without the consent, express or tacit, of the true inventor, his right would not be in any way derogated thereby. On the other hand, if the true inventor, knowing that he was the inventor, should consciously permit application to be made by another as inventor, it is highly probable that this would be considered as conclusive evidence of his intent to abandon his invention to the public. To deliberately allow another to ask for a patent would be tantamount to a gift of the invention to the world, since the inventor would be presumed to know that the patent, if issued to the other, would be void and of no protection against use by the world. The only doubt might arise in those cases where one who was a joint inventor had applied for a patent in his own name, as sole inventor, honestly believing that to be the fact. Or conversely, it might arise in cases where an inventor honestly be-

<sup>205</sup> *Welsbach Light Co. v. Cosmopolitan, etc. Light Co.*, 104 Fed. 83, 43 C. C. A. 418; *DeLaval Separator Co. v. Vermont Farm Machine Co.*, 135 Fed. 772, 68 C. C. A. 474, "It is true that the testimony of an inventor in derogation of the validity of his own patent is usually open to suspicion; and in case like this, where he has made oath, for the purpose of obtaining a joint patent, that he and another inventor were the joint inventors of the subject-matter, the court should reject his subsequent testimony to the contrary, unless it carries a clear conviction that he did not intend to falsify originally, but made the oath under misapprehension or mistake. In this case the applicants were foreigners, supposedly unfamiliar with our law of patents; and they had agreed to be joint owners of the patent. Each had devised improvements which were within its general scope, and those which had been the work of Reuther were disclosed and illustrated in the specification and drawings, as well as were those which were the work of Melotte. Thus both had contributed to the invention in its entirety. Under these circumstances it is not strange that they did not discriminate between the things devised and the things which were not necessarily covered by the claims, and that they should have considered themselves joint inventors of the entirety, although some of the improvements were independently devised by one and some of them by the other." *Heulings v. Reid*, 58 Fed. 868.

lieved another to be entitled to joint credit, and made application, accordingly, jointly with the other. Whether such an application, would, of itself, preclude the true inventor from making another application when he should discover his mistake seems not to have been definitely passed on by the courts.

**RIGHT NOT RESTRICTED TO PARTICULAR PERSONS.** The right to obtain a patent is not restricted to any class of persons as respects sex, age, race, citizenship or anything else. According to the statute, "Any person" who has made an invention may have a patent therefore. Within the universal scope of this privilege come aliens,<sup>206</sup> married women, and children.<sup>207</sup> While a corporation is a "legal person," in some senses, it could not, of course, apply for a patent; it has no mind of its own with which to invent anything. But it may be made the assignee of a patent, and a patent, applied for by the inventor, may issue in the name of a corporation.

**PATENT MAY BE ISSUED IN NAME OF ANOTHER.** Although only the inventor may apply for a patent, the patent itself may be issued to anyone else whom the inventor designates, by an assignment of his right which has been put on record in the Patent Office.<sup>418</sup> The exclusive right of enjoyment of the invention is then, of course, in the assignee, the patentee named. The patent when issued is not rendered invalid by the fact that the person in whose name it was asked to be issued, and to whom it was eventually granted, was no longer living at the date of issue. The statute reads in the disjunctive, in providing that the patent shall grant the monopoly to the "patentee, his heirs, or assigns." Hence if the patentee himself be dead, the grant takes effect in his heirs or assigns. This circumstance, the death of the patentee before actual issue of the patent, was one of the elements in the case of DeLaVergne

<sup>206</sup> *Shaw v. Cooper*, 7 Peters 292.

<sup>207</sup> *Fetter v. Newhall*, 17 Fed. 841. R. S. Title XI, § 480, "All officers and employes of the Patent Office shall be incapable, during the period for which they hold their appointments, to acquire or take, directly or indirectly, except by inheritance or bequest, any right or interest in any patent issued by the Office."

<sup>418</sup> § 4895 R. S.



Machine Co. v. Featherstone.<sup>419</sup> The defendant, on suit for infringement, set up the contention that the patent was invalid because of that circumstance; that it was a requisite in all valid grants that there be a grantee *in esse*, a person capable of receiving the grant *in praesenti*;<sup>420</sup> that "heirs" was intended only to indicate an estate of more than life, and was not a word of purchase. The lower court held the patent void on this account. The Supreme Court reversed this decision, saying, "We are to remember that it is to be assumed that James Boyle had made a useful invention and taken all the necessary steps to secure the benefits to be derived therefrom; and that in view of the policy of the government to encourage genius and promote the progress of the useful arts, by securing to the inventor a fair and reasonable remuneration, a liberal construction in favor of those who claim under him must be adopted in the solution of the principal question before us. It is also to be observed that, under the practice of the Patent Office, a considerable time necessarily elapses after a patent for an invention is allowed before it actually issues; that the applicants often reside at a great distance; that the cases when an inventor dies between the date of the application and the allowance, and the allowance and the issue, must be of frequent occurrence; and that this may happen when neither the office nor the inventor's solicitors are aware of the death. The reflection is a natural one that Congress, which, in framing the provisions of the patent laws, must be presumed to have had these possible occurrences in mind, did not contemplate that all patents issued under such circumstances should be invalidated by the death of the inventor. What, then, was the intention of Congress in providing for a grant to the "patentee, his heirs or assigns?" Must it be construed as merely a personal grant to the individual, or may his personal representatives be treated as grantees? In view of these considerations, as the language of the statute admits of a construction which,

<sup>419</sup> 147 U. S. 209.

<sup>420</sup> Citing *Galloway v. Finley*, 12 Pet. 264; *Galt v. Galloway*, 4 Peters 332, holding a patent of land to a dead man and his heirs to be void. *McDonald v. Smalley*, 6 Pet. 261.

in sustaining the grant, effectuates the settled policy of the government in favor of inventors, our judgment is that that construction should be adopted, and that the statute should be read in the alternative, and the grant be treated as made to the patentee or his heirs or assigns."

WHO IS THE INVENTOR. The inquiry then arises, who is the inventor of any particular device. This can only arise subsequently to the inquiry as to whether or not an invention has been made. It differs essentially from the latter inquiry in this way also:—the one assumes that some particular person has produced a device and seeks to determine whether or not that production amounted to invention; the other assumes that a certain device is an invention and seeks to determine to whom the credit for that invention shall be given. The one question is "what is an invention" and, correlatively, who is *an* inventor"; the other "who is the inventor," and, as a basis for the answer, "what is *the* invention." It is with this inquiry that we have now to deal. To whom belongs the credit for any particular invention?

Since, as we have said before, an invention is an idea, the inventor is the person who has conceived the particular idea. The difficulty in answering the inquiry arises out of the fact that the idea of *means* is not always clearly delimited from the idea of the *result* sought to be produced and from the actual substantial *embodiment* of the idea. If the same person has conceived the idea of the result desired, and of the means of reaching or producing it, and has himself embodied the idea, there is, of course, no question. That person is the inventor. An issue arises, however, when different persons have accomplished the separate parts of the whole work.

In the case of the electric telegraph, for instance, it is comprehensible that one person might have conceived and promulgated the idea of using electricity for the transference of intelligence. He might have been the first to suggest that it would be a very desirable and beneficial result, if it could be accomplished. Another, starting with this idea, might evolve an idea of means for accomplishing this result; he might de-

wise the apparatus by which it could be done. A third person might do the technical work of constructing this apparatus, of making the necessary coils and keys, even of selecting the type of wire that would best carry the current and figuring the power of the magnets necessary. In such case it is evident that only the second of these three persons would be entitled to reward as an inventor. The first has been, perhaps, a dreamer and a visionary, but he has given the world nothing more than, at most, an aspiration toward which to strive. He has not furnished anything whatsoever toward the attainment of that aspiration. He has conceived a result, only; not the idea of an art, machine, manufacture, or composition of matter. The third person has been nothing more than a mechanic. He has simply embodied the idea of the second person and made what the second directed him to make, using his technical skill in making it as effective as possible. He has done only what any competent mechanical engineer skilled in that particular trade could have done. The second person, however, has truly given something to the world. He has given a knowledge of how to reach the desirable result pointed out by the first.

As this example is put, the division of accomplishment is clear and sharp. But is it conceivable that the line of distinction might almost be undiscernable. Suppose, for instance, number two had not conceived a distinct idea of means, but had only suggested that electricity might be used for the transmission of intelligence by means of some arrangement whereby the current could be interrupted and the interruptions recorded. If, from this suggestion, the third man had evolved an actual arrangement of magnets and keys whereby this recorded, or audible, interruption could be systematically accomplished, to whom then would belong the credit of the invention? The first of these gave something more than a general idea of result—if not precisely an idea of means, it was at least an idea of result by means of which to produce another result. On the other hand, the second man has done something more than merely to carry out the directions of the

first. He has created something, the particular means, by which the suggested results are accomplished. Yet what he did might be something that any competent person trained in electrical engineering could have done if given the fundamental suggestion produced by the other person. If this be the case, the benefit to the public is due to the first of the two.

Cases such as this arise not infrequently, and it devolves upon the court to decide which of the two is entitled to the reward given for invention. The question is absolutely impossible of determination, of course, by any rule of thumb. Like practically all the other issues of the patent law, each case must be decided in accord with its own particular circumstances. Each court must decide for itself what is the real invention, and which of the alleged inventors has in fact given it to the world. If anyone might have envisioned the result, but not any technician could have produced the means of attaining it, credit belongs to the latter. If however it took more than the mere ordinary course of mind, under the circumstances, to think of the result in such terms of means, however indefinite, that any technician could thereafter accomplish it, the credit is due the abstract thinker. The only value which particular precedents can have is to indicate the various factors which have influenced other courts.<sup>208</sup>

<sup>208</sup> *Pitts v. Hall*, 2 Blatch. 229. "Now, there is no doubt that a person, to be entitled to the character of an inventor, within the meaning of the Act of Congress, must himself have conceived the idea embodied in his improvement. It must be the product of his own mind and genius and not of another's. Thus, in this case, the arrangement patented must be the product of the mind and genius of Carey, and not of Bowers' or Fowler's. This is obvious to the most common apprehension. At the same time, it is equally true that, in order to invalidate a patent on the ground that the patentee did not conceive the idea embodied in the improvement, it must appear that the suggestions, if any, made to him by others, would furnish all the information necessary to enable him to construct the improvement. In other words, the suggestions must have been sufficient to enable Carey, in this case, to construct a complete and perfect machine. If they simply aided him in arriving at the useful result, but fell short of suggesting an arrangement that would constitute a complete machine, and if, after all the suggestions, there was something left for him to devise and work out by his own skill or ingenuity,

In general it may be said that when the concept is that of a definite machine, manufacture or composition of matter, the one who conceives it is the inventor, rather than the one who ingeniously figures out the way to embody the concept. This is illustrated by the case of *Huebel v. Bernard*.<sup>209</sup> Bernard had conceived the idea of overcoming certain objections in the customary type of sponge and soap holders for bath tubs, by making the holder of a peculiar form. He employed Huebel to make a holder for him and pointed out the distinctive and dominating feature of his improvement. He did not give Huebel any definite drawing or specifications however. Huebel having done the work claimed the invention. The court admitted that he had "made a neater and more perfect device than that in the mind of Bernard, at the time of the communication of his idea," but they credited the invention to Bernard, on the ground that Huebel had used only mechanical skill. On the other hand, the idea of an indefinite machine, etc., only vaguely conceived in its details, and known by its results rather than by its construction, is really only an idea of a result to be accomplished—namely the creation of a machine having the value or the effect of the machine desired. And if the concept is one of a desirable result only, it is not a patentable invention (if "invention" at all), and the person in order to complete the arrangement, then he is, in contemplation of law, to be regarded as the first and original discoverer. On the other hand, the converse of the proposition is equally true. If the suggestions or communications of another go to make up a complete and perfect machine, embodying all that is embraced in the patent subsequently issued to the party to whom the suggestions were made, the patent is invalid, because the real discovery belongs to another. These are all the observations I shall trouble you with on the first branch of the case. It is an important question, and, in one aspect of the case, puts an end to the controversy. It is for you to say, after weighing carefully the whole evidence who is entitled to the merit of this improvement—who invented and perfected it. I do not mean, who constructed the first machine, but who conceived and gave practical form and effect to the ingenious arrangement which constitutes the improvement engrafted on the old machines." *Agawam Co. v. Jordan*, 7 Wall. 583, 603; *United Shirt & Collar Co. v. Beattie*, 149 Fed. 736.

<sup>209</sup> 15 App. D. C. 510.

entitled to a patent is he who conceives the means of making the desired machine, or otherwise accomplishing the desired result. This is illustrated by *Forgie v. Oilwell Supply Co.*<sup>210</sup> The patent here involved was for a means of unscrewing certain oil well tools. Formerly this had been done by manual effort and was accomplished with great difficulty. Forgie who was familiar with the methods in use and their unsatisfactoriness, conceived the idea that it would be possible to accomplish the result by mechanical power of some sort. There had been recently invented by one Barrett a hydraulic lifting jack and Forgie suggested to Barrett that his jack could probably be applied in some way to the purpose. Barrett then made certain changes in the jack and adapted it to be used in a horizontal position to effectuate the end desired. Forgie obtained a patent for this device as his own invention, which was the patent sued on. The suit was dismissed on the ground that if there was any invention at all in the device, the credit belonged to Barrett, not to Forgie. "Undoubtedly," said the court. "Mr. Forgie did describe to Mr. Barrett the usual method of coupling and uncoupling the tools with the old appliances, and the great necessity for overcoming existing difficulties. He conceded the value and power of the jack invented by Mr. Barrett, and repeatedly said that, if it could only be made applicable to this work of coupling and uncoupling oil-well tools, he thought it would do the work with ease. But there was the rub. How could it be so applied? Evidently Forgie had not the slightest idea as to this, for nowhere does it appear that he made the slightest suggestion, of any practicable benefit, looking to this end. . . . "Admitting that he may have had some conception of what was wanted—which, however, is very doubtful—mere conception is not invention. It is the crystallizing of that conception into the invention itself, operative and practical, that entitles the inventor to the protection of letters patent."

Between these two cases is the wide field in which decisions can be made only as the mentality of each particular judge.

<sup>210</sup> 58 Fed. 871.

acting upon the circumstances shown by the evidence, concludes that the idea was the practical invention, or that it was only an idea of result, the means of accomplishing which was invented by the one who embodied the particular device used thereto.

The fact that one has been doing certain mere mechanical work for another, during the process of which an accident reveals a result not expected, and so new that the use of that process to produce the result can be patented, does not *ipso facto* entitle the workman to the patent. This came before the court in *Minerals Separation Co. v. Hyde*.<sup>211</sup> The patentees were engaged in research work to find a process of separating mineral matter from crushed ore more economical than those in use. During the experiments, a wholly unthought of method was revealed by accident, and a patent secured for it. The *results* that occurred during the experiment were clear to anyone, and the workman in charge could probably have reproduced them at will by repeating his actions by rote. The principles or natural laws which produced the results, that is to say, the reason for the particular results, had to be thought out. When the patent came into litigation, claim was made that the patentees were not the original discoverers of the process patented because "an employee of theirs happened to make the analyses and observations which resulted immediately in the discovery." The court dismissed this contention without further comment than that, "The record shows very clearly that the patentees planned the experiments in progress when the discovery was made; that they directed the investigations day by day, conducting them in large part personally and that they interpreted the results."

It does not appear from such facts as are given that the employee had any realization whatever of the desirableness of the result. The "invention" lay before his senses; his mode of operation had produced certain results, but he himself had conceived no idea of relation between method and result. It remained for his employer to do that; to perform the mental

<sup>211</sup> 242 U. S. 261.

operation which constitutes invention. If this assumption is correct, the decision of the court is wholly in harmony with those cases holding that unrecognized events, though prior in time, do not serve to negative novelty in an invention. The public has never been treated as having been in possession of those transient combinations of circumstance producing a certain result when the relation or circumstance and result has not been recognized. He who later gives knowledge thereof to the world, gives it something new.

If the employee had recognized the sequence of circumstance and result in such a way as to bring into being a conscious appreciation thereof, so that he might have applied it to practical use, it is doubtful if his claim to the title of inventor could have been avoided. It is well settled that an inventor's ignorance of the principle by which a desired result is produced does not detract from the patentability of his idea of means. All he needs to know is that a given result can be produced by certain means. The employee in this case would have been the *first* to have conceived this particular means or method of producing the desired result and there is no reason why, in such case, he should not be considered the true inventor. The *right to a patent*, however, might be vested in the employer by the terms of the employment.

JOINT INVENTIONS. The difficulty of determining who is the inventor of a particular device would seem to be ameliorated to some extent by the theory of "joint" inventors. If it is possible that two or more persons may be equally and jointly entitled to the credit for an invention, the troublesome necessity of attributing it to some one person may often be avoided. The difficulty just discussed is in determining the person to be properly accredited "inventor," where "one suggests an idea in a general way and the other falls in with it and gives it definite practical embodiment." If we can say, as in the case from which the quotation is made,<sup>212</sup> that "the two may be considered joint inventors," an extremely troublesome decision is rendered unnecessary. Judicial opinions and text

<sup>212</sup> *Gottfried v. Phillip Best Brewing Co.*, 5 B. & A. 4, 17 O. G. 675.



books are replete with expressions indicating that inventions may be the joint product of several minds. Patents have been actually issued for joint inventions, and such patents have been sustained by the courts, when their validity was in question on grounds other than the fact of their being to "joint inventors." They have thus been quite indisputably, though obliquely, recognized as possible and proper. Mr. Justice Story discussed this, saying,<sup>213</sup> "A joint patent may well be granted upon a joint invention. There is no difficulty in supposing in point of fact, that a complicated invention may be the gradual result of the combined mental operations of two persons acting together, *pari passu*, in the invention. And if this be true, then as neither of them could justly claim to be the sole inventor in such a case, it must follow, that the invention is joint, and that they are jointly entitled to a patent. And so are the express words of the Patent Act, which declares, that if any person or persons shall allege, that he or they have invention, etc., a patent shall be granted to him or them for the invention."

In *Quincey Mining Co. v. Krause*,<sup>214</sup> a patent issued to two persons, apparently as joint inventors, was attacked for lack of novelty and on the ground that the invention was not really the joint product of their minds. The court answered, "It is next said that the evidence tends to show that this idea of placing the outlet inside of the mortar was the thought of but one of the patentees, and therefore could not be the subject of a joint patent. If a claim covered but a single idea, it would be difficult to conceive how it could be patented by two; but, when a claim covers a series of steps or a number of elements in a combination, the invention may well be joint, though some of the steps or some of the elements may have come as the thought of but one. Such is the invention here patented, and it would not be fatal to this patent if the fact is that Krause, Sr., gave birth to the best thought connected with a combination claim—which covers more than the place of the location

<sup>213</sup> *Barrett v. Hall*, 1 Mason, 447, 472.

<sup>214</sup> 151 Fed. 1012, 1017.

of the discharge outlet. But it is by no means shown that Krause, Sr., alone solved the problem to be dealt with. The evidence relied upon is altogether too meager to overthrow a patent. To destroy a patent granted for a joint invention, upon the ground that it was the invention of only one of the patentees, would require very clear evidence of a very reliable character. That has not been produced."

Again in *Welsbach Light Co. v. Cosmopolitan Light Co.*<sup>215</sup> The court said, "The patent contains two claims. The first, which is in suit, is for a single thought,—the described improvement in strengthening incandescent mantles, consisting in coating the completed mantle with paraffine or other suitable material. That thought might well have come to one when in bed, and have been put to the practical test the next day, as testified. It is difficult to apprehend how two could have shared in the conception. The second claim, however, is distinctly different. It is for a method of forming incandescent mantles, consisting of a number of steps, the combining of which, to produce the desired result, may well have been the joint achievement of two or more minds."

In commenting upon this case it has been said, "But it is not difficult to conceive of a case where an invention consisting of a 'single thought' might be the product of collaboration of two minds working toward and finally reaching the single decisive step and taking it in step, so to speak, in such unity and simultaneousness that neither of the two could declare under oath which actually produced the 'single thought.'"<sup>216</sup>

It is difficult to comprehend, however, how Athena could have sprung, full panoplied, simultaneously from the heads of Zeus and of Metis also. In the womb of Metis, first, she may have been conceived and then come forth from the head of Zeus, but she could have come simultaneously from both only if both were one. As a child can not be the product of two wombs, so a single thought cannot emerge from two minds. It is true, that thoughts, alike in substance, may originate simultaneously in two minds, but they are two thoughts, despite

<sup>215</sup> 104 Fed. 83; *Worden v. Fisher*, 11 Fed. 505.

<sup>216</sup> Macomber, *The Fixed Law of Patents*, § 704.

their similarity. For *both* thoughts the patent statute has not made provision. It does not provide for a patent to all who have invented something, but authorizes one to the first inventor only. Nor, if it be comprehensible that two minds might produce the same invention coincidentally, has the statute provided for a patent to both. It has simply failed to consider such a case. To assert the contrary would be to maintain that utter strangers, working independently of each other, happening to produce an invention simultaneously, would both be entitled to patents therefore.<sup>217</sup>

The cases in which a patent has been directly attacked because issued to joint inventors are comparatively few before the upper courts. In nearly all of such cases, however, the attack has been sustained on the ground that the invention had not in fact been joint.

It is, therefore, perfectly sound as a matter of logic, and probably correct as a matter of precedent, to say that there can not be such a thing as a joint invention, if the invention be considered as a *single* idea. In such case the idea of means which constitutes the invention must, by its very unity of nature, have emanated from one mind only, and must be credited to but that one mind.

But if an invention can be thought of as a composite of two or more distinct, though co-operating ideas, it is possible for

<sup>217</sup> The wording of the statute, which, to Mr. Justice Story, gave countenance to the assertion that such things as joint inventions and joint inventors were contemplated by it has since been changed. The act of 1836, § 6, makes a partial change from the plural to the singular. It reads, "Any person or persons, having discovered any new and useful art, . . . not known by others before his or their discovery or invention thereof, and not, at the time of his application for a patent," etc. "But before any inventor shall receive a patent for any such new invention or discovery, he shall deliver a written description," etc. "The applicant shall also make oath or affirmation that he does verily believe that he is the original and first inventor." As the statute now stands, however, it is worded wholly in the singular; all words indicating the possibility of a plurality of inventors of a single invention have been eliminated. If this change means anything at all, it may be said to indicate the impossibility of joint invention.

it to be the joint product of two or more minds. The separate ideas which go to make up the invention may emanate from different minds, and the credit may be apportioned accordingly. To the writer, the idea of invention as a concept, which pervades all the law, seems to preclude the possibility of a composite of ideas. The credit seems, logically, to be due to the master mind who welds the lesser ideas into the single perfect whole which constitutes the real invention—the one comprehensive concept of means by which a particular result is to be accomplished. But while this seems the logical and consistent view, the contrary opinions of the courts must be recognized as effective authority, and it must be said that, at least insofar as an invention consists of two or more separable ideas, it may be the product of joint inventors to whom a patent may properly issue.

Joint producers of these several ideas which enter into the composite whole of the invention, are not entitled to joint credit for the invention in all cases. When the ideas which each has contributed are of comparatively equal importance, it is possible that they may be jointly entitled to credit for the whole. But when the ideas of one contributor are insignificant compared with those of the other, when one has evolved the principle idea and the other has merely added minor ideas in elaboration of the main thought, only the first one, the originator of the fundamental idea, is entitled to the patent. In the case of *Agawam Co. v. Jordan*,<sup>218</sup> the defense to a suit for infringement was that the patent was invalid, the invention thereby having been made by another than the patentee, namely by one Winslow. On the trial it appeared that Goulding, who later became the patentee, had nearly completed his device when Winslow suggested certain parts for it as improvements upon the ones that Goulding was using. This suggestion was adopted by him, and parts were accordingly made by Winslow, according to his idea, and substituted in the working model of Goulding's device. They proved to be useful auxiliary parts, and the patent in question was then taken out

<sup>218</sup> 7 Wall. 583.

by Goulding for the whole device, including these parts, as his invention. Of the claim that the invention was Winslow's the court said, "Valuable though it was and is, as aiding in the accomplishment of the desired result, it is nevertheless a great error to regard it as the invention described in the subsequent patent, or as such a material part of the same that it confers any right upon the party who made the suggestion to claim to be the inventor, or a joint inventor, of the improvement, or to suppose that the proof of what was done by that party can constitute any defence, as against the owner of the patent, to the charge of infringement."

## CHAPTER V

### LOSS OF RIGHT TO A PATENT

An inventor who, so far as the character of his production is concerned, is entitled to a patent, may lose that right under certain conditions. His invention may have been, at the time of its creation, new and useful, not known or used by others and not described in any printed publication, nor previously patented; nevertheless he may have so acted as to have deprived himself of the patent privilege. For one thing, the statute specifically provides that an invention, *even though patentable* when made, shall not be patented if it has been in public use or on sale in this country for more than two years prior to the filing of an application for a patent, or if it has been patented or described in any printed publication more than two years previous thereto. Again, an invention can not be patented if it is proved to have been abandoned to the public by the inventor. In the event that the invention were dedicated to the public the right to a patent would be lost to an inventor, as in the case of abandonment, although such a contingency is not expressly covered by the statute.

#### § I. PUBLIC USE OR SALE

The phrase of the statute, "in public use or on sale in this country for more than two years," has been very definitely interpreted by the Supreme Court in a way that speaks for itself.<sup>219</sup> "The statutory clause upon which the second objection (to the validity of the patent) is founded is in the disjunctive. The language is, 'purchase, sale, or prior use' . . . 'for more than two years prior' to the application for the patent. The phrase, 'for more,' as thus used, is loose and inaccurate, and is to be understood as if the language were

<sup>219</sup> Consolidated Fruit Jar Co. v. Wright, 94 U. S. 92.

earlier than 'two years prior,' etc., or as if 'for' were omitted from the sentence. This omission would produce the same effect."<sup>220</sup> It is therefore settled that the use need not have continued during two years, as the statute might seem to indicate, nor need sales have occurred throughout a period of two years. It is sufficient if the use, or the sale, took place earlier than two years before the application, whether it continued during the two years or not.<sup>221</sup>

**SINGLE SALE OR USE.** The only real question involved in this topic is as to what constitutes public use or sale within the meaning of the statute. In the Consolidated Fruit Jar case just quoted the court said, "The defects specified are also in the singular. It follows that a single instance of sale or of use by the patentee may, under the circumstances, be fatal to the patent; and such is the construction of the clause as given by authoritative adjudication." In this particular case there was in fact more than one instance of sale or use. The patentee had made at least two dozen of the jars covered by the later patent. Two of these he gave away and some others he sold, and the court found it to be a fair inference that the recipients of them put them to the use for which they were intended.<sup>222</sup> But in a later case, this authority was followed in holding the right to a patent to be lost because of a single sale

<sup>220</sup> The court quoted *Pitts v. Hall*, 2 Blatch. 235, as follows: "The patentee may forfeit his right to the invention if he constructs it and vends it to others to use, or if he uses it publicly himself in the ordinary way of a public use of a machine at any time prior to two years before he makes his application for a patent. That is, he is not allowed to derive any benefit from the sale or use of his machine, without forfeiting his right, except within two years prior to the time he makes his application." See other authorities therein cited. *Pennock v. Dialogue*, 2 Peters 1; *Swain v. Holyoke Machine Co.*, 109 Fed. 154.

<sup>221</sup> The earlier statutes did not restrict the use or sale, which would destroy the right to a patent, to a time more than two years before the application. Public use or sale within that time, if with the consent of the inventor would preclude him from obtaining a patent. *Pennock v. Dialogue*; 2 Peters 1, 19; *Bates v. Coe*, 98 U. S. 31, 46; *Andrews v. Hovey*, 124 U. S. 694, 719.

<sup>222</sup> Other authorities are cited in the case. *Jenner v. Bowen*, 139 Fed. 556.

and use.<sup>223</sup> The patent involved was for a turbine water wheel. The undisputed evidence showed that a wheel substantially identical to that covered by the patent had been sold, installed and put in operation, by the inventor, a few days more than two years previous to his application for a patent. On this showing of a single sale and use, barely outside the limit of the time allowed, the court held the patent to be invalid, saying "as a general rule, a single unrestricted sale by the patentee of his patented device, embodying his completed invention, is a public use or sale within section 4886, of the Revised Statutes."

**INVENTOR'S ACQUIESCENCE NOT MATERIAL.** The prior use or sale need not, under the present statute, be with the knowledge or consent of the inventor, although under the earlier statutes this was not the case.<sup>224</sup> It is sufficient if public use or sale did occur more than two years prior to the application. This was settled in an elaborate opinion in the case of *Andrews v. Hovey*.<sup>225</sup> The same case had been before the court previously and had come up for a rehearing. After an exceedingly copious citation of authorities and a full discussion of them, the court declared its affirmance of the previous decision, saying, "Under §§ 6, 7, and 15 of the act of 1836, a patent was made invalid if, at the time of the application therefore, the invention had been in public use or on sale, with the consent or allowance of the patentee, however short the time. The second clause of the 7th section (act of 1839) seems to us to clearly intend, that, where the purchase, sale, or prior use referred to in it has been for more than two years prior to the application, the patent shall be held to be invalid, without regard to the consent or allowance of the inventor."<sup>226</sup>

Before the invalidity of a patent can be predicated upon the ground that the device was in public use or on sale more than two years prior to the application on which the patent was

<sup>223</sup> *Swain v. Holyoke Machine Co.*, 109 Fed. 154.

<sup>224</sup> *Shaw v. Cooper*, 7 Peters 292.

<sup>225</sup> 123 U. S. 267. 124 U. S. 694.

<sup>226</sup> *Bates v. Coe*, 98 U. S. 31. *Eastman v. Mayor of N. Y.*, 134 Fed. 844.



granted, there must be very clear and decisive proof that such use or sale did actually take place.<sup>227</sup>

**SECRET USE.** The statute provides that the right to a patent shall be lost through "public use" or some other form of public knowledge. It does not preclude an inventor from using his device *secretly* as long as he desires before applying for a patent. Neither is any restriction upon indefinite secret use read into the statute by the courts. On the contrary the Supreme Court has explicitly said,<sup>228</sup> "Inventors may, if they can, keep their invention secret; and if they do for any length of time, they do not forfeit their right to apply for a patent, unless another in the meantime has made the invention, and secured by patent the exclusive right to make, use and vend the patented improvement. Within the rule, and subject to that condition, inventors may delay to apply for a patent." The exception as stated in this excerpt is obviously incorrect and is characteristic of the looseness of statement with which patent cases are filled. A subsequent inventor could not take out a valid patent, as the court suggests, for the device. His patent would be invalid for lack of novelty, if the secretly used device could be proved. Neither would the first inventor have lost his right merely because a subsequent inventor had produced a like device and put it into use or on sale. By the very words of the statute, the use or sale must have taken place more than two years before the first inventor's application. It may be said therefore, that an inventor does not lose his right to a patent by any length of secret use, unless he fails to apply for a patent until more than two years after a similar device has been used or sold. The cases referred to at the end of this discussion may, however, establish a qualification of this broad doctrine as laid down by the Supreme Court.

Just what constitutes a "secret" use it is utterly impossible to state. Certainly the courts are not prone to recognize a use as secret. What might in ordinary parlance have been called a secret use was held not to be such within the meaning of the

<sup>227</sup> *Cantrell v. Wallick*, 117 U. S. 689; *Penn. Electrical & Mfg. Co. v. Conroy*, 159 Fed. 943.

<sup>228</sup> *Bates v. Coe*, 98 U. S. 31.

patent statute, in the case of *Perkins v. Nassau Card, etc. Co.*<sup>229</sup> This is illuminating as to the attitude of the courts. The facts may be given in its own words. "The patentee made a machine containing his invention in the year 1857, and in 1863 he substituted for it another varying in form and proportions, but not in principle. These machines he used successively in the ordinary way of his business, as a maker of card and pasteboard, until he applied for his patent, in 1876. The specification and model represent precisely the machine of 1863. During the time that the machines were used they stood in the room with several other machines necessary for the other processes of making, drying and coloring pasteboard, and were operated chiefly by one man, Moulton, who was sometimes assisted by one other. About 23 workmen were employed upon the other parts of the manufacture. The doors of the factory were usually kept locked, and each of the 25 workmen had a key. How many visitors came to the factory is one of the disputed points. There were occasional visitors, but not many persons came to the factory from mere curiosity. During some months Mr. Denison, a friend of the patentee, was given the use of an upper room for making tags, and his workmen passed in sight of the pasting machine. It is not proved that any workmen, visitors, or other persons acquired or divulged a knowledge of the mode of operation of the machine, until the workman Moulton gave that information to the defendants, in 1876." On these facts it was held that the device had been in public use.

This doctrine, that when the public might have acquired knowledge of the invention, through its use, it will be deemed to have such knowledge, was carried into extreme form in the case of *Egbert v. Lippmann*.<sup>230</sup> The patent sued on covered a peculiar form of corset steels. It appeared from the evidence that a woman, who afterward became the wife of the inventor, had complained of corset steels breaking frequently. To remedy this the inventor devised the steel, which he after-

<sup>229</sup> 2 Fed. 451.

<sup>230</sup> 104 U. S. 333.

ward patented, and gave her a set to wear. Later he gave her another set. This set he showed to one other person. In the words of the court, "This is the evidence presented by the record, on which the defendants rely to establish the public use of the invention by the patentee's consent and allowance. The question for our decision is, whether this testimony shows a public use within the meaning of the statute.

"We observe, in the first place, that to constitute the public use of an invention it is not necessary that more than one of the patented articles should be publicly used. The use of a great number may tend to strengthen the proof, but one well-defined case of such use is just as effectual to annul the patent as many. *McClurg v. Kingsland*, 1 How. 202; *Consolidated Fruit-Jar Co. v. Wright*, 94 U. S. 92; *Pitts v. Hall*, 2 Blatchf. 229. For instance, if the inventor of a mower, a printing-press, or a railway-car makes and sells only one of the articles invented by him, and allows the vendee to use it for two years, without restriction or limitation, the use is just as public as if he had sold and allowed the use of a great number.

"We remark, secondly, that, whether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known. If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee, without limitation or restriction, or injunction of secrecy, and it is so used, such use is public, even though the use and knowledge of the use may be confined to one person.

"We say, thirdly, that some inventions are by their very character only capable of being used where they cannot be seen or observed by the public eye. An invention may consist of a lever or spring, hidden in the running gear of a watch, or of a ratchet, shaft, or cog-wheel covered from view in the recesses of a machine for spinning or weaving. Nevertheless, if its inventor sells a machine of which his invention forms a part, and allows it to be used without restriction of any kind the use is a public one."

"Tested by these principles, we think the evidence of the

complainant herself shows that for more than two years before the application for the original letters there was, by the consent and allowance of Barnes, a public use of the invention, covered by them. He made and gave to her two pairs of corset-steels, constructed according to his device, one in 1855 and one in 1858. They were presented to her for use. He imposed no obligation of secrecy, nor any condition or restriction whatever. They were not presented for the purpose of experiment, nor to test their qualities. No such claim is set up in her testimony. The invention was at the time complete, and there is no evidence that it was afterwards changed or improved. The donee of the steels used them for years for the purpose and in the manner designed by the inventor. They were not capable of any other use. She might have exhibited them to any person, or made other steels of the same kind, and used or sold them without violating any condition or restriction imposed on her by the inventor."

This opinion of the court was undoubtedly greatly influenced by the fact that during the eleven years which intervened between the date of the invention and that of the application the same device had come into very general use through the revelation of subsequent inventors. As the court said, "It is fair to presume that having learned from this general use that there was some value in his invention, he attempted to resume, by his application, what by his acts he had clearly dedicated to the public." It is extremely doubtful if, had this not been the case, the court would have held the slight use shown to be such as would invalidate the patent. But under the circumstances, the statements of the court in respect to public use, while they seem wholly correct, were quite unnecessary. There was indubitable general public use, more than two years before the application, by others than the patentee or his representatives. Under the rule, discussed above, that the use need not be with the consent of the patentee to have the effect of invalidating a patent, this use by others, arising out of their own discoveries, clearly rendered the patent void. The court got into its discussion of whether the

patentee's own use was sufficient to avoid the patent, in order to eliminate the question, which it appears to have considered unsettled at that time, whether unauthorized use by others would have the same effect.<sup>231</sup>

As is suggested in the foregoing cases, the mere fact that an invention is concealed from view when in use does not prevent such use from being public within the meaning of the statute. In *Hale v. Macneale*,<sup>232</sup> the invention was a tapering bolt for holding together the series of plates which formed the walls of a certain type of safe. When in place it was absolutely hidden from view and could be examined only by destruction of the safe. More than two years before his application, the inventor had constructed three safes containing this device, all of which were sold and put into use. "The construction and arrangement and purpose and mode of operation and use of the bolts in the safes were necessarily known

<sup>231</sup> The dissenting opinion is clearly out of harmony with other adjudications. "It must, in the language of the act, be in public use or on sale. If on sale, of course the public who buy can use it, and if used in public with his consent, it may be copied by others. In either event there is an end of his exclusive right of use or sale. The word public is, therefore, an important member of the sentence. A private use with consent, which could lead to no copy or reproduction of the machine, which taught the nature of the invention to no one but the party to whom such consent was given, which left the public at large as ignorant of this as it was before the author's discovery, was no abandonment to the public, and did not defeat his claim for a patent. If the little steel spring inserted in a single pair of corsets, and used by only one woman, covered by her outer clothing, and in a position always withheld from public observation, is a public use of that piece of steel, I am at a loss to know the line between a private and a public use. The opinion argues that the use was public, because, with the consent of the inventor to its use, no limitation was imposed in regard to its use in public. It may be well imagined that a prohibition to the party so permitted against exposing her use of the steel spring to public observation would have been supposed to be a piece of irony. An objection quite the opposite of this suggested by the opinion is, that the invention was incapable of a public use. That is to say, that while the statute says the right to the patent can only be defeated by a use which is public, it is equally fatal to the claim, when it is permitted to be used at all, that the article can never be used in public."

<sup>232</sup> 107 U. S. 90.

to the workmen who put them in. They were, it is true, hidden from view, after the safes were completed, and it required a destruction of the safes to bring them into view. But this was no concealment of them or use of them in secret. They had no more concealment than was inseparable from any legitimate use of them." Accordingly the court held the patent for the device to be invalid.<sup>233</sup>

All this discussion as to what constitutes "secret use" seems to have been rendered unnecessary, however, by the decision in *Macbeth-Evans Glass Co. v. General Electric Co.*<sup>233a</sup> The facts were that Macbeth had invented a certain process in 1903, since which time the plaintiff Company, of which Macbeth was president, had been using it. The court admitted, however, that this use had been "secret." In 1910 an employee of the plaintiff company had revealed the process, in breach of his confidential relation, to the Jefferson Glass Co., which at once began to use it. On suit by the Macbeth Company, however, the state court enjoined the Jefferson Company from further using it or revealing it to others.<sup>233b</sup> During these court proceedings the secret of the process was not revealed. It does not appear just how or when the defendant, the General Electric Company, came by its knowledge of the process. On these facts, the court might have held that there was in fact a public use. This might have been predicated on the use by the Macbeth Co., which would have been in accord with *Perkins v. Nassau Card Co.*, *supra*. Still more convincingly, the court might have said that the use by the Jefferson Co. and the General Electric Co., although without plaintiff's consent, was clearly a public use more than two years before the statute.

But the court chose not to base its decision on either of these grounds. On the contrary, it explicitly undertook to decide, "whether one who has discovered and perfected an in-

<sup>233</sup> Acc. *Brush v. Condit*, 132 U. S. 39, 49.

<sup>233a</sup> 246 Fed. 695; writ of certiorari refused by Sup. Ct., 246 U. S. 659 (March, 1918); cited with approval in *E. W. Bliss Co. v. Southern Can Co.*, 251 Fed. 903, 907.

<sup>233b</sup> *Macbeth-Evans Glass Co. v. Schnellbach*, 239 Pa. 76.

vention can employ it secretly more than nine years for purposes only of profit, and then, upon encountering difficulty in preserving his secret, rightfully secure a patent." It was not pretended that Macbeth had really abandoned his invention to the public. His constant effort to keep the secret of the invention hidden from the public indisputably negated this. Nevertheless, the court held, on an interpretation of the policy of the statute, that Macbeth had forfeited his right to a patent. He had not abandoned the invention to the public as a matter of fact; it had not been in public use; but the right was lost solely because of his secret use.

In this case, the rule, as clearly expressed, is that without exception the right to a patent is forfeited by secret use which is not for experimental purpose. This would cover the case of an inventor who, having used his device in secret for a time, should still apply for a patent before anyone else had discovered the secret. The dicta on which the court in the Macbeth case relies do not go this far. They declare the right to a patent to be forfeited *only when others have begun to use the invention* before the inventor's application. Whether the court in the Macbeth case really intended to go further than this is not quite certain.<sup>233c</sup>

**EXPERIMENTAL USE.** There is a type of use which, although it may be quite visible to the public and even exercised by the public generally, and gives to the public a full knowledge of the invention, is, nevertheless, not held to be a "public use" such as to preclude the subsequent issue of a patent. This is what the courts denominate "experimental" use. No matter how full and complete the use may have been, and no matter how public it may have been, in the common usage of the word, if the court feels, intuitively or otherwise, that such use was "experimental" in its purpose, it is not public use within the technical meaning of the statute.

Probably the most frequently cited case on this topic is that of *Elizabeth v. Paving Co.*<sup>234</sup> The patent there attacked cov-

<sup>233c</sup> For a further discussion, see 17 Mich. Law Rev. 499.

<sup>234</sup> 97 U. S. 126.

ered a form of street pavement made of wooden blocks. On the part of the attackers it was shown that the inventor had caused a stretch of his pavement to be laid upon a certain road in Boston where it was used for a period of 6 years before his application. The road on which it was so used was a public toll-road, owned by a corporation in which the inventor was a shareholder. The pavement was in front of the toll-house and was about 75' in length. The court held that this was not such a public use of the invention as invalidated the subsequent patent. It was constructed by the inventor at his own expense, in order to ascertain the effect upon it of heavily loaded wagons and of constant use. The inventor came frequently to examine it and made many inquiries, of other people, as to its satisfaction.

The court reasoned to its holding that this was not a public use, in the technical sense, but a mere experimental one as follows: "That the use of the pavement in question was public in one sense cannot be disputed. But can it be said that the invention was in public use? The use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as such a use. Curtis, Patents, sect. 381; Shaw v. Cooper, 7 Pet. 292. Now, the nature of a street pavement is such that it cannot be experimented upon satisfactorily except on a highway, which is always public. When the subject of invention is a machine, it may be tested and tried in a building, either with or without closed doors. In either case, such use is not a public use, within the meaning of the statute, so long as the inventor is engaged, in good faith, in testing its operation. He may see cause to alter it and improve it, or not. His experiments will reveal the fact whether any and what alterations may be necessary. If durability is one of the qualities to be attained, a long period, perhaps years, may be necessary to enable the inventor to discover whether his purpose is accomplished. And though, during all that period, he may not find that any changes are necessary, yet he may be justly said to be using:



his machine only by way of experiment; and no one would say that such a use, pursued with a bona fide intent of testing the qualities of the machine, would be a public use, within the meaning of the statute. So long as he does not voluntarily allow others to make it and use it, and so long as it is not on sale for general use, he keeps the invention under his own control, and does not lose his title to a patent. It would not be necessary, in such a case, that the machine should be put up and used only in the inventor's own shop or premises. He may have it put up and used in the premises of another, and the use may inure to the benefit of the owner of the establishment. Still, if used under the surveillance of the inventor, and for the purpose of enabling him to test the machine, and ascertain whether it will answer the purpose intended, and make such alterations and improvements as experience demonstrates to be necessary, it will still be a mere experimental use, and not a public use, within the meaning of the statute.

“Whilst the supposed machine is in such experimental use, the public may be incidentally deriving a benefit from it. If it be a grist-mill, or a carding-machine, customers from the surrounding country may enjoy the use of it by having their grain made into flour, or their wool into rolls, and still it will not be in public use, within the meaning of the law. But if the inventor allows his machine to be used by other persons generally, either with or without compensation, or if it is, with his consent, put on sale for such use, then it will be in public use and on public sale, within the meaning of the law.

“If, now, we apply the same principles to this case, the analogy will be seen at once. Nicholson wished to experiment on his pavement. He believed it to be a good thing, but he was not sure; and the only mode in which he could test it was to place a specimen of it in a public roadway. He did this at his own expense, and with the consent of the owners of the road. Durability was one of the qualities to be attained. He wanted to know whether his pavement would stand, and whether it would resist decay. Its character for durability could not be ascertained without its being subjected to use for

a considerable time. He subjected it to such use, in good faith, for the simple purpose of ascertaining whether it was what he claimed it to be. Did he do anything more than the inventor of the supposed machine might do, in testing his invention? The public had the incidental use of the pavement, it is true; but was the invention in public use, within the meaning of the statute? We think not. The proprietors of the road alone used the invention, and used it at Nicholson's request, by way of experiment. The only way in which they could use it was by allowing the public to pass over the pavement."

The difference between technical public use and experimental use such as does not invalidate a subsequent patent is impossible to formulate. Like most of the other issues of patent law cases, the character to be given to a proved use depends upon the circumstances of each case and is a psychological fact. It depends wholly upon the operation of mind of the particular judge upon the particular circumstances. But, as in respect to the other issues, precedents do show certain circumstances which have more or less apparently influenced the court in its decision.

The fact that the inventor himself has appeared to be satisfied that his invention was at least usably perfect, has militated against the proposition that it was merely experimental. In the case just referred to the court said, "Had the city of Boston, or other parties, used the invention, by laying down the pavement in other streets and places, with Nicholson's consent and allowance, then, indeed, the invention itself would have been in public use, within the meaning of the law; but this was not the case. Nicholson did not sell it, nor allow others to use it or sell it. He did not let it go beyond his control. He did nothing that indicated any intent to do so. He kept it under his own eyes, and never for a moment abandoned the intent to obtain a patent for it."

This idea was made the foundation of the holding in a later case.<sup>235</sup> The invention here involved was an improvement in

<sup>235</sup> *Root v. Third Ave. R. R.* 146 U. S. 210.

the construction of cable railways. More than two years prior to his application the inventor had put it into actual use on a cable-railroad, of which he had been employed to superintend the construction. He had apparently devised his invention in the expectation that he would be called upon to construct this particular road. He explained his invention to the directors of the road, and it was adopted by them. In defense of the patent it was urged that this use was experimental merely and the case of *Elizabeth v. Pavement Co.* was relied upon as authority. The inventor testified that he had been possessed by serious doubt as to the practicability of his device, and that he delayed applying for a patent until the utility of the device should have been tested by use. He did not, however, communicate this doubt to the directors of the road. The court said of this, quoting the words of the lower court, "Manifestly the complainant received a consideration for devising and consenting to the use of an invention which was designed to be a complete, permanent structure, which was to cost a large sum of money, and which he knew would not meet the expectation of those who had employed him, unless it should prove to be in all respects a practically operative and reasonably durable one. If he had entertained any serious doubts of its adequacy for the purpose for which it was intended, it would seem that he would not have recommended it in view of the considerable sum it was to cost. At all events, he did not treat it as an experimental thing, but allowed it to be appropriated as a complete and perfect invention, fit to be used practically, and just as it was, until it should wear out, or until it should demonstrate its own unsuitableness. He turned it over to the owners without reserving any future control over it, and knowing that, except as a subordinate, he would not be permitted to make any changes in it by way of experiment; and at the time he had no present expectation of making any material changes in it. He never made or suggested a change in it after it went into use, and never made an examination with a view of seeing whether it was defective, or could be improved in any particular." The court held, therefore, that

the case did not come within the principles of the Pavement Co. case, and that the patent was invalid.<sup>236</sup>

The fact that the inventor has received a profit from the use of his device does not necessarily demonstrate that the use was more than experimental. The matter of profit was discussed by the court in *Smith & Griggs Mfg. Co. v. Sprague*.<sup>237</sup> The machine involved, which was one for making buckles, "was practically successful, in that during the period of its use the complainant produced and sold about 50,000 gross of levers used on these shoe buckles, which he sold to his customers in the market. It was a public use in the sense of the statute and within the decisions of this court, inasmuch as it was used by the complainant in the regular conduct of his business by workmen employed by him in its operation, and in the view of such part of the public as chose to resort to his establishment, either for the purpose of selling material for the manufacture or of purchasing its product. It is claimed, however, and it was so decided by the Circuit Court, that this prior use of the machine in that form was not a public use within the prohibition of the statute so as to defeat the patent, because that use was experimental only, of an imperfect machine, embodying an incomplete invention, in order to enable the inventor to perfect it by improvements actually added, and to overcome defects developed by this use, which improvements are contained in the three additional claims, and which were added as parts of the invention within two years before the date of the application."

<sup>236</sup> *Hall v. Macneale*, 107 U. S. 90, 96. "It is contended that the safes were experimental, and that the use was a use for experiment. But we are of the opinion that this was not so. . . . The invention was complete in those safes. It was capable of producing the results sought to be accomplished, though not as thoroughly as with the use of welded steel and iron plates. . . . As to their use being experimental it is not shown that any attempt was made to see if the plates of the safes could be stripped off, and thus to prove whether or not the conical bolts were efficient. The safes were sold, and apparently, no experiment and no experimental use was ever thought to be necessary. The idea of a use for experiment was an afterthought."

<sup>237</sup> 123 U. S. 249.

The court said, generally, that "The use by the inventor, for the purpose of testing the machine, in order by experiment to devise additional means for perfecting the success of its operation, is admissible; and where, as incident to such use, the product of its operation is disposed of by sale, such profit from its use does not change its character; but where the use is mainly for the purposes of trade and profit, and the experiment is merely incidental to that, the principal and not the incident must give character to the use." But of the particular case it said, "The use of the machine was apparently for the purpose of conducting an established business; the machine itself was the only one used for the manufacture, of which the patentee, by a prior patent, already had a monopoly. He alone supplied the market with the article, and the whole demand was satisfactorily met by this single machine. To this extent, it operated successfully. That it was capable of improvement need not be denied, nor that, while it was in daily use, its owner and inventor watched it with the view of devising means to meet and overcome imperfections in its operation; but this much can be said in every such case. There are few machines, probably, which are not susceptible of further development and improvement, and the ingenuity of mechanics and inventors is commonly on the alert to discover defects and invent remedies. The alterations made in the machine in question, however useful, were not vital to its organization. Without them, it could and did work so as to be commercially successful.

"The impression made upon us by the evidence, the conclusion from which we cannot resist, is, that the patentee unduly neglected and delayed to make his application for the patents, and deprived himself of his right thereto by the public use of the machine in question, so far as it is embodied in the claims under discussion.

"The proof falls far short of establishing that the main purpose in view, in the use of the machine by the patentee, prior to his application, was to perfect its mechanism and improve its operation. On the contrary, it seems to us that it shows

that the real purpose in the use was to conduct the business of the manufacture, the improvement and perfection of the machine being merely incidental and subsidiary.

"The case upon the proofs seems to us to fall within the principle of the decision of this court in *Hall v. Macneale*, 107 U. S. 90, 96, 97. It was there said: 'It is contended that the safes were experimental and that the use was a use for experiment. But we are of opinion that this was not so, and that the case falls within the principle laid down by this court in *Coffin v. Ogden*, 18 Wall. 120. The invention was complete in those safes. It was capable of producing the results sought to be accomplished, though not as thoroughly as with the use of welded steel and iron plates. The construction and arrangement and purpose and mode of operation and use of the bolts in the safes were necessarily known to the workmen who put them in. They were, it is true, hidden from view after the safes were completed, and it required a destruction of the safes to bring them into view. But this was no concealment of them or use of them in secret. They had no more concealment than was inseparable from any legitimate use of them. As to the use being experimental, it is not shown that any attempt was made to see if the plates of the safe could be stripped off, and thus to prove whether or not the conical bolts were efficient.'"<sup>238</sup>

**EXPERIMENTAL SALE.** The same principles apply to sale as to use, and there may be an actual sale, more than two years prior to the application, which does not, in law, amount to a sale within the meaning of the statute. In *Swain v. Holyoke Machine Co.*<sup>239</sup> the court said, "As a general rule, a single unrestricted sale by the patentee of his patented device, embodying his completed invention, is a public use or sale, within section 4886 of the Revised Statutes. There are undoubtedly cases where the strict application of this rule works great hardship. Some inventions are for large and

<sup>238</sup> *Jenner v. Bowen*, 139 Fed. 556; Cf. *Am. Caramel Co. v. Thos. Mills & Bro.* 149 Fed. 743. "Nor is such use a public use, which will defeat the patent, because the product of the machine during the time was sold."

<sup>239</sup> 109 Fed. 154.

costly structures, others require a long period of time to test their practical utility, and still others are for small devices which are attached to large machines. It follows that an inventor, from lack of means or other circumstances, may be forced to sell his patented device in order to test its utility or efficiency. For this reason the courts in some instances have declined to enforce the strict rule where the sale was attended by some exceptional circumstances. The following cases illustrate the exceptions to the general rule: Where the sale of the machine was for the purpose of trial, and the machine was warranted. *Graham v. McCormick* (C. C.) 11 Fed. 859, 862, and *Same v. Manufacturing Co.*, Id. 138, 142. Where the patentee derived no profit from the sale, and the device was a mere appendage to a large machine sold by his employer. *Harmon v. Struthers* (C. C.) 57 Fed. 637. Where the sale was made at an under price, and without profit to the inventor, and for the purpose of securing a fair test of the invention. *Innis v. Boiler Works* (C. C.) 22 Fed. 780. Where an imperfect machine was sold, which did not embody the invention. *Eastern Paper-Bag Co. v. Standard Paper-Bag Co.* (C. C.) 30 Fed. 63, 66. Where the device sold did not embody the most complete and perfect form of the invention. *Draper v. Wattles*, 3 Ban. & A. 618, 620, Fed. Cas. No. 4,073.

“We should hesitate to lay down the broad proposition that a single sale of a patented device for experimental purposes works a forfeiture of the patent under the statute. We do not understand that it has ever been so expressly decided by the supreme court. It is certainly doubtful whether, under such circumstances, the device can be said to be ‘on sale,’ within the fair meaning of the statute. It does not follow that, because a machine has been sold, it has passed the experimental stage.

“Instead of laying down a fixed rule, it seems to us that in each case the court should direct its attention to the fundamental inquiry: Under what circumstances and for what purpose did the public use or sale take place? And, where it appears that there has been a public use or sale more than two years before the application, the burden is thrown upon the

patentee to establish, by full, clear, and convincing proofs, that such use or sale was principally and primarily for experimental purposes, and that such purposes were not merely incidental or subsidiary. Whatever expressions may be found in the opinions of the supreme court to the effect that a single sale comes within the statutory prohibition, we think a careful examination of the cases shows that the primary and governing consideration is the purpose and object of the inventor in making such sale." While this statement is mere *dictum* and the actual holding of the case was that there had been a sale and use within the meaning of the statute, it is a clear and forceful expression of what appears to be the settled rule.

A mere contract to sell, not accompanied by the passing of title to anything, has been held not a "sale" within the meaning of the statute.<sup>240</sup>

It is evident from the foregoing discussion that the purpose of use or sale, which makes it experimental or otherwise, is not decided in accord with the inventor's assertions in regard to it. It depends instead upon the appearance which all the collateral facts give to it. An inventor who bears this in mind, can so arrange his experiments as to make their true character much more clearly demonstrable from the circumstances than if he should ignore it.

## § 2. ABANDONMENT

The statute makes abandonment of an invention a bar to the securing of a patent;—a bar that is distinct from the effect of mere public use or sale. In practice, abandonment is so intimately connected with use or sale as to be to a great extent indistinguishable from it. Whether or not an invention has been abandoned to the public is obviously a question of fact to be determined in each case,<sup>241</sup> but its determination is a matter of conclusion, and not a mere matter of evidence. The bar to a patent arising from abandonment is thus very different from the bar arising from use or sale two years prior to the application. The use and sale is a mere matter of demonstra-

<sup>240</sup> *Burke Elec. Co. v. Independent Pneumatic Tool Co.*, 232 Fed. 145.

<sup>241</sup> *Kendall v. Winsor*, 21 How. 322, 331.



tion. If a public use or a sale has been proved, it automatically follows that the patent is invalid unless the use or sale is excused as experimental. Abandonment, on the other hand depends wholly upon the *intent* of the inventor. A conclusion as to intent must be drawn, therefore, from the proved facts, before the law can be applied. This conclusion can not be subject to rules of law, for the very simple reason that there is too little possibility of similar facts in enough particular cases for the harmony of conclusions therein to demonstrate a rule. Abandonment is therefore a matter of judicial conclusion as to intent, although we are accustomed to speak of these conclusions, psychological facts perhaps, as facts to be proved. In this sense, the intent to abandon, or, simply, abandonment, "may be proved either by express declaration of an intention to abandon, or by conduct inconsistent with any other conclusion."<sup>242</sup>

**PUBLIC USE.** The fact that an inventor let his device go into public use, or has himself used it or put it on sale without making any effort to patent it, is reasonably clear evidence that he did not intend to patent it and had abandoned the right. Because of this, it is possible for public use to bar the right to a patent in two distinct ways. It may act as a bar as a matter of law, absolutely regardless of the inventor's intent to take out a patent, because it took place more than two years before his application. Or, it may bar his right, regardless of the time at which it occurred, because it occurred under such circumstances as to indicate clearly an intent to abandon the invention to the public. The cause of the bar is quite different in each case, but because of the presence of public use in each case, the statutory bar of public use has become very much confused with loss of the right to a patent throughout abandonment. In the case of *Elizabeth v. Pavement Co.*,<sup>243</sup> for instance, the court says, "An abandonment of an invention to the public may be evinced by the conduct of the inventor at any time, even within the two years named in the law. The

<sup>242</sup> U. S. Rifle & Cartridge Co. v. Whitney Arms Co., 118 U. S. 22; Planing Mach. Co. v. Keith, 101 U. S. 479, 484.

<sup>243</sup> 97 U. S. 126, 134.