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TEXT-BOOK

OF

THE PATENT LAWS

OF

THE UNITED STATES OF AMERICA.

BY

ALBERT H. WALKER,

OF THE HARTFORD BAR.

THIRD EDITION.

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BY

ALBERT H. WALKER.

Rec. Jan. 22, 1896.

PREFACE TO THE THIRD EDITION.

The Supreme Court of the United States has lately decided the last of the patent cases, which were taken to that tribunal before the judiciary act of 1891 put a practical period to nearly the whole of its patent law jurisdiction. At this distinguished stage of legal evolution, the existing patent statutes, together with the thousands of patent decisions which have been made by the Supreme Court, and by the lower Federal courts under its guidance, contain materials for a nearly complete and a beautifully symmetrical science of the subject. To the study of the laws thus embodied and developed, I have devoted enthusiastic efforts for twenty years; and during the last eighteen of those years, I have practiced in those laws, in fifteen of the United States. This edition of my book is a result of that experience, and of my careful revision and enlargement of the second edition, into accurate conformity with the present law. The differences between this edition and the second, are far more numerous and important than those between the second and the first. No book so old as the second edition, nor even one a year younger, can be a reliable guide through the patent laws of to-day; but it is not probable that any development of those laws during any six years of the future, until Congress enacts a new system of patent statutes, will be nearly so extensive or important,

PREFACE TO THE THIRD EDITION.

as that of the six years which have passed since 1889. Except in the event of such an enactment, a necessity for another edition of this book, cannot now be foreseen; and therefore I present this edition to the bench and to the bar, as probably my final contribution to the literature of the patent law.

A. H. W.

HARTFORD, CONNECTICUT,

November 16, 1895.

PREFACE TO THE SECOND EDITION.

THE patent laws of the United States, as those laws exist at this beginning of the second century of the national government, are stated and explained in this edition of this book. The differences between it and the first edition, consist in omitting eleven whole sections which have become obsolete since 1883, together with parts of many other sections for the same reason; and in inserting three new sections, and many new points in many other sections, which have been enacted in the statutes or developed in the decisions since that year; and in so changing or qualifying the statements of law in many other places as to make them conform to those relevant and often radical decisions of the courts which have been rendered since the first edition of the book was published. The work of making these changes began as soon after the publication of the first edition as new decisions were published, and has continued from that time to this, and has involved my careful study and analysis of the more than six hundred new decisions which are incorporated with the more than twelve hundred old ones in the table of cited cases. The generous judgment which has been passed upon the first edition of the work, has been made known through numerous citations of the book in the decisions of the courts, and through numerous letters received by me from my professional

PREFACE TO THE SECOND EDITION.

brethren. Sincere thanks for the exceeding generosity of that judgment are now returned; and I am thereby encouraged to propose a third edition of the book in 1895, and a fourth edition at the beginning of the twentieth century.

A. H. W.

HARTFORD, CONNECTICUT,

April 30, 1889.

PREFACE TO THE FIRST EDITION.

THE Constitution and the statutes of the United States, together with twelve hundred and forty-six Federal and State judicial decisions, are the principal sources from which the materials for this text-book were drawn. The most extensive treatise heretofore published on the same subject, was published in 1873; but it cited only two hundred and eighty American cases, together with one hundred and sixty-one English adjudications. The inadequacy, to the needs of the profession, of a treatise so limited in scope, was clearly impressed upon me when I entered, in 1877, upon a somewhat extended practice in patent litigation. During the next four years, I was called upon to argue several patent cases in the Supreme Court, and many others in many of the Circuit Courts of the United States; and in preparing those arguments, I was forced to make many laborious researches, from which a complete text-book would have largely relieved me. Under these circumstances, I resolved, early in 1881, to undertake the production of a treatise so much needed by the profession. I began writing on the first day of May of that year, and soon became so much interested in the work, that I largely suspended my active practice of the law, in order to give the book the freshest of my efforts, and thus the greatest degree of merit consistent with my abilities. The resulting

PREFACE TO THE FIRST EDITION.

treatise covers the entire field of the patent laws of the United States, as those laws were enacted in the statutes and developed in the decisions, from the foundation of the national government in 1789, down to the first day of September, 1883. How accurately and well it covers that field, is a question which belongs to the bar and to the bench; and to the generous judgment of the bench and of the bar, I commit the result of my long and interesting labor.

A. H. W.

HARTFORD, CONNECTICUT,
September 26, 1883.

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THE PATENT LAWS.

CHAPTER I.

THE SUBJECTS OF PATENTS.

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| 1. Constitutional and statutory foundation of the patent laws. | 12. Illustrated by the five cases when compared. |
| 2. Patent law meaning of the word "discovery." | 13. Illustrated by the five cases when contrasted. |
| 3. Patent law meaning of the word "art." | 14. Deduced from the five cases as compared and contrasted. |
| 3a. Mechanical processes. | 15. Illustrated by the eighth claim of Morse. |
| 7. Difference between a "process" and a "principle" inquired into. | 16. Machines, and improvements of machines. |
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| 11. Illustrated by the case of <i>Tilghman v. Proctor</i> . | 20. Designs. |
| 11a. Illustrated by the Telephone Cases. | 21. On whose invention designs are patentable. |
| | 22. Utility and beauty of designs. |

§ 1. CONGRESS has power to promote the progress of science and useful arts, by securing for limited times to inventors the exclusive right to their respective discoveries.¹ This constitutional law is the foundation of all the patent laws of the United States. In accordance with the power it confers, and in pursuance of the object it mentions, Congress has, from time to time, enacted certain statutes. The principal enactment, in force at this writing, is Section 4886

¹ Constitution of the United States of America, Article I, Section 8.

of the Revised Statutes of the United States. Subject to certain conditions and limitations, hereafter to be explained in this book, that section provides that any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor. Statute law, identical with this, has been in force in the United States ever since April 10, 1790; except that the conditions and limitations attending it have varied somewhat from time to time; and except that compositions of matter were not mentioned in the statute prior to that of February 21, 1793, though they were doubtless covered by the word "manufacture," which the earlier statute contained.

§ 2. The word "discovery" does not have, either in the Constitution or the statute, its broadest signification. It means invention in those documents, and in them it means nothing else.¹ The "discoveries" of inventors are inventions. The same man may invent a machine and may discover an island or a law of nature. For doing the first of these things the patent laws may reward him, because he is an inventor in doing it; but those laws cannot reward him for doing either of the others, because he is not an inventor in doing either.² The statute provides that patents may be granted for four classes of things. These are arts, machines, manufactures, and compositions of matter. None of these things can be originally made known by discovery, as our continent was. They are not found, but created. They are results of original thought. They are inventions. Laws of nature, on the other hand, can never be invented by man, though they may be discovered by him. When discovered, they may be utilized by means of an art, a machine, a manufacture, or a composition of matter. It is the invention of one or more of these, for the purpose of utilizing a law of nature, and not the discovery of that law,

¹ *In re Kemper*, 1 McArthur's Patent Cases, 4, 1841; *Haffcke v. Clark*, 46 Fed. Rep., 772, 1891.

² *Wall v. Lask*, 66 Fed. Rep., 557, 1895.

that may be rewarded with a patent.¹ In a few published precedents there are phrases which seem to imply discord with these propositions; but there is no American case which invalidates them, and they are all implied and illustrated in the scientific and legal histories of the discoveries and inventions which pertain to the telegraph.

Stephen Gray, in 1729, discovered the electric current, and discovered that some substances are conductors, while other substances are non-conductors of that current; but he did not live to see those laws of nature utilized in any way. Ørsted, in 1820, discovered that an electric current will deflect a magnetic needle placed in its neighborhood. And Arago discovered soon afterward that an electric current will magnetize a piece of soft iron in its neighborhood, and that when the current is broken the magnetism in the iron instantly expires. This was the crowning discovery that made the electro-magnetic telegraph a possibility. Professor Morse, the inventor of that telegraph, had no share in making that discovery, nor in making either of those which preceded it. He was not a scientist. His profession pertained to the fine arts, and not to those commonly called useful. Being, however, a gentleman of reading, he was somewhat conversant with the principal known laws of electricity and electro-magnetism, and when he found his knowledge deficient, he resorted to those better informed than himself. During an ocean voyage in 1832, he conceived the invention, which he completed in 1837, patented in 1840, and embodied in 1844 in a working telegraph from Washington to Baltimore. Morse was as justly entitled to a patent for that invention as he would have been had he been the discoverer of all the laws of nature which it utilized. On the other hand, Stephen Gray, had he lived in the country of Morse, would not have been entitled to a patent for his discovery, splendid as it was, because what he made known was neither an art, a machine,

¹ O'Reilly v. Morse, 15 Howard, 112, 1853; Morton v. Infirmity, 5 Blatch., 116, 1862.

a manufacture, nor a composition of matter; and because to have given him an exclusive right to the electric current would have been to discourage and not to promote the progress of science and useful arts. It would have been to prohibit all others, during the life of that patent, from using any electric telegraph or telephone, should any be invented. It would have been to prohibit man from utilizing one of the laws of God.

§ 3. The word "art" also has a narrower meaning in the patent laws than it has in the dictionaries. In the dictionaries its significance is "the use of means to produce a result." In the patent laws it covers only a limited meaning of the word process. The generic definition of process is "an operation performed by rule to produce a result." Operations performed by rule may be classified as: 1, operations which consist partly or wholly in the employment of electricity, chemistry, pneumatics, pyromonics, hydraulics, or some other non-mechanical science; 2, operations which consist entirely of mechanical transactions, and which are only the peculiar functions of the respective machines which are constructed to perform them; 3, operations which consist entirely of mechanical transactions, but which may be performed by hand or by any of several different mechanisms or machines. It is settled that all processes which belong to the first class are subjects of patents;¹ and that all processes which belong to the second class are unpatentable in the United States.² But it is still debatable whether processes which belong to the third class are subjects of patents or not.

¹ *Cochrane v. Deener*, 94 U. S., 760, 1876; *Tilghman v. Proctor*, 102 U. S., 728, 1880; *Eames v. Andrews*, 122 U. S., 40, 1887; *Fermentation Co. v. Maus*, 122 U. S., 427, 1887; *Telephone Cases*, 126 U. S., 533, 1888.

² *Corning v. Burden*, 15 Howard, 267, 1853; *MacKay v. Jackman*, 12 Fed. Rep., 615, 1882; *New v. War-*

ren, 22 Off. Gaz., 587, 1882; *Brainard v. Cramme*, 12 Fed. Rep., 621, 1882; *Goss v. Cameron*, 14 Fed. Rep., 576, 1882; *Hatch v. Moffitt*, 15 Fed. Rep., 253, 1883; *Reay v. Raynor*, 19 Fed. Rep., 310, 1884; *Moulton v. Commissioner of Patents*, 61 Off. Gaz., 1480, 1892; *Bonsack Machine Co. v. Elliot*, 63 Fed. Rep., 837, 1894.

§ 3a. This question of the patentability of processes which consist entirely of mechanical transactions, but which may be performed by hand, or by any of several different mechanisms or machines, is the most important unsettled question known to the patent laws of the United States. It has never been certainly adjudicated in any reported case in any United States court, though thousands of patents on such processes have been granted and have expired, and other thousands of such patents have been granted and are still in being. Moreover there is no reported case which contains a clear discussion of the question, even in *obiter dicta*. The cases which can be thought to throw light upon the matter, fall into five classes, namely; 1. Cases which adjudge the patentability of processes of the first class, and which affirm that patentability in terms broad enough to perhaps cover processes of the third class, now in question.¹ 2. Cases which adjudge the non-patentability of processes of the second class, and which affirm that non-patentability in terms perhaps broad enough to include processes of the third class in the same category.² 3. Cases which decree the validity of patents on processes of the third class, but in which cases the hypothetical non-patentability of such processes was not apparently brought to the attention of the court.³ 4. Cases which decree the invalidity of

¹ *Cochrane v. Deener*, 94 U. S. 787, 1876; *Tilghman v. Proctor*, 102 U. S. 728, 1880; *Fermentation Co. v. Maus*, 122 U. S. 413, 1887; *Lawther v. Hamilton*, 124 U. S. 1, 1888; *Poillon v. Schmidt*, 3 Fisher, 476, 1869; *Roberts v. Dickey*, 4 Fisher, 533, 1871; *Wood v. Cleveland Rolling Mill Co.*, 4 Fisher, 550, 1871; *Celluloid Mfg. Co., v. Zylonite Co.*, 31 Fed. Rep., 904, 1887; *Adee v. Thomas*, 41 Fed. Rep. 346, 1890; *Boyd v. Cherry*, 50 Fed. Rep. 279, 1883; *Uhlman v. Brewing Co.*, 53 Fed. Rep. 491, 1893.

² *Corning v. Burden*, 15 Howard,

267, 1853; *Bolton v. Commissioner of Patents*, 61 Off. Gaz. 1480, 1892; *Bonsack Machine Co. v. Elliot*, 63 Fed. Rep. 837, 1894.

³ *Tilghman v. Morse*, 5 Fisher, 324, 1872; *Miller v. Androscoggin Pulp Co.*, 5 Fisher, 340, 1872; *Lorillard v. Dohan*, 9 Fed. Rep. 509, 1881; *Ballard v. City of Pittsburgh*, 12 Fed. Rep. 783, 1882; *Eastern Paper Bag Co. v. Standard Paper Bag Co.*, 30 Fed. Rep. 63, 1887; *Union Paper Bag Machine Co. v. Waterbury*, 39 Fed. Rep. 392, 1889; *Travers v. Cordage Co.*, 64 Fed. Rep. 771, 1894; *Edison v. Hardie*, 68 Fed. Rep. 488, 1895.

patents on processes of the third class, on other ground than their hypothetical non-patentability, without mentioning that defense.¹ 5. Cases wherein it is debatable whether the processes which were held therein to be void for non-patentability, were processes of the second class, or of the third class.² A wider range of reasons than those which appear to have been judicially weighed in any or all of these cases, will deserve, and will doubtless receive, due consideration in the courts, before the law of the subject is finally established.

§ 7. It was shown in Section 2 that the discovery of a law of nature is not patentable. That which was so denominated in that section is often spoken of as a "principle," and at other times as a "scientific principle," and again as a "scientific fact," and still again as a "fact in nature." By whatever name it is called it is certain that the thing referred to is not a material substance. It is not to be apprehended by the sense of touch, but when discovered finds a lodgment in the mind as a mental conception only. So also, a process is not a substance which can be handled. It is seen only by noting its constituent acts as they are being performed. Principles and processes are therefore alike in that they are intangible, and being so, they have sometimes been mistaken for each other.

Whether a given patent is one for a process or one for a principle, is a question upon which its validity may wholly depend. It is therefore important to ascertain what rule governs the decisions of such questions; to ascertain precisely wherein consists the difference between a principle and a process. Any search for that distinction made during the first half of this century was necessarily a speculative

¹ *Downton v. Yeager Milling Co.*, 108 U. S. 466, 1883; *Western Electric Co. v. Ansonia Co.*, 114 U. S. 447, 1885; *Miller v. Foree*, 116 U. S. 22, 1885; *Rochester Coach-Lace Co. v. Schaefer*, 46 Fed. Rep. 190, 1891.

² *Risdon Locomotive Works v. Medart*, 158 U. S. 68, 1895; *Appleton Mfg. Co. v. Star Mfg. Co.*, 60 Fed. Rep. 411, 1894; *Wells Glass Co. v. Henderson*, 67 Fed. Rep. 930, 1895.

one, for lack of authoritative adjudged cases from which to reason. Now, however, when engaged in an investigation of the point, we have recourse to five very instructive Supreme Court decisions. The proper method of conducting the inquiry seems to be, to first set down the important relevant points of each of those cases, and then to ascertain what doctrine is consistent with them all. Such hypothetical rules as are found to be inconsistent with either of the cases may safely be rejected as not true rules; but if some one proposition is found to logically underlie all five decisions, it is safe to believe that the Supreme Court will never depart from it.

§ 8. In *McClurg v. Kingsland*¹ it appears that some method was long sought, by means of which rollers or cylinders could be so cast that the metal, when introduced into the moulds, would be given a rotary motion, to the end of throwing the flog or dross into the centre instead of the circumference of the casting. The fact that rotary motion would so result was an understood law of nature, an understood operation of centrifugal force. The problem was to produce such a motion more conveniently and more uniformly than by stirring the liquid metal with a circular movement of an implement inserted therein. That problem was solved in 1834 by James Harley, a workman in a foundry in Pittsburg, Pennsylvania. He discovered that the rotary motion desired could be imparted to melted metal by injecting that metal into a mould tangentially. A patent was granted to him in 1835, for "an improvement in the mode of casting chilled rollers and other metallic cylinders and cones." Litigation arose on the patent, and coming before the Supreme Court it was held to be a patent for a process.

§ 9. In *O'Reilly v. Morse*² it appears, as also it appears in Section 2 of this book, that Professor Morse was not the discoverer of either of the laws of nature which he utilized

¹ *McClurg v. Kingsland*, 1 Howard, 202, 1843.

² *O'Reilly v. Morse*, 15 Howard, 112, 1853.

in his telegraph. He did, however, invent a machine by means of which those laws could be made to carry information to a distant place. That machine was dependent for success on several laws of nature, and lacking any one of them it would have failed of its result. The chief of these was the electric current discovered by Galvani. The one next in importance was that discovered by Ørsted and Arago, and known in natural philosophy as electro-magnetism. The eighth claim of Morse's patent was construed, by the Supreme Court, to be one for the use of the electric current, for marking intelligible signs at any distance. The Supreme Court held that claim to be void.

§ 10. In *Mowry v. Whitney*,¹ the following matters are set forth. It had long been known that sudden cooling of very hot cast-iron makes it hard, but brittle. On the other hand, the slow cooling of very hot cast-iron was known to make it soft, but tough. This is annealing. Cast-iron car-wheels require hardened peripheries and annealed hubs and plates, because the first have to endure friction and the last two have to endure strain. The early attempts to subject car-wheels to both hardening and annealing produced a weak and worthless article, resulting from the law of the expansion and contraction of metals. The peripheries of the wheels were hardened by chilling them, this chilling consisting in surrounding the moulds in which the wheels were cast with a circle of iron, and with only a thin film of sand between it and the peripheries of the wheels. This iron band being a rapid conductor of heat caused the peripheries of the wheels to suddenly cool, and thus be hardened, while the plates and hubs, being enclosed in a thick mass of sand, cooled very slowly, and were thus annealed. The sudden cooling of the rims of the wheels, however, materially contracted their circumference, and that contraction forced the still hot plates to contract their diameter. Then when the plates came to cool down, they themselves contracted still more, and thus tended to break away from

¹ *Mowry v. Whitney*, 14 Wallace, 620, 1871.

the rims, which, having ontiroly cooled some time before, had no more contracting to do. Wheels so made were therefore weak.

In this condition of affairs, Asa Whitney, of Philadelphia, discovered in 1848 that hardness once given to iron will not be destroyed or seriously impaired by the immediate reheating of the iron and its subsequent very slow cooling; and he also conceived a process by means of which that law of nature could be utilized to obviate the evil explained in the last paragraph. That process consisted in taking the wheels from the moulds very soon after their rims were chilled, and in putting them immediately into a chamber or furnace which had previously been heated about as hot as the then heat of the wheels, and thereupon in gradually raising the temperature of all parts of the interior of the chamber or furnace and its contents to an equally high point, and finally in causing all parts of the wheels to cool with equal slowness. In accordance with the law of nature discovered by Whitney, it turned out that the third stage of this process did not destroy or seriously impair the hardness of the peripheries of the wheels which were subjected to it. It did, however, cause the peripheries of the wheels to re-expand in circumference, and in so doing to stretch the still hot and ductile plates back to nearly the same diameter as that they had before the rims were contracted by the chill. The fourth stage of the process then served to contract all parts of the wheels harmoniously, and the result of the whole process was to remedy the evil at which it was aimed. Mr. Whitney obtained a patent for his invention, and the Supreme Court held it to be a patent for a process, and held it to be valid.

§ 11. The case of *Tilghman v. Proctor*¹ discloses the following facts: The celebrated French chemist, Chevreul, discovered in 1813 that fat is a regular chemical compound, consisting of glycerine and three kinds of fat acids. He also discovered that fat can be separated into those, its

¹ *Tilghman v. Proctor*, 102 U. S. 707, 1880.

constituent elements, by causing them to severally unite with an atomic equivalent of water. In 1853 Richard A. Tilghman, a Philadelphia chemist, discovered that those elements of fat can be caused so to unite with an atomic equivalent of water by mixing the fat with water, and by thereupon subjecting the mixture to a high degree of heat and to such a degree of pressure as will prevent the conversion of the water into steam. In 1854 Mr. Tilghman obtained a patent, in the specification of which he announced his discovery, and described a suitable apparatus in which to utilize that discovery in connection with the discoveries of Chevreul, and claimed "the manufacturing of fat acids and glycerine from fatty bodies by the action of water at a high temperature and pressure." The Supreme Court held that patent to be one for a process and to be valid.

§ 11*a*. The Telephone Cases¹ set forth the following fundamental facts: It has been known for centuries that articulate sounds can be reproduced at a distance from the place where they are originally uttered by means of two thin diaphragms, made of metal or membrane, and attached at their centres to the respective ends of a tightly drawn cord or wire; and that when a person speaks near and toward one of those diaphragms the sound vibrations which are produced by his voice cause that diaphragm to vibrate correspondingly; and that those corresponding vibrations are transmitted along the cord or wire to the other diaphragm, and cause it also to vibrate correspondingly; and that the second diaphragm thus vibrating causes corresponding vibrations in the air adjacent thereto; and that when those vibrations strike upon the drum of the ear of a listener they cause him to hear what was spoken toward the first diaphragm. Instruments like this are called string telephones, and they utilize that law of nature which causes such diaphragms as those employed therein to copy and to transmit the vibrations of air which occur adjacent thereto. It has been known ever since 1831, when it was discovered

¹ Telephone Cases, 126 U. S. 531, 1888.

by Michael Faraday, that when an armature is moved in front of an electro-magnet which is being magnetized by an electric current passing through its coil, the motion modifies the current, and that those modifications correspond to the movements of the armature in duration, in direction, and in strength; and it has long been known that the electric current thus modified will cause correspondingly modified movements in the armature of another electro-magnet through the coil of which the electric current thus modified is also passing. At this stage of knowledge of the relevant laws of nature, Alexander Graham Bell invented his telephone. That invention consisted in mounting two such diaphragms as those of the string telephone upon two armatures arranged, combined and movable as above described, and thus enabling one of those armatures to transmit, and the other one to receive, such minute and exceedingly variant vibrations as those caused in the air^o by the human voice; and it also consisted in the process of transmitting sounds telegraphically, by causing electrical undulations, similar in form to the vibrations of the air caused by the sounds, to occur upon the conducting wire. Mr. Bell obtained a patent for that invention in 1876, and the Supreme Court held it to be a patent for a process, as well as for an apparatus, and held the process claim to be valid.

§ 12. The last five sections present five cases, covering five subject-matters of claim, four of which the Supreme Court held to be patentable processes, and one of which that tribunal held to be an unpatentable principle, or law of nature. To learn the controlling distinction between a claim for a process and a claim for a principle, it is therefore sufficient to ascertain precisely wherein consists the controlling difference between the eighth claim of Morse, on the one hand, and the claims of Harley, Whitney, Tilghman, and Bell on the other.

That difference does not consist in the fact that Harley, Whitney, and Tilghman each discovered one of the laws of nature which he utilized, while the laws which Morse utilized were discovered by others; because the Supreme

Court did not rest its decision in the Morse case on the ground that he was not the discoverer of the electric current, but on the ground that, being a power in nature, it was not patentable to any person. Neither does that difference consist in anything outside of the use of laws of nature, because all five claims extended to accomplishing results by means of such law or laws, regardless of the particular apparatus used in the respective processes. The fact that tangential injection of melted metal into a cylindrical mould will give that metal a rotary motion; the fact that moderate reheating of a car wheel will not destroy its chill; the fact that very hot water will separate the elements of fat; the fact that mechanical motion may cause electrical undulations—every one of these is just as truly a law of nature, just as truly a “principle,” as is the fact of the electric current. Nor was the apparatus described by Harley, Whitney, Tilghman, and Bell, respectively, for the purpose of utilizing the first four of these laws, respectively, claimed as their sole respective inventions any more than the particular telegraph described by Morse was made essential to his eighth claim.

§ 13. There is apparently but one radical distinction between the claims of the four patents of Harley, Whitney, Tilghman, and Bell, on the one hand, and the eighth claim of Morse on the other. That distinction is as follows: Harley, Whitney, Tilghman, and Bell each produced a process which utilized several laws of nature, and each of them claimed the entire process he produced, including the use of all those laws in the order and method described. Morse also made an invention which utilized several laws of nature, but instead of claiming his combined and methodical use of all those laws, his eighth claim was construed as confined to one of them alone. This difference, taken in connection with the fact that the Supreme Court sustained the patents of Harley, Whitney, Tilghman and Bell, and overthrew the eighth claim of Morse, and taken in connection with the fact that no other relevant and important difference can be detected, points to the soundness of the

doctrines stated in the next section, and illustrated in the section following that.

§ 14. A patent for a process is a patent for the described combined use of all the laws of nature utilized by that process. A patent for a principle is a patent for one only of the laws of nature used in a process. If a patent for a principle were granted and sustained, it would be much broader than a patent for a process, because it would cover all processes which aim at the same result, and which use the particular law of nature covered by the patent for a principle, no matter in what combination with other laws. A patent for a process, on the other hand, covers only its own method of using all of the laws of nature which it utilizes. To grant and sustain a patent for a principle, would induce an inventor to guess which of the laws of nature used in his process will always be found indispensable, and guessing rightly, would enable him, by claiming that particular law, to suppress all subsequent processes using it; to suppress all subsequent invention in the same field until such time as his patent might expire. A patent for a process, on the contrary, leaves the field open to ingenious men to invent and to use other processes using part of the laws used by the patented process, or using all of them in other combinations and methods.

§ 15. An illustration of the doctrines of the last section exists in the matter of the eighth claim of Morse, when considered in connection with other telegraphs than his. The subject of that claim was construed to be the use of the electric current for marking signs at any distance. The electric current is one thing and electro-magnetism is another. The first was discovered by Gray, in 1729, but the existence of the latter was not known until ninety-one years later. Morse used both in his telegraph, but his eighth claim was construed to cover the electric current with or without the other. But without electro-magnetism Morse's telegraph would not work. After Morse came Bain, who invented a telegraph which used the electric current, but did not use electro-magnetism. Its recording apparatus

operated electro-chemically, and not electro-magnetically like that of Morse. Bain's telegraph could work with a much feebler current than could that of Morse, and therefore the relay batteries of the latter were not wanted. The two telegraphs had nothing in common except that both used the electric current. If the eighth claim of Morse had been sustained as construed, it would have covered Bain's and every other electric telegraph, capable of marking signs at a distance. On the other hand, had that claim been so drawn as to cover the combined use of all the laws of nature utilized by the telegraph of Morse, when used as he used them, then it would have been a claim for a process, and not being obnoxious to either of the weighty objections which are set forth in the opinion of the Supreme Court, it would doubtless have been sustained by that tribunal. In that case, however, it would not have been infringed by the telegraph of Bain, nor by any other which, like his, dispensed with one or more of the laws of nature necessary to the process of Morse.

§ 16. Machines, and improvements of machines constitute the subjects of a majority of the American patents heretofore granted. A machine is a combination of moving mechanical parts, adapted to receive motion, and to apply it to the production of some mechanical result or results. All the parts of a machine may be old while the machine as a whole, and also the sub-combinations which are contained therein, are proper subjects of patents.¹ An improvement of a machine may consist of an addition thereto, or in a subtraction therefrom, or in substituting for one or more of its parts something different, or in so rearranging its parts as to make it work better than before. Whether or not a given improvement is a patentable one will always depend upon several considerations. In order to be so it must, first of all, be an invented improvement,² as distinguished from one which is the product of mere mechanical

¹ *Cantrell v. Wallick*, 117 U. S. 694, 1886.

² *Cochrane v. Waterman*, 1 McArthur's Patent Cases, 53, 1844.

skill in construction. This point of law is explained at large in the next chapter. So also it is explained in the chapter on infringement what improvements can be used, and what improvements cannot be used, without infringing the patents for the machines improved upon, if the latter happen to be patented. It is enough to say in this chapter, that patents are not void merely because they cover processes or things which include old inventions,¹ and that an improvement may or may not be an invention, and in either case may or may not be an infringement of a patent covering the machine improved.

§ 17. The word "manufacture" has a much narrower signification in the American patent laws than it has in those of England. In the latter it includes everything made by the hand of man, and also includes processes of manufacture. According to the former, processes are patentable because they are arts, while some of the things made by the hand of man are patentable as machines, and some others are patentable as compositions of matter, and some others are patentable as designs. Whatever is made by the hand of man, and is neither of these, is a manufacture, in the sense in which that word is used in the American patent laws.² The term should be held to justify a patent for the invention of a new and useful human habitation, or a new and useful improvement of such a structure. This statement is ventured, notwithstanding the facetious *obiter dictum* of Justice GRIER in the jail case.³

§ 18. The phrase "composition of matter," as used in the statutes, covers all compositions of two or more substances. It includes, therefore, all composite articles, whether they be the result of chemical union, or of mechanical mixture, or whether they be fluids, powders or solids: To be a proper subject of a patent, a composition of matter must, like a process, a machine, or a manufacture, be

¹ Cantrell v. Wallick, 117 U. S. Rep. 620, 1894.
694, 1886.

³ Jacobs v. Baker, 7 Wallace, 297,

² Johnson v. Johnston, 60 Fed. 1868.

able to endure the relevant tests of invention, novelty, and utility, which are stated in the next three chapters of this book.

§ 19. The distinction between a machine and a manufacture cannot be so stated that its application to every case would be clear and satisfactory to every mind. The same remark is true of the distinction between manufactures and compositions of matter. In most instances, however, when something is invented by the mind and constructed by the hand of man, its classification under some one of these heads is sufficiently obvious. If an inventor is certain that his invention belongs to one or another of the three classes of things, but is uncertain as to which, no evil need result from the doubt. No inventor needs to state or to know whether the thing he has produced is a machine, a manufacture, or a composition of matter, provided he knows that it is one or the other of these. Seventeen-year patents may be lawfully granted for a thing which falls under either designation, but it never becomes vitally important to determine to which one of the three classes a particular thing really belongs.

§ 20. Designs are patentable under Section 4929 of the Revised Statutes. That section provides that any person who, by his own industry, genius, efforts, and expense, has invented and produced any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief, any new and original design for the printing of woollen, silk, cotton, or other fabrics, any new and original impression, ornament, patent, print, or picture to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture, or any new, useful, and original shape or configuration of any article of manufacture, may, subject to certain conditions and limitations stated in the statute, obtain a patent therefor. That section is almost a literal transcript of Section 71 of the consolidated Patent Act of 1870,¹ except that in the latter the word "pattern" is found

¹ 16 Statutes at Large, Ch. 280, p. 209.

in the connection in which the word "patent" is printed in Section 4929. The change from "pattern" to "patent" was doubtless an error of the printers of the Revised Statutes. Those statutes were enacted as printed, and not as is the custom with shorter edicts, as engrossed in writing. The word "patent" is meaningless in that connection, and patterns, though not mentioned in the section, are doubtless covered by its other provisions.

§ 21. In like manner as Section 4929 of the Revised Statutes was enacted to take the place of Section 71 of the Patent Act of 1870, the latter was passed to take the place of Section 11 of the Patent Act of 1861.¹ The Act of 1870 differed from its predecessor mainly in conferring upon any person the rights to design patents which the Act of 1861 gave only to citizens and to aliens who, having resided one year in the United States, had taken an oath of intention to become citizens. Section 11 of the Act of 1861 was a modification of Section 3 of the Patent Act of 1842,² which latter was the first American statute authorizing patents for designs.

§ 22. Section 4929, like all three of its predecessors, provided for patents for a certain class of new, useful, and original designs, and for certain other classes of new and original designs, thus recognizing the fact that some designs are useful as well as ornamental, while others have no utility except to please the eye of the beholder.³ It is questionable whether the framers of the constitutional provision relevant to encouragement of science and useful arts intended to provide for patents for designs which are useful only because they are ornamental. In our age, however, beauty is generally believed to have a utility of its own, and patents are therefore granted and sustained for designs which are useful only because they are beautiful.⁴

¹ 12 Statutes at Large, Ch. 88, p. 248.

² 5 Statutes at Large, Ch. 263, p. 543.

³ *Smith v. Whitman Saddle Co.*, 148 U. S. 678, 1893.

⁴ *Theberath v. Trimming Co.*, 15 Fed. Rep. 250, 1883.

CHAPTER II.

INVENTION.

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| 23. Invention necessary to patentability. | mode of operation, is not invention. |
| 24. Many negative rules, but no affirmative rule, for determining the presence or absence of invention. | 38. Using old thing for new purpose is not invention. |
| 25. Mere mechanical skill is not invention. | 39. Cases to which the last rule does not apply. |
| 26. Circumstances indicating difference between invention and mechanical skill. | 40. Doubts relevant to invention, when otherwise insoluble, are solved by ascertaining comparative utility. |
| 27. Excellence of workmanship is not invention. | 41. Form. |
| 28. Substitution of materials is not invention. | 41a. Proportion. |
| 29. Exception to the last rule. | 42. Questions of invention are questions of fact. |
| 30. Enlargement is not invention. | 43. Questions of invention sometimes investigated in the light of the state of the art. |
| 31. Change of degree is not invention. | 44. Joint and sole inventions. |
| 31a. Exception to the last rule. | 45. How made. |
| 32. Aggregation is not invention. | 46. How distinguished. |
| 33. Simultaneousness of action is not necessary to invention. | 47. Suggestions to an inventor. |
| 34. Duplication is not invention. | 48. Information sought by an inventor. |
| 35. Omission is not generally invention. | 49. Mechanical skill not necessary to invention. |
| 36. Substitution of equivalents is not invention. | 50. Sole patent to one joint inventor is void. |
| 37. New combination without new | 51. Joint patent to sole inventor and another is void. |

§ 23. It has been shown that the word "discovered," in Section 4886 of the Revised Statutes, has the meaning of the word "invented."¹ It follows that patents are grantable for things invented, and not for things otherwise

¹ Section 2 of this book.

produced. Novelty and utility must indeed characterize the subject of a patent, but they alone are not enough to make anything patentable; for the statute provides that things to be patented must be invented things, as well as new and useful things.¹ The courts have therefore declared that not all improvement is invention, and entitled to protection as such, but that to be thus entitled, a thing must be the product of some exercise of the inventive faculties.² And the law stated in this section applies not only to processes, machines, manufactures, and compositions of matter, but also to designs.³ But a patent may be sustained for an invention which resided in a theory, without a reduction to actual practice, at the time the patent was granted, if that theory afterwards proves to be correct,⁴ and also where the correctness of the theory is self-evident.⁵

§ 24. The abstract rule stated in the last section is as certainly true as it is universally just, but its application to particular cases cannot be made without the guidance of

¹ *Thompson v. Boisselier*, 114 U. S. 11, 1884; *Gardner v. Herz*, 118 U. S. 191, 1885.

² *Pearce v. Mulford*, 102 U. S. 112, 1880; *Atlantic Works v. Brady*, 107 U. S. 199, 1882; *Slawson v. Railroad Co.*, 107 U. S. 649, 1882; *Morris v. McMillin*, 112 U. S. 247, 1884; *Hollister v. Benedict Mfg. Co.*, 113 U. S. 59, 1885. *Stephenson v. Railroad Co.*, 114 U. S. 149, 1885; *Munson v. New York City*, 124 U. S. 601, 1888; *Pattee Plow Co. v. Kingman & Co.* 129 U. S. 294, 1889; *Watson v. Railway Co.*, 132 U. S. 161, 1889; *Hill v. Wooster*, 132 U. S. 700, 1890; *Burt v. Ivory*, 133 U. S. 349, 1890; *Magin v. Karle*, 150 U. S. 391, 1893; *Risdon Locomotive Works v. Medart*, 158 U. S. 81, 1895;

³ *Smith v. Saddle Co.*, 148 U. S. 679, 1893; *Western Electric Mfg. Co. v. Odell*, 18 Fed. Rep. 322, 1883;

Osborn v. Judd, 29 Fed. Rep. 93, 1886; *Meers v. Kelly*, 31 Fed. Rep. 153, 1887; *Untermoyer v. Freund*, 37 Fed. Rep. 343, 1889; *Redway v. Stove Co.*, 38 Fed. Rep. 583, 1889; *Dukes v. Bauerle*, 41 Fed. Rep. 733, 1890; *Foster v. Crossin*, 44 Fed. Rep. 63, 1890; *Eclipse Mfg. Co. v. Adkins*, 44 Fed. Rep. 282, 1890; *Cahoone Mfg. Co. v. Harness Co.*, 45 Fed. Rep. 585, 1891; *Anderson v. Saint*, 46 Fed. Rep. 760, 1891; *Eagle Pencil Co. v. American Pencil Co.*, 53 Fed. Rep. 388, 1892.

⁴ *Telephone Cases*, 126 U. S. 535, 1888.

⁵ *Heath v. Hildreth*, 1 McArthur's Patent Cases, 19, 1841; *Screw Co. v. Sloan*, 1 McArthur's Patent Cases, 210, 1853; *In re Seely*, 1 McArthur's Patent Cases, 249, 1853; *Chandler v. Ladd*, 1 McArthur's Patent Cases, 493, 1857.

more concrete propositions. In delivering an opinion of the Supreme Court, in January, 1885, Justice MATTHEWS used some language which may be thought to establish an affirmative rule by which to determine the presence or absence of invention in every case. Speaking of a simple device which the court held not to be an invention, he said that it "seems to us not to spring from that intuitive faculty of the mind put forth in search for new results or new methods, creating what had not before existed, or bringing to light what lay hidden from vision; but, on the other hand, to be the suggestion of that common experience which arose spontaneously, and by a necessity of human reasoning, in the minds of those who became acquainted with the circumstances with which they had to deal."¹ This language may be thought to mean that whatever new and useful process, machine, manufacture, composition of matter, or design is produced by intuition is an invention, and that whatever such thing is produced by reason is not an invention. But such an interpretation of the language would make it a *reductio ad absurdum*. Intuition may sometimes reach to a single brilliant result; but intuition can never conceive or correlate the mazes of movements and mechanisms which constitute a modern automatic machine. To enforce such a rule as that hypothetically implied in the language of Justice MATTHEWS would be to deny invention to those marvellous combinations of numerous metallic devices which compose American automatic machinery, and which work with such complexity and yet with such precision that they seem themselves to be endowed with reason. But fortunately the supposed interpretation of that language is evidently not the meaning of the court. The court does not deny invention to all the products of pure reason in the useful arts. It merely finds want of invention in those things which are conceived "spontaneously and by a necessity of human reasoning" in the minds of those who have their attention directed to the subject.

¹ Hollister v. Benedict Mfg. Co., 113 U. S. 72, 1885.

In a later case the Supreme Court, speaking by Justice BROWN of the meaning of the word "invention," said: "The truth is the word cannot be defined in such manner as to afford any substantial aid in determining whether a particular device involves an exercise of the inventive faculty or not. In a given case we may be able to say that there is present invention of a very high order. In another we can see that there is lacking that impalpable something which distinguishes invention from simple mechanical skill. Courts, adopting fixed principles as a guide, have by a process of exclusion determined that certain variations in old devices do or do not involve invention; but whether the variation relied upon in a particular case is anything more than ordinary mechanical skill is a question which cannot be answered by applying the test of any general definition."¹ Thus it has been settled by the Supreme Court that the ideal line which separates things invented from things otherwise produced can never be concisely defined; and that there is no affirmative rule by which to determine the presence or absence of invention in every case; and that such questions are to be determined by means of several negative rules which operate by a process of exclusion. Each of those rules applies to a large class of cases, and all of them are entirely authoritative and sufficiently clear. To formulate those rules, and to state their qualifications and exceptions, and to review and explain the adjudged cases from which those rules, qualifications, and exceptions are deducible, is the scope of several sections which immediately follow.

§ 25. It is not invention to produce a device or process which any skilful mechanic, electrician, or chemist would produce whenever required.

In holding a patent to be void the Supreme Court, speaking by Justice BRADLEY, delivered a paragraph of very instructive argument in support of the rule of this section: a paragraph so valuable as to call for its verbatim quotation in this text.

¹ McClain v. Ortmayer, 141 U. S. 427, 1891.

“The process of development in manufactures creates a constant demand for new appliances, which the skill of ordinary head workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention somewhat above ordinary mechanical or engineering skill is distinctly shown, is unjust in principle and injurious in its consequences. The design of the patent laws is to reward those who make some substantial discovery or invention which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It is never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for profits made in good faith.”¹

Many other cases are cited for illustrations of the rule of this section; for the question whether a given process or mechanism evinces invention, or only shows skill, is frequently a difficult question to decide, and such decisions may often best be made by reasoning by analogy from cases.

¹ *Atlantic Works v. Brady*, 107 U. S. 199, 1882.

where skill has been found to be present and invention has been found to be absent.¹

¹ The Corn-Planter Patent, 28 Wallace, 232, 1874; Vinton v. Hamilton, 104 U. S. 491, 1891; Tack Co. v. Mfg. Co. 100 U. S. 119, 1883; Morris v. McMillin, 112 U. S. 244, 1884; Hollister v. Benedict Mfg. Co. 118 U. S. 72, 1885; Yale Lock Co. v. Greenleaf, 117 U. S. 554, 1886; Pomace Holder Co. v. Ferguson, 119 U. S. 385, 1886; Weir v. Morden, 125 U. S. 98, 1888; Brown v. District of Columbia, 130 U. S. 87, 1889; Day v. Railroad Co. 132 U. S. 102, 1889; Butler v. Steckel, 137 U. S. 29, 1890; Shenfield v. Nashawannuck Mfg. Co. 137 U. S. 59, 1890; Consolidated Roller Mill Co. v. Walker, 138 U. S. 132, 1891; Cluett v. Claffin, 140 U. S. 180, 1891; Magowan v. Belting Co. 141 U. S. 343, 1891; Pope Mfg. Co. v. Gormully Mfg. Co. 144 U. S. 259, 1892; Ryan v. Hard, 145 U. S. 246, 1892; Duer v. Lock Co. 149 U. S. 222, 1893; Leggett v. Standard Oil Co. 149 U. S. 295, 1893; Sargent v. Covert, 152 U. S. 516, 1894; Palmer v. Corning, 156 U. S. 342, 1895; Snow v. Taylor, 4 Bann. & Ard. 5, 1878; Walker v. Rawson, 4 Bann. & Ard. 130, 1879; King v. Frostel, 4 Bann. & Ard. 238, 1879; Lorillard v. Ridgway, 4 Bann. & Ard. 565, 1879; National Mfg. Co. v. Meyers, 15 Fed. Rep. 241, 1883; McMurray v. Miller, 16 Fed. Rep. 473, 1883; Day v. Railroad Co. 28 Fed. Rep. 189, 1885; French v. Carter, 25 Fed. Rep. 41, 1885; Calkins v. Oshkosh Carriage Co. 27 Fed. Rep. 296, 1886; Muller v. Ellison, 27 Fed. Rep. 456, 1886; Consolidated Fruit Jar Co. v.

Bellaire Stamping Co. 28 Fed. Rep. 91, 1886; Adams v. Bellaire Stamping Co. 28 Fed. Rep. 362, 1886; Willard v. Cooper, 28 Fed. Rep. 750, 1886; Hasselman v. Gaar, 29 Fed. Rep. 318, 1886; Celluloid Mfg. Co. v. Zylonite Novelty Co. 30 Fed. Rep. 617, 1887; Roth v. Keobler, 30 Fed. Rep. 618, 1887; Cluett v. Claffin, 30 Fed. Rep. 922, 1887; Mo-Nab v. Mfg. Co. 32 Fed. Rep. 155, 1887; Landesmann v. Jonasson, 32 Fed. Rep. 590, 1887; Kidd v. Horry, 33 Fed. Rep. 712, 1888; Gates Iron Works v. Fraser, 42 Fed. Rep. 49, 1890; Studebaker Mfg. Co. v. Iron and Bolt Co. 42 Fed. Rep. 52, 1890; National Cable Ry. Co. v. Sioux City Cable Ry. Co. 42 Fed. Rep. 679, 1890; Delvin v. Heise, 43 Fed. Rep. 796, 1890; Foos Mfg. Co. v. Thresher Co. 44 Fed. Rep. 601, 1891; Wells v. Tatum, 46 Fed. Rep. 572, 1891; Coston v. Pain, 47 Fed. Rep. 66, 1891; Gustin v. Rail Mill Co. 47 Fed. Rep. 508, 1891; Dayton Crupper Co. v. Ruhl, 55 Fed. Rep. 651, 1893; United States Credit System Co. v. American Credit Indemnity Co. 59 Fed. Rep. 139, 1893; Maitland v. Gibson, 63 Fed. Rep. 128, 1894; Westinghouse v. Edison Electric Light Co. 63 Fed. Rep. 596, 1894; McClery v. Baker, 63 Fed. Rep. 843, 1894; MacKnight v. McNiece, 64 Fed. Rep. 115, 1894; Dalby v. Lynes, 64 Fed. Rep. 380, 1894; Allen v. Steele, 64 Fed. Rep. 796, 1894; Thomson-Houston Electric Co. v. Western Electric Co. 65 Fed. Rep. 615, 1895.

The absence of invention may be established in some cases, by evidence that a considerable number of persons who were not inventors, acting independently of each other, and without receiving any information from the patentee or his patent, did in fact contrive the improvement claimed therein, not long after he produced it.¹ And where that does not happen to be the case, want of invention can be proved by teaching a mechanic or other person the whole or a part of the prior art, and by proving that, without exercising any invention, he promptly produced the patented improvement, without any knowledge on the subject except what he had thus learned.² But it does not tend to prove want of invention to show that a skilful mechanic who had seen the patented thing, can reconstruct some older thing so as to make it similar to that covered by the patent.³

§ 26. But if a particular result was long desired and sometimes sought, but never attained, want of invention cannot be predicated of a device or process which first reached that result, on the ground that the simplicity of the means is so marked that many believe they could readily have produced it if required.⁴ That is the opinion of many relevant to some real inventions, because solved problems often seem easy to persons who could never have solved them, and true inventions sometimes seem obvious to persons who could never have produced them. This doctrine does not contradict that of the last section. It only teaches us that the fact upon which the doctrine of the last section is founded cannot be proved by subsequent opinion, when that opinion is inconsistent with prior attempts and failures.

¹ Bromley Bros. Carpet Co. v. Stewart, 51 Fed. Rep. 915, 1892; Haslem v. Pittsburgh Plate Glass Co. 71 Off. Gaz. 1770, 1894.

² National Co. v. Belcher, 68 Fed. Rep. 668, 1895.

³ Beach v. Box-Machine Co. 63 Fed. Rep. 601, 1894.

⁴ The Barbed Wire Patent, 143 U. S. 283, 1892; Gandy v. Belting Co. 143 U. S. 594, 1892; Kremenz v. Cottle Co. 148 U. S. 560, 1893; Potts v. Creager, 155 U. S. 609, 1895; DuBois v. Kirk, 158 U. S. 63, 1895.

In *The Loom Co. v. Higgins*,¹ Justice BRADLEY remarked that: "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." The exception to his rule, which Justice BRADLEY contemplated, doubtless refers to cases, the result wherein was never before attained only because it was never before desired. In the circuit court cases which support the doctrine of this section, the proviso that the thing or process which the patentee was the first to produce, had been previously sought for by others in vain, is never overlooked, but, on the contrary, is always treated as a material element in the proposition.²

A qualification of the rule of this section consists in the subordinate point, that where several improvements have mutually contributed to introduce an unused invention into public favor, and where it does not appear that either of those improvements alone would have produced that result; no presumption in favor of either of those improvements being an invention, arises out of the commercial success of the invention thus improved.³ And another qualification resides in holding that the rule of the section does not

¹ *Loom Co. v. Higgins*, 105 U. S. 591, 1881.

² *Terry Clock Co. v. New Haven Clock Co.* 4 Bann. & Ard. 121, 1879; *Wallace v. Noyes*, 18 Fed. Rep. 180, 1882; *Ward v. Plow Co.* 14 Fed. Rep. 696, 1883; *Davis v. Fredericks*, 19 Fed. Rep. 99, 1884; *Patterson v. Duff*, 20 Fed. Rep. 641, 1884; *Brown Mfg. Co. v. Deere*, 21 Fed. Rep. 713, 1884; *McFarland v. Spencer*, 23 Fed. Rep. 151, 1885; *Celluloid Mfg. Co. v. Chrolithon Collar & Cuff Co.* 23 Fed. Rep. 397, 1885; *Sewing Ma-*

chine Co. v. Frame, 24 Fed. Rep. 596, 1884; *Asmus v. Alden*, 27 Fed. Rep. 687, 1886; *Adee v. Peck*, 42 Fed. Rep. 499, 1890; *American Cable Ry. Co. v. New York*, 56 Fed. Rep. 150, 1893; *Stohlmann v. Parker*, 53 Fed. Rep. 925, 1893; *Westinghouse v. Air-Brake Co.* 59 Fed. Rep. 581, 1893; *Electric Ry. Co. v. Jamaica R. R. Co.* 61 Fed. Rep. 670, 1894.

³ *Corbin Lock Co. v. Eagle Lock Co.* 37 Fed. Rep. 333, 1889.

apply where the prior attempts were unsuccessful because they were stupid, or unskilful.¹

§ 27. It is not invention to produce an article which differs from some older thing only in excellence of workmanship.

The distinction between this rule, and the rule of Section 25, resides in the fact that mechanical skill is treated as ability to plan improvement; while excellence of workmanship is contemplated as ability to execute improvement already planned, but not well executed by him who planned it. This subject does not require an elaborate explanation; because it is evident that invention does not reside in taking an article so irregular or rough, that it never could have found a sale in the market, and exercising upon that article such superiority of workmanship as to make it commercial.²

§ 28. It is not invention to substitute superior for inferior materials, in making one or more or all of the parts of a thing.

In most of the cases which embody this rule, the substitution of materials was both new and useful; and in some of those cases, the increase of utility due to the substitution, was decidedly high. But the courts held the respective improvements to be the result of judgment and skill in the selection and the adaptation of materials, and not the product of the inventive faculties of those who made them.³

¹ *Butler v. Steckel*, 137 U. S. 29, 1890; *American Feather Duster Co. v. Levy*, 43 Fed. Rep. 383, 1890; *Mahon v. McGuire Mfg. Co.* 51 Fed. Rep. 684, 1892; *Johnson Co. v. Steel Co.* 67 Fed. Rep. 942, 1895.

² *Risdon Locomotive Works v. Medart*, 158 U. S. 81, 1895; *Buzzell v. Fifield*, 7 Fed. Rep. 467, 1881; *Hatch v. Moffitt*, 15 Fed. Rep. 252, 1883; *Lee v. Upson Hart Co.* 42 Fed. Rep. 531, 1890.

³ *Hotchkiss v. Greenwood*, 11 Howard, 248, 1850; *Hicks v. Kelsey*, 18 Wallace, 670, 1873; *Terhune v. Phillips*, 99 U. S. 593, 1873; *Gardner v. Herz*, 118 U. S. 192, 1885;

Brown v. District of Columbia, 130 U. S. 87, 1889; *Florsheim v. Schilling*, 137 U. S. 76, 1890; *Hoff v. Iron Clad Mfg. Co.* 139 U. S. 329, 1891; *Ryan v. Hard*, 145 U. S. 245, 1892; *In re Maynard*, 1 McArthur's Patent Cases, 536, 1857; *Post v. Hardware Co.* 26 Fed. Rep. 616, 1886; *Forschner v. Baumgarten*; 26 Fed. Rep. 858, 1886; *J. L. Mott Iron Works v. Cassidy*, 31 Fed. Rep. 47, 1887; *National Roofing Co. v. Garwood*, 35 Fed. Rep. 658, 1888; *Kilbourne v. Bingham Co.* 47 Fed. Rep. 57, 1891; *Vulcanized Fiber Co. v. Taylor*, 49 Fed. Rep. 744, 1891.

There being no invention in substituting superior for inferior materials, there is certainly none in selecting from a number of materials recommended by a prior patentee, that one which is best adapted to the purpose in view;¹ and none in substituting one well-known form of a particular material, for another well-known form of the same material.²

§ 29. Important exceptions have, however, been established to the general rule of the last section. If the substitution involved a new mode of construction, or if it developed new uses and properties of the article made, it may amount to invention.³ And substitution of materials may constitute invention, where it produces a new mode of operation,⁴ or results in a new function,⁵ or in the first practical success in the art in which the substitution is made.⁶ So also, where the excellence of the material substituted could not be known beforehand, and where practice shows its superiority to consist not only in greater cheapness and greater durability, but also in more efficient action, the substitution of a superior for an inferior material amounts to invention.⁷

§ 30. It is not invention to so enlarge and strengthen a machine that it will operate on larger materials than before.

In *Phillips v. Page*⁸ the patent covered the first circular saw-mill which was adapted to sawing logs. Its utility was great, and was unquestioned. Machines like it, except that they were much smaller in every part, had been used before,

¹ *Welling v. Crane*, 14 Fed. Rep. 571, 1882.

² *Brush Electric Co. v. Julien Electric Co.* 41 Fed. Rep. 693, 1890; *Brush Electric Co. v. Accumulator Co.* 47 Fed. Rep. 50, 1891.

³ *Smith v. Dental Vulcanite Co.* 93 U. S. 496, 1876.

⁴ *Perkins v. Lumber Co.* 51 Fed. Rep. 291, 1892.

⁵ *Potts v. Creager*, 155 U. S. 609, 1895.

⁶ *Edison Electric Light Co. v. U. S. Electric Lighting Co.* 52 Fed. Rep. 308, 1892.

⁷ *Dalton v. Nelson*, 13 Blatch. 357, 1876; *Celluloid Mfg. Co. v. American Zylonite Co.* 35 Fed. Rep. 301, 1888; *Celluloid Mfg. Co. v. Crane Chemical Co.* 36 Fed. Rep. 110, 1888.

⁸ *Phillips v. Page*, 24 Howard, 164, 1860.

to saw lath and other slender articles out of small blocks of wood. The Supreme Court therefore held that Mr. Page did not invent a circular saw-mill, but merely constructed one, by copying on a larger scale the prior machine for sawing lath.

In the case of the Planing Machine Co. *v.* Keith,¹ the patent covered the Woodbury planing machine, a machine which differed from the older Woodworth planing machine in one respect only. Woodworth used rollers to press the boards against the bed of the machine, whereas Woodbury used pressure bars for that purpose. The Supreme Court held the Woodbury patent to be void because Alfred Anson, of Norwich, Connecticut, had previously invented and constructed a machine for dressing window-sash, which had pressure bars like Woodbury, instead of pressure rollers like Woodworth. This decision was made notwithstanding the fact that the Anson machine was too small and too weak for general planing work upon boards and planks. And this rule has been applied, and is well illustrated, in several other Supreme Court cases.²

§ 31. It is not invention to change the degree of a thing, or of one feature of a thing.

In *Glue Co. v. Upton*³ the patent covered pulverized glue made from flake glue by grinding it in any suitable manner. It had several points of superiority over all former kinds of glue, but the Supreme Court held that, not being a product of invention, the patent covering it was void.

In *Guidet v. Brooklyn*⁴ the patent covered paving-stones of a certain shape and with rough sides. Paving-stones of the same shape, but with sides less rough, had been known before. To make the sides of the prior stones rougher was

¹ *Planing Machine Co. v. Keith*, 101 U. S. 490, 1879.

² *Peters v. Active Mfg. Co.* 129 U. S. 530, 1889; *Morgan Envelope Co. v. Albany Paper Co.*, 152 U. S.

430, 1894.

³ *Glue Co. v. Upton*, 97 U. S. 6, 1877.

⁴ *Guidet v. Brooklyn*, 105 U. S. 552, 1881.

held by the Supreme Court to be a change in degree only, and therefore not patentable.

In *Estey v. Burdett*,¹ one of the claims of the patent involved, depended upon concentrating certain valve openings into a smaller space than had theretofore been occupied by them. The Supreme Court held that there was no invention in that change.

In *Preston v. Manard*² the alleged invention consisted in making the reel of a fountain hose-carriage of larger diameter than were the reels of former hose-carriages, in order to allow the water to pass through the hose when partly wound upon the reel. The Supreme Court held that there resided no invention in that improvement.

In *French v. Carter*,³ the patent claimed a roof for a vault, which consisted, like an earlier roof, of two gable-stones, and two sloping roof-stones, and one cap-stone; and which differed from the earlier roof in that its roof-stones were narrower, and its cap-stone was wider, than the corresponding stones of the earlier vault. The Supreme Court held that these differences of degree did not constitute invention.

Circuit Court cases which have been decided by skilful judges furnish still other illustrations of the rule of this section.⁴

§ 31*a*. A meritorious exception, to the rule of the last section, is involved in the adjudicated validity of the Edison incandescent light patent.⁵ The carbon filament which

¹ *Estey v. Burdett*, 109 U. S. 640, 1884.

² *Preston v. Manard*, 116 U. S. 663, 1886.

³ *French v. Carter*, 137 U. S. 239, 1890.

⁴ *Stow v. City of Chicago*, 3 Bann. & Ard. 91, 1877; *White v. Lee*, 14 Fed. Rep. 790, 1882; *Woonsocket Rubber Co. v. Candee*, 23 Fed. Rep.

797, 1885; *Smith v. Murray*, 27 Fed. Rep. 69, 1886; *Hurd v. Snow*, 35 Fed. Rep. 423, 1888; *Blumenthal v. Burrell*, 43 Fed. Rep. 669, 1890; *Murphy v. Trenton Rubber Co.* 45 Fed. Rep. 571, 1891; *Caverly v. Deere*, 52 Fed. Rep. 763, 1892.

⁵ *Edison Electric Light Co. v. U. S. Electric Lighting Co.* 52 Fed. Rep. 300, 1892.

constitutes the only new part of the combination of the second claim of that patent, differs from the earlier carbon burners of Sawyer and Man, only in having a diameter of one-sixty-fourth of an inch or less, whereas the burners of Sawyer and Man had a diameter of one-thirty-second of an inch or more. But that reduction of one-half in diameter increased the resistance of the burner four-fold, and reduced its radiating surface two-fold, and thus increased eight-fold, its ratio of resistance to radiating surface. That eight-fold increase of proportion, enabled the resistance of the conductor of electricity from the generator to the burner, to be increased eight-fold, without any increase of percentage of loss of energy in that conductor, or decrease of percentage of development of heat in the burner; and thus enabled the area of the cross section of that conductor to be reduced eight-fold, and thus to be made with one-eighth of the amount of copper or other metal, which would be required if the reduction of diameter of the burner from one-thirty-second to one-sixty-fourth of an inch had not been made. And that great reduction in the size and cost of conductors, involved also a great difference in the composition of the electric energy employed in the system; that difference consisting in generating the necessary amount of electrical energy with comparatively high electromotive force, and comparatively low current, instead of contrarywise. For this reason, the use of carbon filaments, one-sixty-fourth of an inch in diameter or less, instead of carbon burners one-thirty-second of an inch in diameter or more, not only worked an enormous economy in conductors, but also necessitated a great change in generators, and did both according to a philosophy, which Edison was the first to know, and which is stated in this paragraph in its simplest form and aspect, and which lies at the foundation of the incandescent electric lighting of the world.

§ 32. Aggregation is not invention.

In *Hailes v. Van Wormer*¹ the patents passed upon, cov-

¹ *Hailes v. Van Wormer*, 20 Wallace, 353, 1873.

ered certain self-feeding coal stoves. These stoves were better than any which preceded them, because they contained more good things than were ever before assembled in that kind of heater. All of the things so assembled were old. The superiority of the patented stoves arose from the fact that sundry good features, theretofore scattered through several, were in them gathered into one such article of manufacture. The things so united did not, however, perform any joint function, but each did only what it had formerly done in former stoves. The Supreme Court held the whole to be a mere aggregation of devices, and not to be invention.

The case of *Reckendorfer v. Faber*¹ was based upon patents for a new and useful article, of which many millions of specimens had been made and sold since those patents were granted. That article was a piece of soft rubber united to one end of a lead pencil. The Supreme Court called attention to the fact that there was no joint operation performed by the pencil and the rubber, and therefore held the patents to be void for want of invention.

In *Pickering v. McCullough*² Justice MATTHEWS said: "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 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."

The first of these sentences has been thought to imply a severer doctrine than the second, and some of the lower courts have inclined to ascribe to the opinion a milder signification than the first sentence standing alone may appear to warrant.

¹ *Reckendorfer v. Faber*, 92 U. S. 357, 1875.

² *Pickering v. McCullough*, 104 U. S. 318, 1881.

The Circuit Court of Appeals for the third circuit has said that: "If, instead of an extract, the whole opinion be read, in connection with the authorities which are cited in it, it may be readily perceived that the substance of the doctrine intended to be affirmed, is that a combination, to be patentable, must produce a new and useful result as the product of the combination, and not a mere aggregate of several results, each the complete result of one of the combined elements." And that: "If it were essential to a valid patent for any combination whatever, that the mode of operation of every element included in the combination should be changed by each of the others, it would have been impossible to sustain several combination patents which have in fact been upheld, as, indeed, it would be difficult to conceive of any mechanical combination which would be both possible and patentable."¹

And Judge BAKER held that no such doctrine was essential to the decision of the case, nor is fairly deducible from the particular language above quoted from Justice MATTHEWS, as that, in a patentable combination, all the constituents must so enter into it that each qualifies the mode of action of every other, and that each element must not merely perform its own part in the combination, but must also in some way be directly and immediately concerned in the performance of their respective parts by every other of the elements; and that: "All that can be claimed to be settled by the case is, that a combination, to be patentable, must produce a single new and useful result, or an old result in a better or cheaper manner, as the product of the combination."²

And Judge MCKENNA expressly declined, when strenuously urged by counsel so to do, to recognize as an established rule of law, that in all cases where the action of each of the combined devices remains its own individual action, there is no patentable combination.³

¹ National Cash Register Co. v. American Cash Register Co. 58 Fed. Rep. 371, 1892.

Rep. 249, 1895.

² Heath Cycle Co. v. Hay, 67 Fed.

³ Bowers v. Von Schmidt, 63 Fed. Rep. 582, 1894.

And while the language above quoted from *Pickering v. McCullough* has been often quoted since it was delivered, there is no case in which the severer doctrine of the first sentence of that language has been applied to defeat any patent or claim which could have endured the milder doctrine of the second of those sentences, or the milder doctrine held in the three last mentioned cases. Indeed, the Supreme Court has shown its preference for the milder view, by substantially quoting the second sentence of Justice MATTHEWS,¹ while omitting the first sentence from all of its later decisions.

The law of this subject is well settled, and the dividing line between combinations and aggregations is well established. Every case must fall on one side or the other of that line, and no case can stand upon it. But the facts in particular cases, which will arise hereafter, will often make it difficult to determine upon which side of the line those cases respectively belong.² Such decisions may sometimes be made by direct analysis without extensive comparison; but in other cases reasoning by analogy from precedents must be resorted to, and therefore the precedents which have not already been mentioned are collected by name in a note.³

¹ *Brinkerhoff v. Aloe*, 146 U. S. 516, 1892.

² *Standard Oil Co. v. Southern Pacific Railroad Co.* 48 Fed. Rep. 110, 1891.

³ *Tack Co. v. Mfg. Co.* 109 U. S. 120, 1883; *Bussey v. Mfg. Co.* 110 U. S. 145, 1883; *Phillips v. Detroit*, 111 U. S. 607, 1883; *Stephenson v. Railroad Co.* 114 U. S. 158, 1884; *Beecher Mfg. Co. v. Atwater Mfg. Co.* 114 U. S. 523, 1884; *Thatcher Heating Co. v. Burtis*, 121 U. S. 293, 1886; *Hendy v. Iron Works*, 127 U. S. 375, 1887; *Royer v. Roth*, 132 U. S. 201, 1889; *Fond Du Lac County v. May*, 137 U. S. 407, 1890;

Union Edge Setter Co. v. Keith, 139 U. S. 539, 1891; *Adams v. Stamping Co.* 141 U. S. 539, 1891; *Wright v. Yuengling*, 155 U. S. 53, 1894; *Richards v. Elevator Co.* 158 U. S. 301, 1895; *Combined Can Co. v. Lloyd*, 11 Fed. Rep. 154, 1882; *Perry v. Foundry Co.* 12 Fed. Rep. 149, 436, 1882; *Doubleday v. Roess*, 11 Fed. Rep. 737, 1880; *Nicodemus v. Frazier*, 19 Fed. Rep. 260, 1884; *Stutz v. Armstrong*, 20 Fed. Rep. 843, 1884; *Hayes v. Bickelhaupt*, 21 Fed. Rep. 566, 1884; *Mosler Safe & Lock Co. v. Mosler*, 22 Fed. Rep. 901, 1885; *Watson v. Railway Co.* 23 Fed. Rep. 445, 1885; *Peard v.*

§ 33. The rule of the last section does not state nor imply that all the parts of a patentable combination must act at the same time. The fact on that point is no criterion by means of which to distinguish invention from aggregation. Justice CURTIS, in a Circuit Court case,¹ stated the true doctrine on this subject, and stated it with marked lucidity, saying: "To make a valid claim for a combination, it is not necessary that the several elementary parts of the combination should act simultaneously. If those elementary parts are so arranged that the successive action of each contributes to produce some one practical result, which result, when attained, is the product of the simultaneous or successive action of all the elementary parts, viewed as one entire whole, a valid claim for thus combining those elementary parts may be made." And that view of the law has also been taken in more recent times.²

§ 34. It is not invention to duplicate one or more of the parts of a machine, unless that duplication causes a new mode of operation of the duplicate parts.

In *Dunbar v. Myers*³ the patent was based on a circular-saw mill adapted to sawing lumber into thin sheets to be used for the backs of picture-frames and mirrors. It dif-

Johnson, 23 Fed. Rep. 509, 1885; Ames v. Spring Bed Co. 24 Fed. Rep. 785, 1885; Phipps v. Yost, 26 Fed. Rep. 448, 1886; Troy Machinery Co. v. Bunnell, 27 Fed. Rep. 810, 1886; Duesh v. Medlar Co. 30 Fed. Rep. 619, 1887; J. L. Mott Iron Works v. Skirm, 30 Fed. Rep. 621, 1887; Schmid v. Mfg. Co. 37 Fed. Rep. 347, 1889; Ide v. Engine Co. 39 Fed. Rep. 548, 1889; Jones v. Clow, 39 Fed. Rep. 785, 1889; Richards v. Railroad Co. 40 Fed. Rep. 165, 1889; Steam Gauge and Lantern Co. v. Williams, 42 Fed. Rep. 845, 1890; National Bunching Machine Co. v. Williams Co. 44 Fed. Rep. 193, 1890; Campbell v. Bailey,

45 Fed. Rep. 564, 1891; Brickill v. Hartford, 49 Fed. Rep. 372, 1892; Brickill v. Baltimore, 50 Fed. Rep. 274, 1892; Appleton Mfg. Co. v. Starr Mfg. Co. 51 Fed. Rep. 284, 1892; Boston Lasting Machine Co. v. Woodward, 53 Fed. Rep. 481, 1893; Bagley & Sewall Co. v. Wood Pulp Co. 58 Fed. Rep. 216, 1893.

¹ Forbush v. Cook, 2 Fisher, 669, 1857.

² Holmes Alarm Tel. Co. v. Domestic Tel. Co. 42 Fed. Rep. 226, 1890; San Francisco Bridge Co. v. Keating, 68 Fed. Rep. 353, 1895.

³ Dunbar v. Myers, 94 U. S. 197, 1876.

fered from former machines used for the same purpose, mainly in the fact that it had a plate on each side of the saw for the purpose of expanding the saw kerf and thus keeping the sawed parts away from the sides of the saw, whereas earlier machines had such a plate only on one side of the saw. The two plates of the patented machine differed from each other in diameter and in one or two other respects, but the function performed by each of them was substantially identical with that performed by the other. The Supreme Court therefore held the claim which covered the additional plate to be void for want of invention.

In *Slawson v. Grand Street R. R. Co.*¹ the patented improvement consisted merely in putting an additional pane of glass in the fare-box of a street car, on the side next to the passengers, so that they could see into the box as well as the driver, for whose use one pane of glass was already in the side of the box next to him. The Supreme Court said that the putting in of that additional pane of glass required no more invention than the putting of an additional window in a room opposite one already there.

*Millner v. Voss*² was decided by Judge BOND in Virginia. The patent involved, purported to cover an arrangement of furnaces and flues in a tobacco-curing house. It appeared to differ from prior arrangements only in the fact that each of the furnaces had two or more fire-places of different sizes on each side of a chimney, whereas former arrangements had but one. Judge BOND wittily said that, "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." Mr. Milner's patent was therefore held to be void.

And the rule of this section has been applied in cases not so simple as those above mentioned;³ and may be applied still more widely hereafter.

¹ *Slawson v. Grand Street R. R. Co.* 107 U. S. 653, 1882.

² *Millner v. Voss*, 4 Hughes, 262, 1882.

³ *Electrical Accumulator Co. v.*

Julien Electric Co. 38 Fed. Rep. 138, 1889; *Sugar Apparatus Co. v. Yaryan Mfg. Co.* 43 Fed. Rep. 149, 1890.

The exception which belongs to the general rule of this section, is illustrated by the Parker water-wheel. Before the date of that invention, it was customary to place a single turbine, upon a vertical shaft, in such a way that the pressure of the water was partly exerted endwise of the shaft; and that pressure, in addition to the weight of the shaft, and of the wheel, had to be sustained by the bearing of the shaft. Parker placed two such wheels in a pair, face to face, on the same shaft, and the water entered between them, so that the downward pressure of the water upon one wheel was balanced by the upward pressure of the water upon the other wheel. In this case the duplication of the wheel caused a new mode of operation of the duplicate parts; and the patent was held to be valid.¹

§ 35. It is not invention to omit one or more of the parts of an existing thing, unless that omission causes a new mode of operation of the parts retained.

Stow v. Chicago,² decided by Judge BLODGETT, is the case which perhaps most exactly corresponds with this rule. The patent in that case covered a wood pavement like that of Nicholson, except that it omitted the board foundation and also the board strips of that earlier pavement. Judge BLODGETT held that those omissions constituted no invention, saying: "A reconstruction of a machine, so that a less number of parts will perform all the functions of the greater, may be invention of a high order, but the omission of a part, with a corresponding omission of function, so that the retained parts do just what they did before in the combination, cannot be other than a mere matter of judgment, depending upon whether it is desirable to have the machine do all, or less, than it did before." These views were also reiterated and reinforced by the same judge many years after they were stated and applied by him in the leading case.³

¹ *Parker v. Hulme*, 1 Fisher, 44, 92, 1877.
1849.

² *McClain v. Ortmyer*, 33 Fed.

³ *Stow v. Chicago*, 3 Bann & Ard. Rep. 287, 1888.

And the Supreme Court, when the latter case reached that tribunal, affirmed Judge BLODGETT'S decision;¹ and has since rendered several decisions to the same effect.²

The exception which is stated in the general rule of this section was judicially applied, and is well illustrated, in a case decided by Judge NATHANIEL SHIPMAN, where invention was found to reside in so reorganizing a meat-mincing machine, as to dispense with some of its parts, and as to cause the parts retained to do the work of the original machine.³ And in a case which involved a process patent, the Supreme Court has decided that invention resided in omitting one of the steps in an old process, where the resulting new process was the result of careful and long-continued experiment, and where its utility was decidedly greater than that of the old process.⁴ And Judge GILBERT has held that it is invention to omit, from a prior process, a step which those skilled in its performance considered essential, but which the inventor proved to be useless.⁵

§ 36. It is not invention to improve a known structure by substituting an equivalent for either of its parts.⁶

What is signified in the patent law by the word "equivalent" is explained in detail in the chapter on infringement. The subject is of double importance, because it relates sometimes to the validity and sometimes to the infringement of patents. A. B. may construct and may patent a machine which differs from the prior patented machine of C. D. in one part only. If the courts decide that the new part inserted, is an equivalent to the old part omitted, then the machine of A. B. will be an infringement; and it will

¹ McClain v. Ortmayer, 141 U. S. 425, 1891.

² Hat Pouncing Machine Co. v. Hedden, 148 U. S. 489, 1893; Giles v. Heysinger, 150 U. S. 632, 1893; Olin v. Timken, 155 U. S. 148, 1894;

³ Enterprise Mfg. Co. v. Sargent, 28 Fed. Rep. 187, 1896.

⁴ Lawther v. Hamilton, 124 U. S. 1, 1887.

⁵ Pacific Contracting Co. v. Bingham, 62 Fed. Rep. 283, 1894.

⁶ Smith v. Nichols, 21 Wallace, 119, 1874; Crouch v. Roemer, 103 U. S. 797, 1880; Cochrane v. Waterman, 1 McArthur's Patent Cases, 54, 1844; Perry v. Foundry Co. 12 Fed. Rep. 436, 1882; Celluloid Mfg. Co. v. Tower, 26 Fed. Rep. 451, 1885.

not be an invention, unless the new part, not only performs the function of the part for which it was substituted, but also performs another function by another mode of operation.¹ If, on the other hand, the courts hold that the part inserted is not an equivalent of the old part omitted, then the machine of A. B. may be an invention, and it will not be an infringement of any claim covering the entire machine of C. D.

§ 37. It is not invention to combine old devices into a new article without producing any new mode of operation.²

This rule differs from that of Section 32 in not depending upon absence of joint mode of operation, but only upon antiquity of mode of operation. For this reason, while the invalidity of a patent, under the rule of Section 32, can be shown, where it exists, from the face of the patent; the invalidity of a patent under the rule of this section requires evidence aliunde for its establishment, and depends upon the state of the prior art for its applicability.³ The meaning and scope of this rule, like all the primary rules of this chapter, require illustration and example for full comprehension; and such examples and illustrations are abundantly supplied by the adjudicated cases.

*Stimpson v. Woodman*⁴ involved a patent for a machine for pebbling leather. It gave the leather the pebbled surface by means of a roller, which had the counterpart of that surface engraved or sunk on its periphery. The same kind of roller had previously been used for the same purpose by hand, and the same kind of machine had been used for compressing leather, except that the roller in it was smooth. The Supreme Court held that the change involved in putting the old figured hand roller in the place of the plain roller of the machine, involved no invention, and that the patent was void, if the facts were as stated.

¹ *In re Hebbard*, 1 McArthur's Patent Cases, 550, 1857.

² *Burt v. Evory*, 133 U. S. 349, 1890; *Florsheim v. Schilling*, 137 U. S. 77, 1890; *Morgan Envelope Co. v. Albany Paper Co.* 40 Fed. Rep.

582, 1889; *Mahon v. McGuire Mfg. Co.* 51 Fed Rep. 684, 1892.

³ *Brickill v. Hartford*, 57 Fed. Rep. 217, 1893.

⁴ *Stimpson v. Woodman*, 10 Wallace, 117, 1869.

*Heald v. Rice*¹ was based on a patent which covered a certain previously known straw feeding attachment in combination with a certain previously known return-flue boiler, that straw-feeding attachment having been previously combined with a fire-box boiler. The utility of the return-flue boiler in that combination was much greater than that of the fire-box boiler, but the Supreme Court nevertheless held that there was no invention in the union of the former with the straw-feeding attachment.

*Hall v. Macneale*² shows the following state of facts. The patentee first made safe doors, the plates of which were held together by cored conical arbors, having screw threads cut on their exterior surfaces, and later he made other safe doors, the plates of which were held together by solid conical arbors which had no such screw threads as the cored conical arbors had, and he afterwards obtained a patent for the combination of the plates of safe doors with solid conical arbors having such screw threads. The Supreme Court, speaking by Justice BLATCHFORD, said that "There was no invention in adding to the solid conical bolt the screw thread of the cored conical bolt."

Many Circuit Court cases also involve the doctrine of this section. In one such case³ Justice BLATCHFORD held a patent to be void for want of invention, which covered a combination of a whip socket having an annular recess in it, with a flexible elastic ring held in that recess by its own elasticity, and provided on its inner edge with non-contiguous projections, separated so that they could not be pressed into contact with each other by the insertion of the whip handle into the ring. That decision was based on the fact that a prior whip socket having an annular recess, had been combined with a plain rubber ring in that recess, and on the further fact that flexible elastic rings constructed like those of the patent had been combined with a whip socket

¹ *Heald v. Rice*, 104 U. S. 754, 1882.
1881.

³ *Searls v. Merriam*, 22 Off. Gaz.

² *Hall v. Macneale*, 107 U. S. 90 1040, 1882.

which had no annular recess, but which clamped that ring between the upper end of that socket and a cap above it. Judge LOWELL likewise decided three similar cases. In one of them¹ he held it to be no invention to give paper collars the same kind of surface that had theretofore been impressed upon other articles of paper. In another² he decided that embossed lines on writing paper being old, and ogee lines on other paper being old, there was no invention in embossing ogee lines on writing paper to serve as guides to the eye of the writer. In a third case³ he held that soft base-balls having been covered with a double cover, and hard base-balls having been covered with a single cover, there was no invention in covering a hard base-ball with a double cover. And other still later cases illustrate the same doctrine.⁴

But while a new combination with an old mode of operation is not invention, an old combination with a new mode of operation may be an invention. The Supreme Court found that the Henry Adams corn sheller was an invention, and was patentable to him, although his father, Augustus Adams, had previously made corn shellers from which that of Henry differed only in reversing the direction of revolution of one of its parts. That part was the revolving beater, which Augustus Adams made to turn in the direction opposite to the desired motion of the ears of corn, expecting it to knock back any ear that might ride upon another, and

¹ *Union Paper Collar Co. v. Leland*, 1 Bann. & Ard. 491, 1874.

² *Cone v. Morgan Envelope Co.* 4 Bann. & Ard. 109, 1879.

³ *Mahn v. Harwood*, 3 Bann. & Ard. 517, 1878.

⁴ *Yale Lock Mfg. Co. v. National Bank*, 17 Fed. Rep. 533, 1883; *Kaaps v. Hartung*, 23 Fed. Rep. 187, 1885; *Troy Machinery Co. v. Bunnell*, 27 Fed. Rep. 810, 1886; *Union Edge Setter Co. v. Keith*, 31 Fed. Rep. 46, 1887; *Washburn & Moen Mfg.*

Co. v. Barbed Wire Co. 33 Fed. Rep. 273, 1888; *Low v. Stove Co.* 36 Fed. Rep. 903, 1888; *Rodebaugh v. Jackson*, 37 Fed. Rep. 886, 1889; *Royer v. Coupe*, 38 Fed. Rep. 115, 1889; *Royer v. Belting Co.* 40 Fed. Rep. 160, 1889; *Gates Iron Works v. Fraser*, 42 Fed. Rep. 49, 1890; *Abbott Machine Co. v. Bonn*, 51 Fed. Rep. 223, 1892; *Hunt v. Garsed*, 51 Fed. Rep. 678, 1892; *Electric Ry. Co. v. Jamaica R. R. Co.* 61 Fed. Rep. 655, 1894.

thus tend to prevent choking the shelling devices. This mode of operation was not successful, and Henry Adams reversed the revolution of the beater so that its wings moved in the same direction as that of the ears of corn, and thus drove them forward into the shelling devices. The old combination, with that new mode of operation, was entirely successful, and the patent thereon was therefore held to be valid.¹

§ 38. It is not invention to use an old thing or process for a new purpose.

In *Tucker v. Spalding*² the patent covered a combination of a circular disk with removable saw teeth. There was a prior combination of a circular disk with removable cutters for the purpose of cutting tongues and grooves. The Supreme Court held that if what the latter combination did was in its nature the same as sawing, and if its structure and its action suggested to the mind of the ordinarily skilful mechanic this double use to which it could be adapted without material change, then the combination of the patent was but a double use of the older combination, and was therefore not an invention, and not patentable.

*Brown v. Piper*³ is a case in which the Supreme Court held that a patent for an apparatus for preserving fish and other articles in a close chamber by means of a freezing mixture having no contact with the atmosphere of the preserving chamber, covered nothing but a double use of the well-known ice-cream freezer.

In *Roberts v. Ryer*⁴ the same tribunal decided that to change the form and proportions of the compartments of a refrigerator, so as to utilize the descending instead of the ascending current of endlessly circulating air, was but a double use of that refrigerator.

¹ *Keystone Mfg. Co. v. Adams*, 151 U. S. 142, 1894.

² *Tucker v. Spalding*, 13 Wallace, 453, 1871.

³ *Brown v. Piper*, 91 U. S. 37, 1875.

⁴ *Roberts v. Ryer*, 91 U. S. 157, 1875.

Many other cases also embody the rule of this section, and apply it to particular double uses of old inventions.¹

- ¹ King v. Gallun, 109 U. S. 90, 1883; Pennsylvania Railroad Co. v. Truck Co. 110 U. S. 494, 1883; Blake v. San Francisco, 113 U. S. 679, 1884; Miller v. Foreo, 116 U. S. 27, 1885; Dreyfus v. Searlo, 124 U. S. 63, 1887; Hondy v. Iron Works, 127 U. S. 375, 1887; Crescent Brewing Co. v. Gottfried, 128 U. S. 169, 1888; Peters v. Active Mfg. Co. 129 U. S. 530, 1889; Peters v. Hanson, 129 U. S. 541, 1889; Aron v. Railway Co. 132 U. S. 84, 1889; Marchand v. Emken, 132 U. S. 195, 1889; Howe Machine Co. v. Needle Co. 134 U. S. 397, 1890; St. Germain v. Brunswick, 135 U. S. 230, 1890; Fond Du Lac County v. May, 137 U. S. 406, 1890; Busell Trimmer Co. v. Stevens, 137 U. S. 433, 1890; Patent Clothing Co. v. Glover, 141 U. S. 563, 1891; Ansonia Co. v. Electrical Supply Co. 144 U. S. 18, 1892; Smith v. Saddle Co. 148 U. S. 679, 1893; Wollensak v. Sargent, 151 U. S. 227, 1894; Gates Iron Works v. Fraser, 153 U. S. 347, 1894; Bean v. Smallwood, 2 Story, 408, 1843; Meyer v. Pritchard, 1 Bann. & Ard, 261, 1874; Adams v. Loft, 4 Bann. & Ard. 496, 1879; Royer v. Mfg. Co. 20 Fed. Rep. 853, 1884; Howe Machine Co. v. Needle Co. 21 Fed. Rep. 630, 1884; Spill v. Celluloid Mfg. Co. 21 Fed. Rep. 639, 1884; Celluloid Mfg. Co. v. Noyes, 25 Fed. Rep. 319, 1885; Aron v. Manhattan Ry. Co. 26 Fed. Rep. 317, 1886; Marchand v. Emken, 26 Fed. Rep. 629, 1886; Shenfield v. Mfg. Co. 27 Fed. Rep. 808, 1886; Busell Trimmer Co. v. Stevens, 28 Fed. Rep. 575, 1886; Gloucester Isinglass & Glue Co. v. Lo Page, 30 Fed. Rep. 370, 1887; Ansonia Brass & Copper Co. v. Electrical Supply Co. 32 Fed. Rep. 81, 1887; Acme Hay Harvesting Co. v. Martin, 33 Fed. Rep. 249, 1888; Mann's Car Co. v. Monarch Car Co. 34 Fed. Rep. 130, 1888; Babcock & Wilcox Co. v. Pioneer Iron Works, 34 Fed. Rep. 338, 1888; Ansonia Brass & Copper Co. v. Electrical Supply Co. 35 Fed. Rep. 68, 1888; Rubber Harness Trimming Co. v. Rubber Comb Co. 35 Fed. Rep. 498, 1888; Hale & Kilbourn Mfg. Co. v. Hartford Mattress Co. 36 Fed. Rep. 762, 1888; Schmid v. Mfg. Co. 37 Fed. Rep. 345, 1889; Foster v. Crossin, 44 Fed. Rep. 62, 1890, American Road Machine Co. v. Pennock & Shark Co. 45 Fed. Rep. 255, 1890; Watson v. Stevens, 47 Fed. Rep. 117, 1891; Whitcomb v. Coal Co. 47 Fed. Rep. 660, 1891; Zinsser v. Krueger, 48 Fed. Rep. 298, 1891; Cahoon Mfg. Co. v. Harness Co. 45 Fed. Rep. 585, 1891; Buckingham v. Iron Co. 51 Fed. Rep. 236, 1892; Steiner Extinguisher Co. v. Adrian, 52 Fed. Rep. 733, 1892; Steiner Extinguisher Co. v. Adrian, 59 Fed. Rep. 132, 1893; Forgie v. Oil-Well Supply Co. 57 Fed. Rep. 747, 1893; Consolidated Bunging Apparatus Co. v. Brewing Co. 60 Fed. Rep. 93, 1894; Brown- ing v. Telephone Co. 61 Fed. Rep. 845, 1894; Adams Electric Ry. Co. v. Lindell Ry. Co. 63 Fed. Rep. 990, 1894; Schreiber & Sons Co. v. Grim, 65 Fed. Rep. 221, 1895.

On the other hand, if an old device or process be put to a new use, which is not analogous to the old one, and if the adaptation of the subject to the new use requires the exercise of invention, such new use will not be denied the merit of patentability.¹ And where a new use of an old thing consists in combining it with other things in a new organization, invention may be present.²

§ 39. The rule of the last section is an easy one to apply to a case to which it is relevant, if the thing or process covered by the patent in that case, is used for the new purpose without being changed either in construction or mode of operation. That is, however, not always the fact; and where it is not the fact, the rule is of but minor practical utility as a guide to a just conclusion. It does not apply to using any new thing for a new purpose, and in order to apply it to anything which differs somewhat from the most similar thing that preceded it, it is necessary first to determine whether that difference constitutes legal novelty: to determine whether the thing covered by the patent is really old. That question must be investigated by the aid of rules other than that of the last section; and when it is determined in the negative, it will follow that the rule of that section does not apply to the case.

§ 40. Want of invention, if it really exists in a particular process or thing, can nearly always be detected by one or another of the foregoing rules. When a case arises to which neither of them applies, and relevant to which the mind remains in uncertainty, that uncertainty may be removed by means of the rule in *Smith v. The Dental Vulcanite*

¹ *Ansonia Co. v. Electrical Supply Co.* 144 U. S. 18, 1892; *Lovell Mfg. Co. v. Cary*, 147 U. S. 637, 1893; *Potts v. Creager*, 155 U. S. 608, 1895; *Cary v. Wolff*, 24 Fed. Rep. 139, 1885; *Rapid Service Store Ry. Co. v. Taylor*, 43 Fed. Rep. 253, 1887; *Mack v. Optical Mfg. Co.* 52

Fed. Rep. 821, 1892; *Brown Mfg. Co. v. Mast* 53 Fed. Rep. 585, 1892; *Loewer v. Ford*, 55 Fed. Rep. 62, 1893; *New Departure Bell Co. v. Bevin Mfg. Co.* 64 Fed. Rep. 863, 1894.

² *Telephone Cases*, 126 U. S. 572, 1887.

Co.¹ namely: When the other facts in a 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. But the fact that the device has been forced into extensive sale, by judicious advertising and business energy, does not prove the presence of invention in any case.²

§ 41. To change the form of a machine or manufacture is sometimes invention, and sometimes it is not invention. Where a change of form is within the domain of mere construction, it is not invention; but where it involves a change of mode of operation, or of function, or of result, it is invention, unless it is held to be otherwise in pursuance of some rule other than any that relates to form.³

§ 41a. To change the proportions of a machine or manufacture will seldom, or never amount to invention; but it may be invention to change the proportions of the ingredients of a chemical combination, or other composition of matter. For example, Charles Goodyear invented soft vulcanized rubber, consisting of crude India rubber and sulphur in the proportion of one part of sulphur to five parts

¹ *Smith v. Dental Vulcanite Co.* 93 U. S. 495, 1876; *Hollister v. Benedict Mfg. Co.* 113 U. S. 72, 1884; *Adams v. Stamping Co.* 141 U. S. 542, 1891; *Magowan v. Belting Co.* 141 U. S. 343, 1891; *Gandy v. Belting Co.* 143 U. S. 594, 1892; *Barb Wire Patent*, 143 U. S. 284, 1892; *Sessions v. Romadka*, 145 U. S. 44, 1892; *Topliff v. Topliff*, 145 U. S. 164, 1892; *Hat Pouncing Machine Co. v. Hedden*, 148 U. S. 489, 1893; *Krementz v. Cottle Co.* 148 U. S. 560, 1893; *Duer v. Lock Co.* 149 U. S. 223, 1893; *Keystone Mfg. Co. v. Adams*, 151 U. S. 143, 1894; *Olin v. Timken*, 155 U. S. 155, 1894; *Potts v. Creager*, 155 U. S. 609, 1895.

² *McClain v. Ortmyer*, 141 U. S. 427, 1891; *Fox v. Perkins*, 52 Fed. Rep. 213, 1892.

³ *Winans v. Denmead*, 15 Howard, 341, 1853; *Davis v. Palmer*, 2 Brock, 310, 1827; *Mable v. Haskell*, 2 Cliff, 510, 1865; *Aiken v. Dolan*, 3 Fisher, 204, 1867; *United States Bung Mfg. Co. v. Independent Bung Co.* 31 Fed. Rep. 76, 1887; *Electrical Accumulator Co. v. Julien Electric Co.* 38 Fed. Rep. 143, 1889; *Parker v. Dickinson*, 38 Fed. Rep. 413, 1889; *Hammond Buckle Co. v. Goodyear Rubber Co.* 58 Fed. Rep. 413, 1893; *Goldie v. Iron Co.* 64 Fed. Rep. 237, 1894.

of rubber, mixed and subjected to a high degree of heat; and afterward Nelson Goodyear invented hard vulcanized rubber, consisting of equal, or comparatively equal, parts of sulphur and crude rubber mixed and subjected to a high degree of heat. In this case, the change in proportion of the two materials resulted in two entirely distinct articles, having entirely distinct modes of operation and functions; and the later article was well held to be an invention.¹

§ 42. A question of invention is a question of fact and not of law;² though it is to be determined by means of the rules of law set forth in this chapter. In applying those rules, patents are not held void for want of invention except where invention is clearly absent.³

§ 43. Every inventor or constructor is presumed by the law to have borrowed from another whatever he produces that was actually first invented and used by that other, in the United States;⁴ or was previously patented⁵ or described in a printed publication⁶ in any country, after having been invented by another. It follows that such of the foregoing rules as involve an inquiry into the state of the art to which the thing or process in controversy pertains, may involve an inquiry into the date and the character of inventions which were in fact unknown to the patentee, when he produced that thing or process.

But it is not settled whether such an inquiry into the state of the art, can include any foreign patent, previously issued on the application of the same inventor, on an invention not near enough like the invention covered by his later United States patent, to make it true that that invention

¹ *Goodyear v. Vulcanite Co.* 2 Fisher, 312, 1856.

² *Poppenhusen v. Falke*, 5 Blatch. 49, 1862; *Shuter v. Davis*, 16 Fed. Rep. 564, 1883.

³ *Reiter v. Jones*, 35 Fed. Rep. 421, 1888; *Marvin v. Gotshall*, 36 Fed. Rep. 908, 1888; *Hunt Bros. Fruit Packing Co. v. Cassidy*, 53 Fed. Rep. 260, 1892.

⁴ *Crompton v. Knowles*, 7 Fed. Rep. 203, 1881; *Williams v. Rubber Shoe Co.* 54 Fed. Rep. 499, 1893; *Allen v. Steele*, 64 Fed. Rep. 795, 1894.

⁵ *Duer v. Lock Co.* 149 U. S. 223, 1893.

⁶ *French v. Carter*, 137 U. S. 239, 1890.

was first patented, or caused to be patented, in a foreign country.¹

§ 44. It was shown in Section 23 that patents are grantable for nothing but inventions. It is also the law that they can be granted only to those who invented the inventions they respectively cover, or to the assignees or legal representatives of those persons. The subjects of assignments and devolutions of inventions and patents are explained in the chapter on title; but this is the proper place in which to treat the subjects of joint invention and sole invention.

§ 45. If A. B. notices the need of a new machine to perform a particular function, and thereupon conceives the plan of such a machine, and proceeds to embody that plan in a successful working structure, and does all this without assistance from any other person; then it is clear that he is a sole inventor of that machine. If, on the other hand, C. D. notices the need of a new machine to perform a particular function, and calls the attention of E. F. to the matter; and a successful invention is, after many conversations between the two, embodied in a working machine constructed by the hands of both, then it may be that C. D. is the sole inventor, or it may be that E. F. is the sole inventor, or it may be that both are joint inventors of the machine they produced. Upon what considerations the fact on this point depends, it is now in order to point out.

§ 46. Every machine, before it can be used, must be constructed as well as invented. If one man does all the inventing and another does all the constructing, the first is the sole inventor. Equally axiomatic is the proposition that if both participate in the inventing, they are joint inventors, regardless of whether both take part in the constructing. Plainly true as this last doctrine appears to be, there are several circuit court decisions with which it is not perfectly harmonious.

¹ Edison Electric Light Co. v. U. S. Electric Lighting Co. 52 Fed. Rep. 304, 1892, Revised Statutes, Section 4887.

Justice NELSON once decided that where A. B. aided C. D. to invent a machine, but did not furnish all the information necessary to complete the invention, and where C. D. thereupon did the required residue of the inventing, and did all of the constructing of the machine, without further help, he was the sole inventor of that machine.¹

Justice SWAYNE, on the other hand, decided that where A. B. drew a sketch in sand to represent his ideas of a possible improvement of a portable steam engine, and where C. D. from that sketch made working drawings, and from those drawings built a working engine, without further interference or suggestion from A. B., the latter was the sole inventor of the improvement so produced.²

Now, if we apply the doctrine of Justice NELSON to the facts passed upon by Justice SWAYNE, we shall probably be driven to the conclusion that C. D., and not A. B., was the sole inventor of that improvement in steam engines, because it is very improbable that any mere sketch in sand furnished C. D. with all the information necessary to complete that invention. There must have been something which, in the language of Justice NELSON, "was left for him to devise and work out by his own skill or ingenuity, in order to complete the arrangement."

In the case before Justice NELSON it was C. D., and in that before Justice SWAYNE it was A. B. who had obtained a sole patent. In each case the defendant insisted that the other man concerned in the production of the invention, and not the patentee, was the sole inventor, and in both cases that contention was evidently unfounded in fact. The patents were *prima facie* evidence of their own validity, and not being attacked at their vulnerable points were necessarily sustained. Had the defendant in either case urged the defence of joint invention as being fatal to a sole patent, then the true question would have been before the court; and the charge to the jury in the first case, or the opinion

¹ Pitts v. Hall, 2 Blatch. 229, 1851.

² Blandy v. Griffith, 3 Fisher, 609, 1869.

of the judge in the other, would have been adapted to that issue. The failure of counsel to take the proper ground of defence in the two cases, deprived the profession and the public of what would doubtless have been very instructive deliverances relevant to the point under present inspection. Taking into account, however, the facts of the two cases and the lack of harmony between the doctrines involved in the two opinions, it is safest to lay them both out of view in the present connection. Both cannot be followed by the federal courts, and it is not probable that either will be. The question has not been squarely presented to such a tribunal, but when it is so presented it will doubtless be decided that where two or more persons exercised their inventive faculties in the mutual production of a new and useful process or thing, those persons are joint inventors thereof, regardless of whether one, or part, or all, or neither of those persons constructed or helped to construct the first specimen of that thing, or performed or helped to perform the first instance of that process.

§ 47. The case of the *Agawam Co. v. Jordan*¹ is not inconsistent with what is advanced at the close of the last section. The defendant in that case did not set up a joint invention by the patentee and another, but set up an alleged sole invention by that other of the thing patented. The most that it could get its witness to testify, however, was that he suggested to the patentee one of the parts of one of the combinations secured by the patent, but that the patentee himself contrived the devices by means of which that part was incorporated into that combination. The patentee did not claim the suggested part as his invention, but only claimed several new combinations of old devices, and among the number a combination of several things, one of which was said to have been suggested by the defendant's witness. In that state of facts it was clear that the latter was neither sole nor joint inventor of anything covered by the patent, and accordingly the Supreme Court so decided.

¹ *Agawam Co. v. Jordan*, 7 Wallace, 583, 1868.

And the case of *Forgie v. Oil Well Supply Co.*¹ is also consistent with the views of the last section. In that case Forgie wanted a machine by means of which to exert great power horizontally, and it occurred to him that a lifting jack might be somehow used for the purpose. With this view he called on Barrett, who was the inventor and manufacturer of a particularly good lifting jack, and presented his case to him. Barrett thereupon caused his lifting jack to be reconstructed on a plan prescribed by himself, and thereafter made a number of the reconstructed tools for Forgie, who sold them to others who, like himself, wanted such a machine. They filled the vacant place by entirely successful operation, and became very popular. Thereupon Forgie applied for and obtained a patent on the reconstructed machine as his own invention; but the Circuit Court of Appeals for the third circuit held the patent to be void, because the machine had been produced by Barrett, and not by Forgie.

§ 48. In order to make an invention of importance, a considerable fund of general knowledge must be possessed by the inventor. Where that fund was acquired before he undertook his invention, it is easy to see that those who imparted it, are not thereby made joint inventors with him. Though not quite so obvious, it is equally certain that if, pending his experiments, an inventor seeks and secures one point of information from a scientist, and another from a machinist, and a third from a book, he is not, on account of having done the first two, any less a sole inventor than he is on account of having done the last.²

§ 49. To constitute a man an inventor, it is not necessary for him to have skill enough to embody his invention in a working machine, or in a model, or even in a drawing. If a man furnishes all the ideas needed to produce the invention aimed at, he may avail himself of the mechanical skill of others, to practically embody or represent his contrivance,

¹ *Forgie v. Oil Well Supply Co.*
58 Fed. Rep. 871, 1893.

² *O'Reilly v. Morse*, 15 Howard,
62, 1853.

and still be the sole inventor thereof.¹ But it is not invention to conceive a result, and then employ another to produce that result.²

§ 50. Under the statute, only he or they who have invented a particular thing can lawfully obtain a patent therefor, except in cases where the applicant is an assignee or legal representative of the true inventor or inventors. It follows that if one of two or more persons obtain a patent for a process or thing which was jointly invented by them all, that patent is not valid.³ In such a case it is not true that the patentee invented the thing patented. He only helped to invent it. If he could have a valid patent for that thing or process, each of his co-inventors could do likewise, and each of several persons would possess the exclusive right to the same. As to each other, such a state of affairs among patentees would be impossible, and as to the public it would be intolerable.

§ 51. So also if several persons obtain a joint patent for what was invented solely by one of them, that patent is void.⁴ And where several independent inventions are claimed by several different claims in a joint patent, and where one of those inventions was made by one of the joint applicants for the patent, without any co-operation of another joint applicant; the claim of the patent, which covers that invention is void.⁵ There is no statutory authority to grant a patent or a claim to a non-inventor jointly with an inventor, without an assignment or a death, any more than there is to grant a patent to a non-inventor alone. But very convincing evidence is required to estab-

¹ Sparkman v. Higgins, 1 Blatch. 209, 1846; Stearns v. Davis, 1 McArthur's Patent Cases, 696, 1859. Smith v. Stewart, 55 Fed. Rep. 483, 1893.

² Streat v. White, 35 Fed. Rep. 426, 1888.

³ Arnold v. Bishop, 1 McArthur's Patent Cases, 36, 1841; H. T. Slem-

mer's Appeal, 58 Penn. 164, 1864.

⁴ Ransom v. New York, 1 Fisher, 269, 1856; Hotchkiss v. Greenwood, 4 McLean, 461, 1848; Barrett v. Hall, 1 Mason, 473, 1818; Royer v. Coupe, 29 Fed. Rep. 363, 1886; Stewart v. Tenk, 32 Fed. Rep. 665, 1887.

⁵ Heulings v. Reid, 58 Fed. Rep. 868, 1893.

lish the invalidity of a patent on the ground stated in this section.¹

¹ Button Fastener Co. v. Lucas, 28 Fed. Rep. 871, 1886; Schlicht & Field Co. v. Machine Co. 36 Fed.

Rep. 595, 1888; Priestly v. Montague, 47 Fed. Rep. 651, 1891.

CHAPTER III.

NOVELTY.

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| 52. Novelty necessary to patentability. | 66. Novelty not negatived by antiquity of parts. |
| 53. Novelty defined. | 67. Novelty not negatived by prior accidental and not understood production. |
| 54. Not negatived by knowledge or use in a foreign country. | 68. Novelty not negatived by anything neither designed, nor apparently adapted, nor actually used for the same purpose as the |
| 55. Not negatived by private patent granted in a foreign country. | 69. Comparative dates. [invention. |
| 56. Prior printed publications. | 70. Dates of patented inventions. |
| 57. Fulness of prior patents and printed publications. | 71. Novelty is negatived by one instance of prior knowledge and use in this country. |
| 58. Novelty not negatived by any abandoned application. | 72. Novelty is negatived by prior making without using. |
| 59. Qualification of the last rule. | 73. Inventor's lack of knowledge of anticipating matter is immaterial. |
| 60. Successful prior applications. | 74. Old thing derived from new source. |
| 61. Novelty not negatived by any unpublished drawing, or prior model. | 75. Questions of novelty are questions of fact. |
| 62. Novelty not negatived by anything substantially different. | 76. Burden of proof relevant to novelty. |
| 63. Abandoned experiments. | |
| 64. Novelty in cases of designs. | |
| 65. Novelty not negatived by anything apparently similar or chemically identical, but practically useless. | |

§ 52. THE statutes of the United States have always provided that anything to be patentable must be new. Statements that some things are not patentable because, though new in a commercial sense, they are not new in the eye of the patent law, occur in a few reported cases. In every such instance, however, it would have been more accurate to say that some things are not patentable because, though new things, they are not invented things. Such things lack patentability not because they lack newness, but because

they lack invention. The subject belongs to the domain of invention and not to that of novelty, and it is therefore treated in the second chapter of this book. With this explanation, it is not untrue nor misleading to say that whatever is really new, is new in the eye of the patent law.

§ 53. Many things are new in the eye of the patent statutes, in addition to those things which are really new. The word has therefore a broader signification in those statutes than it has in the dictionaries; but that broader meaning is not capable of a short definition. Novelty is the conventional name of the statutory newness, but that name does not indicate the boundaries of the thing which it denotes. Those boundaries can be delineated only by enumerating and explaining those classes of facts which fall within them, but which fall without the boundaries of actual newness; those classes of facts which negative newness, but which do not negative novelty.

§ 54. Novelty is not negatived by prior knowledge and prior use in a foreign country of the thing patented, provided the patentee, at the time of making his application for a United States patent, believed himself to be the first inventor of the thing covered thereby, and provided that thing had nowhere been patented to another, and nowhere been described in a printed publication.¹

Knowledge in the mind of a man who lives in this country, that the patented thing was known and used in a foreign country before its invention here, is not such knowledge in this country as will negative the novelty of the patent covering that thing.²

§ 55. Novelty is not negatived by any United States patent which was issued after the contested invention was made, though applied for before that event,³ nor by any prior private patent granted in any foreign country,⁴ nor

¹ Revised Statutes, Sections 4887 and 4923.

² *Doyle v. Spalding*, 19 Fed. Rep. 746, 1884.

³ *American Roll Paper Co. v. Weston*, 45 Fed. Rep. 689, 1891.

⁴ *Brooks v. Noycross*, 2 Fisher, 661, 1851.

by any public patent granted in England, unless the latter was sealed before the person obtaining the American patent made the invention.¹ In neither of those three cases can it be truly said that the invention was antecedently patented, and therefore such transactions do not come within the statute; but the application in the first case may negative novelty. And also, it is safe to say that novelty would be negatived by a full description in the specification of a prior public patent of the thing covered by an American patent, even though that thing was not covered by the claims of the prior patent, and therefore not patented to the prior inventor.² This doctrine must result from the fact that whatever is well described in a patent is patented, that is, made patent to the public, whether it is claimed by the patentee or not. Indeed the Supreme Court has decided that novelty is negatived by a prior patent which shows the device in its drawings and describes it in the specification, but does not clearly state its use.³

§ 56. A printed publication is anything which is printed, and, without any injunction of secrecy, is distributed to any part of the public in any country; and such a publication may negative novelty.⁴ Indeed, it seems reasonable that no actual distribution need occur, but that exposure of printed matter for sale is enough to constitute a printed publication. But the mere existence of a printed thing is not a printed publication.⁵ Whether a drawing, either in a patent or printed publication, if unaccompanied by description in words, will negative novelty in a machine or manufacture, is an unsettled question.⁶

¹ *Siemens v. Sellers*, 123 U. S. 283, 1887; *Bliss v. Merrill*, 33 Fed. Rep. 40, 1887; *Electrical Accumulator Co. v. Julien Electric Co.* 38 Fed. Rep. 141, 1889; *American Roll-Paper Co. v. Weston*, 45 Fed. Rep. 691, 1891.

² *United States Bung Mfg. Co. v. Independent Bung Co.* 31 Fed. Rep. 79, 1887; *Saunders v. Allen*, 60 Fed.

Rep. 613, 1894.

³ *Stow v. Chicago*, 104 U. S. 547, 1881.

⁴ *Rosenwasser v. Spieth*, 129 U. S. 47, 1889.

⁵ *Britton v. White Mfg. Co.* 61 Fed. Rep. 95, 1894.

⁶ *Judson v. Cope*, 1 Fisher, 619, 1860; *Reeves v. Bridge Co.* 5 Fisher, 456, 1872.

Its answer depends upon the meaning of the word "described" in the statute. If that meaning is confined to the last definition of Webster, then only description in words can negative novelty; but if it covers also the first definition of Webster, then representation by lines, as in a drawing, must have that effect. Inasmuch as drawings can generally give information which is as clear as that which words alone can give, relevant to the construction and character of a machine or manufacture, there seems to be no meritorious reason for their not having the same effect on the novelty of subsequent patents. No injustice can result from such a rule, because in order to have any effect on such novelty, drawings as well as words must be able to endure the test stated in the next section. And it is undoubtedly true, that lack of description in words does not avert negation of novelty in a design, where that design is shown in the drawing of a prior patent or printed publication.¹

§ 57. Novelty is not negatived by any prior patent or printed publication, unless the information contained therein, is full enough and precise enough to enable any person skilled in the art to which it relates, to perform the process or make the thing covered by the patent sought to be anticipated.² But a difference, which consists of a mere omission of something which a skilful mechanic would supply, is not fatal to anticipation.³ The phrase "skilful mechanic," as used in this connection, does not include mechanics who are skilful only in methods of servile imitation. It refers only to mechanics who know how to vary form without varying substance, and who, in constructing a machine from a printed description, or from Patent Office drawings, could readily and would freely alter proportions

¹ Britton v. White Mfg. Co. 61 Fed. Rep. 96, 1894.

² Seymour v. Osborne, 11 Wallace, 516, 1870; Cawood Patent, 94 U. S. 704, 1876; Downton v. Milling Co. 108 U. S. 466, 1882; Eames v. Andrews, 122, U. S. 66, 1886; Roberts

v. Dickey, 4 Fisher, 532, 1871; Cahill v. Brown, 3 Bann. & Ard. 580, 1878; Hammerschlag v. Scamoni, 7 Fed. Rep. 584, 1881.

³ Chase v. Fillebrown, 58 Fed. Rep. 378, 1893.

and change details in order to adapt the contrivance to a particular use, or in order to secure greater merit of workmanship for the thing constructed.

And where the claim is for an article of manufacture, it may be anticipated by a prior patent or printed publication, which describes the article, without describing any process of making it, provided a knowledge of the article would teach a skilful mechanic some process of making it.¹

§ 58. Novelty is not negatived by any prior abandoned application for a patent.² Abandoned applications for patents are not by the statutes made bars to patents to later applicants. They furnish no evidence that any specimen of the things they describe was ever made or used anywhere. Being only pen and ink representations of what may have existed only as mental conceptions of the men who put them upon paper, they do not prove that the things which they depict were ever known in any country. Nor can they be classed among printed publications, for they are usually in writing, and are not published otherwise than by being placed on file in the Patent Office. Any person may procure a certified copy of an abandoned application,³ and publish it, but such a publication will operate as of its own date, and not as of the date of the application.

§ 59. When there is evidence that he who made and abandoned an application for a patent, made also some effort to carry his invention into practical use, then that application is admissible in evidence to aid the court to determine the date and the nature of the invention which was sought to be embodied in a working form. If, however, upon the whole of the evidence, it appears that what the inventor did, outside of his abandoned application, did not amount to enough to negative the novelty of a subsequent

¹ In re Schaeffer, 66 Off. Gaz. 514, 1893.

² Corn-planter Patent, 23 Wallace, 211, 1874; N. W. Extinguisher Co. v. Phila. Extinguisher Co. 1

Bann. & Ard. 177, 1874; Lyman Ventilating & Refrigerator Co. v. Lalor, 1 Bann. & Ard. 403, 1874.

³ United States v. Hall, 7 Mackey 14, 1888.

patent to a later inventor, then that abandoned application becomes immaterial to that issue.¹

§ 60. Novelty is not negatived by any successful application for a patent, nor by any documents pertaining thereto, other than the letters patent issued in pursuance thereof.² When such an application, or such a document, is offered to prove the existence of something which is not shown by the letters patent themselves, the justice and propriety of this rule is apparent at a glance. The rule necessarily follows from the same considerations as those which reject an abandoned application, when an abandoned application is offered to negative novelty. But where a successful application is offered only to prove the date of the invention claimed in the resulting patent, an exception to the rule has been established.²

§ 61. Novelty is not negatived by any prior unpublished drawings, no matter how completely they may exhibit the patented invention,⁴ nor by any prior model, no matter how fully it may coincide with the thing covered by the patent.⁵ 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 and improvements thereof, that they shall not have been previously known or used by others in this country.⁶ Now, it is clear that to use

¹ Corn-planter Patent, 23 Wallace, 211, 1874.

² Howes v. McNeal, 5 Bann. & Ard. 77, 1880.

³ Westinghouse v. Gas Co. 48 Fed. Rep. 588, 1890; Barnes Co. v. Walworth Co. 51 Fed. Rep. 88, 1892; 60 Fed. Rep. 606, 1894.

⁴ Ellithorp v. Robertson, 4 Blatch. 309, 1859; Draper v. Potomska Mills, 3 Bann. & Ard. 214, 1878; Detroit Lubricator Mfg. Co. v. Renchard, 9 Fed. Rep. 293, 1881; Odell v. Stout,

22 Fed. Rep. 159, 1884; Pennsylvania Diamond Drill Co. v. Simpson, 29 Fed. Rep. 291, 1886.

⁵ Cahoon v. Ring, 1 Cliff, 593, 1861; Stainthorp v. Humiston, 4 Fisher, 107, 1864; Johnson v. McCullough, 4 Fisher, 170, 1870; Stillwell & Bierce Mfg. Co. v. The Cincinnati Gas Light & Coke Co. 1 Bann. & Ard. 610, 1875; Bowers v. Von Schmidt, 63 Fed. Rep. 577, 1894.

⁶ Revised Statutes, Section 4886.

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.

§ 62. Novelty is not negatived by anything not substantially identical with the subject of the patent, even though the function of the prior thing was identical with that of the patented article. This rule necessarily follows from the doctrine that a valid patent may be granted for a new means of producing an old result.¹ And substantial identity is also consistent with substantial difference, for novelty is negatived by a prior process or mechanism which included the subject of the patent, and also some other process or device. But if a patented thing possesses distinct and apparently important characteristics not possessed by any alleged anticipation, the defense for want of novelty will fail. But a thing which will not defeat a patent for want of novelty may defeat it for want of invention.² It will do so wherever the observed difference corresponds in character with either

¹ O'Reilly v. Morse, 15 Howard, 62, 1853.

² Untermeyer v. Freund, 58 Fed. Rep. 209, 1893.

of those differences between a patented thing and the prior art, which in the second chapter of this book were shown to be insufficient to constitute invention.

§ 63. The rule of the last section will probably govern every case which justly comes within the doctrine that novelty is not negatived by any unsuccessful abandoned experiment. That rule is far more reliable than that doctrine, because the latter is subject to such qualifications and explanations that its practical utility in deciding cases is but small. A thing may have been abandoned and still negative the novelty of a thing independently invented long after that abandonment.¹ Such will be the result if the earlier thing was identical with the later, and was used long enough to show that it would work.²

If a given experimental device was unsuccessful in the hands of its contriver, that fact must have been due either to one or more faults of principle, or to one or more faults of construction, or to one or more faults of each of these kinds. If partly or wholly due to any fault of principle, that very fact shows that the unsuccessful device was substantially different from subsequent successful patented things. For that reason alone it would have failed to negative the novelty of those things, even if it had not been unsuccessful. If, on the other hand, a prior device was unsuccessful merely because its construction was weak, it is far from certain that it will not be held to negative the novelty of subsequent devices identical with it in plan, mode of operation, and function.³

The truth, therefore, appears to be that an unsuccessful abandoned experiment may possibly negative the novelty

¹ *Waterman v. Thomson*, 2 Fisher, 463, 1863; *Shoup v. Henriel*, 2 Bann. & Ard. 249, 1876; *N. W. Extinguisher Co. v. Phila. Extinguisher Co.* 1 Bann. & Ard. 177, 1874; *McNish, v. Everson*, 5 Bann. & Ard. 484, 1880.

² *Gayler v. Wilder*, 10 Howard, 477, 1850; *Sayles v. Railway Co.* 4

Fisher, 588, 1871; *Stephenson v. Railroad Co.* 14 Fed. Rep. 459, 1881; *Electrical Accumulator Co. v. Julien Electric Co.* 33 Fed. Rep. 131, 1889; *American Roll Paper Co. v. Weston*, 51 Fed. Rep. 240, 1892.

³ *Pickering v. McCullough*, 104 U. S. 319, 1881.

of a later invention, and that where it fails to have that effect, it would have failed, even if it had been neither unsuccessful nor abandoned. Novelty is to be ascribed to new things, regardless of whether old and different things were successful or unsuccessful, abandoned or not abandoned. Novelty is to be denied to old things, regardless of the accidents which caused earlier specimens of the same things to fail to operate, or caused their use to be discontinued.

§ 64. The question of the novelty of a design, is to be determined by the comparative appearance of that design and of prior designs, in the eyes of average observers, and not by their comparative appearance in the eyes of experts making an analytical inspection.¹ Nor is the novelty of any design negatived by the fact that all of its features can be collected out of scattered prior designs.²

§ 65. Novelty is not negatived by anything fundamentally incapable of the function of the thing covered by the patent, even though the character of the prior thing was chemically identical with the patented thing, or mechanically similar thereto.

In *Morey v. Lockwood*³ the prior Mau syringe was relied upon to negative the novelty of the syringe of Dr. Davidson and his brother. The latter is the now well-known soft rubber bulb apparatus. The former was exactly like it, except that the central part was a soft rubber cylinder with metallic heads, instead of a soft rubber bulb. The mode of operation of the two syringes was identical. The Mau apparatus proved to be of no practical value, simply because the metallic heads of the cylinder strongly counteracted the

¹ *Perry v. Starrett*, 3 Bann. & Ard. 489, 1878; *Foster v. Crossin*, 23 Fed. Rep. 402, 1885; *Kraus v. Fitzpatrick*, 34 Fed. Rep. 39, 1888; *Redway v. Ohio Stove Co.* 38 Fed. Rep. 583, 1889; *Paine v. Snowden*, 46 Fed. Rep. 189, 1891; *Anderson v. Saint*, 46 Fed. Rep. 763, 1891.

² *Simpson v. Davis*, 12 Fed. Rep. 144, 1882; *Stearns v. Beard*, 46 Fed. Rep. 193, 1891; *New York Belting Co. v. New Jersey Car Spring Co.* 48 Fed. Rep. 557, 1891.

³ *Morey v. Lockwood*, 8 Wallace, 280, 1868.

user's efforts to compress its rubber walls. Feeble persons could not use it, and those who had enough muscular power did not care to perform the needed labor. Practically, therefore, the Mau syringe proved to be of no value, and very few were ever sold. For these reasons the Supreme Court held that it did not negative the novelty of the Davidson patent.

The *Wood Finishing Co. v. Hooper*¹ is a case the patent involved in which, covered the employment of finely powdered flint, quartz, or feldspar, mixed with oil or other fluent substance, for the purpose of filling the pores of the surface of wood. A prior patent had been granted for the employment of silicious marl or infusorial earth for the same purpose. It was shown that all five of these substances consisted mainly of silica or the oxide of silicon, but that the first three differed from the last two in being non-absorbent instead of porous, and in consisting of angular instead of rounded particles. These two differences made the first three substances very valuable for wood-filling, whereas the others were not valuable for that purpose. Judge NATHANIEL SHIPMAN, therefore, decided that the prior patent did not negative the novelty of the later one.

§ 66. Novelty is not negatived by the fact that every part of the patented thing is old.² This rule necessarily follows from the doctrine which allows patents for new combinations of old devices. In such cases the whole is different from the sum of all its parts, precisely as this printed page is different from what it would be, if the same words were arranged in alphabetical order, or were printed promiscuously upon the paper. If, however, a new assemblage of old things amounts only to aggregation and not to combina-

¹ *Bridgeport Wood Finishing Co. v. Hooper*, 5 Fed. Rep. 63, 1880.

² *Bates v. Coe*, 98 U. S. 48, 1878; *Imhaeuser v. Buerk*, 101 U. S. 660, 1879; *Parks v. Booth*, 102 U. S. 104,

1880; *Cantrell v. Wallck*, 117 U. S. 694, 1885; *Johnson v. Railroad Co.* 33 Fed. Rep. 501, 1888; *Consolidated Roller Mill Co. v. Coombs*, 39 Fed. Rep. 32, 1889.

tion,¹ or if it results in no new mode of operation,² the patent which covers it will be void for want of invention, though not void for want of novelty.

§ 67. Novelty is not negatived by any prior accidental production of the same thing, unaccompanied by knowledge on the part of the producer sufficient to enable him to repeat that production.³ The reason of this rule arises out of that point of patent law policy, which rewards persons for teaching the public how to perform processes and construct things which nobody else in the United States knew how to perform or to construct, and relevant to which no adequate information could be found in any public patent or printed publication anywhere in the world. But novelty is negatived by proof of prior use, where that use was understood in point of method, though not correctly understood in point of result.⁴

§ 68. Novelty is not negatived by anything which was neither designed, nor apparently adapted, nor actually used, to perform the function of the thing covered by the patent, though it might have been made to perform that function by means not substantially different from that of the patented invention;⁵ but this rule cannot govern any case which lacks either of the circumstances upon which it is founded,

¹ *Adams v. Stamping Co.* 141 U. S. 542, 1891; *Campbell v. Bailey*, 45 Fed. Rep. 565, 1891.

² *Burt v. Ivory*, 133 U. S. 349, 1890; *Florsheim v. Schilling*, 137 U. S. 77, 1890.

³ *Tilghman v. Proctor*, 102 U. S. 711, 1880; *Ransom v. New York*, 1 Fisher, 256, 1856; *Pelton v. Waters*, 1 Bann. & Ard. 399, 1874; *Andrews v. Carman*, 2 Bann. & Ard. 277, 1876; *Pittsburgh Reduction Co. v. Cowles Electric Co.* 55 Fed. Rep. 307, 1893; *Chase v. Fillebrown*, 58 Fed. Rep. 377, 1893.

⁴ *Dorlon v. Guie*, 25 Fed. Rep. 816, 1885; *Schultz Belting Co. v. Belt-*

ing Co. 40 Fed. Rep. 156, 1889.

⁵ *Topliff v. Topliff*, 145 U. S. 161, 1892; *Heaton-Peninsular Button-Fastener Co. v. Elliott Button-Fastener Co.* 58 Fed. Rep. 222, 1892; *Westinghouse v. Brake Co.* 59 Fed. Rep. 590, 1893; *Beach v. Box Machine Co.* 63 Fed. Rep. 601, 1894; *Campbell Printing Press Co. v. Marden*, 64 Fed. Rep. 784, 1894; *New Departure Bell Co. v. Mfg. Co.* 64 Fed. Rep. 863, 1894; *Knickerbocker Co. v. Rogers*, 61 Fed. Rep. 297, 1894; *Clinton Wire Cloth Co. v. Wire Cloth Co.* 65 Fed. Rep. 427, 1894.

for negation of novelty is not averted by the mere fact that the inventor of the prior device did not design it to perform the function of the patented device,¹ nor by the mere fact that its ability to perform that function is not apparent to every beholder, nor by the mere fact that it was never actually used for that purpose, nor by any two of these facts combined.

§ 69. Novelty is not negatived by anything which was invented, patented, or described in a printed publication prior to the granting of the patent sought to be anticipated, or even prior to the application therefor, unless the anticipating event occurred prior to the date of the invention secured by that patent.²

One apparent exception to this rule has been stated in one leading case by the Supreme Court,³ and indorsed in another good precedent by Judge McKINNON.⁴ In those instances it was said that where two patents for the same invention are granted to the same inventor, the last, and not the first, is void, even where the last was first applied for. The exception is, however, only apparent, because the patent last applied for is as much entitled to date from the making of the invention as the other. The date of invention assignable to the two patents being exactly the same, the first patent will negative the novelty of the last, regardless of which was first applied for. The saying of the Supreme Court in this matter is not inconsistent with the rule that, in the absence of other evidence of the dates of invention, the first application must be taken to represent the first invention,⁵ because the fact of an identical inventor is evidence in such cases that the date of invention was iden-

¹ Leonard v. Lovell, 29 Fed. Rep. 315, 1886.

² Cochrane v. Deener, 94 U. S. 791, 1876; Elizabeth v. Pavement Co. 97 U. S. 130, 1877; Clark Thread Co. v. Willimantic Linen Co. 140 U. S. 486, 1891; Pacific Cable Ry. Co. v. Butte City Ry. Co. 58 Fed. Rep. 422,

1893.

³ Suffolk Co. v. Hayden, 3 Wallace, 315, 1865.

⁴ McMillin v. Rees, 5 Bann. & Ard. 269, 1880.

⁵ Pope Mfg. Co. v. Gormully Mfg. Co. 144 U. S. 244, 1892; Pennington v. King, 7 Fed. Rep. 462 1881.

tical. No man can make one invention at two different times.

And the saying in *Suffolk Co. v. Hayden* has no applicability to a case where an inventor takes out a patent which describes and claims what was described but not claimed in a prior patent of his, because in such a case the prior patent is not for the same invention as the last.¹

Where several patents are granted to one inventor on different inventions in the same art, the dates of their applications, instead of the dates of the patents themselves, in the absence of evidence of the dates of the making of the respective inventions, determine the relative rank of those patents in the art to which they belong.²

§ 70. In order to apply the rule of the last section, it is necessary to fix the date of the invention covered by the patent sought to be anticipated. In cases where the invention may be exhibited in a drawing or in a model, it will date from the completion of such a model or such a drawing as is sufficiently plain to enable those skilled in the art to understand the invention;³ and patented inventions always date at least as early as the dates of the execution of the original applications therefor, provided the original applications exhibit the inventions with the above-mentioned extent of sufficiency.⁴ In cases where a patented invention was explained in words, without the aid of any model or any drawing, it will date from the completion of such a written description as would teach others how to

¹ *Suffolk Co. v. Hayden*, 3 Wall. 315, 1865; *Singer v. Braunsdorf*, 7 Blatch. 521, 1870; *Wheeler v. McCormick*, 11 Blatch. 834, 1873; *Graham v. McCormick*, 5 Bann. & Ard. 244, 1880; *McMillan v. Rees*, 5 Bann. & Ard. 269, 1880; *Graham v. Mfg. Co.* 11 Fed. Rep. 138, 1880.

² *Barbed Wire Patent*, 143 U. S. 281, 1892.

³ *Loom Co. v. Higgins*, 105 U. S. 594, 1881; *Deering v. Harvester*

Works, 155 U. S. 298, 1894; *Heath v. Hildreth*, 1 McArthur's Patent Cases, 24, 1841; *Perry v. Cornell*, 1 McArthur's Patent Cases, 78, 1847; *Farley v. Steam Gauge Co.* 1 McArthur's Patent Cases, 621, 1859; *Hubel v. Dick*, 28 Fed. Rep. 139, 1886.

⁴ *Kearney v. Railroad Co.* 32 Fed. Rep. 322, 1887; *National Machine Co. v. Brown*, 36 Fed. Rep. 321, 1888.

make and use the invention described. In cases where the inventor makes a specimen of the thing invented before he makes any model, or drawing, or written description to represent that thing, the invention will date from the completion of that specimen. Perfection is not necessary to such a specimen in order to entitle it to such an effect. Substantial completeness is enough.¹

No invention ought to date from any day wherein it had no existence or representation outside of the mind of the inventor, no matter how clear or how complete his mental conception of its character and mode of operation may have been. Mental conceptions are not useful inventions until they are so embodied that the world could use them after the death of the persons who conceived them.² To allow inventions to take date from mental conceptions, would strongly tempt inventors to commit perjury in order to appear to anticipate real anticipations of their patents.

Whether an oral description given by the inventor to another, of a subsequently patented invention, can give that invention a date earlier than that to which it would otherwise be entitled, depends upon the nature of the invention and the capacity of the hearer to understand it and remember it. Where an invention is abstruse or is complicated, and where it is not certain that the hearer understood it and has remembered it well enough to communicate it to the world in case of the inventor's death, the invention ought not to date from such a description.³ But where it is shown that the person to whom such an oral description was given, understood it completely, and has remembered it accurately, a patented invention may date back to that

¹ National Cash Register Co. v. Store Service Co 60 Fed. Rep. 603, 1894; Coffee v. Guerrant, 68 Off. Gaz. 279, 1894.

² Clark Thread Co. v. Willimantic Linen Co. 140 U. S. 489, 1891.

³ Stephens v. Salisbury, 1 McArthur's Patent Cases 385, 1855.

oral description.¹ The reason for allowing a patented invention to date back to an oral or a written description, or to a drawing or a model, as the case may be, while an unpatented invention, which is set up to negative the novelty of a patented invention, is not allowed to date back to either of those things, resides in the fact that those things are incipient in their nature, and in the principle that an invention which is ultimately developed and given to the world in a patent, ought equitably to date from such an incipency, while the rights of a patentee ought not to be impaired by a similar incipency which was never developed into a patent.²

§ 71. Novelty is negatived by prior knowledge and use in this country, by even a single person, of the thing patented.³ This rule applies even to cases where that knowledge and use were purposely kept secret;⁴ and it applies no matter how limited that use may have been.⁵

In *Gayler v. Wilder*⁶ the Supreme Court announced an exception to this rule, but in a later case it intimated a denial, or at least a doubt, of the validity of that exception.⁷ According to the opinion of a majority of the court in the first case, a single instance of prior knowledge and use will not negative novelty, if that use had ceased when the patent was granted, and that knowledge was forgotten until called to mind by the reinvention. Justices McLEAN and DANIEL dissented from that conclusion; and Judge PUTNAM, who is

¹ *Philadelphia & Trenton R. R. v. Stimpson*, 14 Peters, 448, 1840; *Stephens v. Salisbury*, 1 McArthur's Patent Cases, 385, 1855; *Hill v. Dunklee*, 1 McArthur's Patent Cases, 483, 1857; *Davidson v. Lewis*, 1 McArthur's Patent Cases, 599, 1858; *McCormick Machine Co. v. Harvester Works*, 42 Fed. Rep. 153, 1890; *Merrow v. Shoemaker*, 59 Fed. Rep. 122, 1893.

² *Bowers v. Von Schmidt*, 63 Fed. Rep. 577, 1894.

³ *Coffin v. Ogden*, 18 Wallace, 120, 1873; *Brush v. Condit*, 132 U. S. 39, 1889.

⁴ *Reed v. Cutter*, 1 Story, 598, 1841.

⁵ *Bedford v. Hunt*, 1 Mason, 301, 1817; *Rich v. Lippincott*, 2 Fisher, 2, 1853.

⁶ *Gayler v. Wilder*, 10 Howard, 477, 1850.

⁷ *Coffin v. Ogden*, 18 Wallace, 125, 1873.

the only judge treating of the point in recent times, finally felt unable to lay down any general rule on the subject.¹ For these reasons, it is apparent that the question whether a United States patent can be invalidated by proof that its subject is identical with some lost art, or forgotten thing, which was formerly known in the United States, is yet an unsettled question.

§ 72. Novelty is also negatived by evidence that even one specimen of the thing patented was made in this country prior to its invention by the patentee, even though it was not used prior to that time.² This rule results from the statute which provides that things, in order to be patentable, must not have been known or used by others in this country.³ If the prior article produced or proved, appears on inspection to have been identical with the patented thing, and if it is proved to have been made in this country before the date of the patented invention, it follows that it was known here prior to that time, and the novelty of the patent is necessarily negatived. If, however, the identity of the patented and the prior article can be known only by actual use, and if the prior article never was actually used till after the date of the patented invention, then its prior making will not negative novelty.⁴ In that case though its existence was known prior to the invention of the patented thing, it was not known to be what the patented thing afterward was: Knowledge in order to negative novelty must include knowledge of the character, as well as knowledge of the existence, of the prior thing.

§ 73. Negation of novelty is not averted by the fact that the inventor had no knowledge of the anticipating matter

¹ *Converse v. Matthews*, 58 Fed. Rep. 249, 1893; *Dalby v. Lynes*, 64, Fed. Rep. 379, 1894.

² *Corn-planter Patent*, 23 Wallace, 220, 1874; *Parker v. Ferguson*, 1 Blatch. 408, 1849; *Pitts v. Wemple*,

² *Fisher*, 15, 1855; *Stitt v. Railroad Co.* 22 Fed. Rep. 650, 1884.

³ Revised Statutes, Section 4886.

⁴ *Sayles v. Railway Co.* 4 *Fisher*, 588, 1871; *Stitt v. Railroad Co.* 22 Fed. Rep. 650, 1884.

when he made the invention covered by the patent.¹ The patent laws do not reward people for producing things which, though new to them, are old to others in this country.

§ 74. Nor is negation of novelty averted by the fact that the anticipating substance was made by a different process, or derived from a different source from that which produced the patented substance, for it does not make an old thing new to derive it from a new and unexpected quarter² or to make it by a new and improved method.³

§ 75. Questions of novelty are questions of fact.⁴ This point is very obvious, except in cases where the prior thing is a patent or printed publication. In those cases it may be supposed that questions of novelty are questions of law arising on the construction of documents. The point has, however, been settled by the Supreme Court, in a case involving the consideration of a prior patent, and bearing with equal logical force upon a prior printed publication.⁵ In that case it was held that the question whether the novelty of a patent is negatived by a prior patent, depends not upon the construction of the latter, but depends rather upon the outward embodiment of the terms contained in the latter document; and that such outward embodiment is to be properly sought, like the explanation of latent ambiguities arising from the description of external things, by evidence *in pais*. The court accordingly indorsed the proposition that such questions belong to the province of evidence, and not to that of construction; and said that even where no testimony is required to explain the terms of art or the description contained in the respective documents, the question is still to be treated as a question of fact.

¹ *Derby v. Thomson*, 146 U. S. 481, 1892; *Many v. Sizer*, 1 Fisher, 19, 1849.

² *Cochrane v. Badische Anilin & Soda Fabrik*, 111 U. S. 311, 1883; *Badische Anilin & Soda Fabrik v. Cummins*, 4 Bann. & Ard. 490, 1879.

³ *Cottle v. Krementz*, 31 Fed. Rep. 42, 1887.

⁴ *Battin v. Taggert*, 17 Howard, 74, 1854; *Turrill v. Railroad Co.* 1 Wallace, 491, 1863.

⁵ *Bischoff v. Withered*, 9 Wallace, 812, 1869.

§ 76. The burden of proof of a want of novelty rests upon him who avers it, and every reasonable doubt should be resolved against him.¹ Novelty can only be negatived by proof which puts the fact beyond a reasonable doubt.² But such proof can be made with less evidence, where anticipation is probable, than where it is less to be expected.³ And testimony of want of novelty is not overthrown, by innocent errors on collateral points;⁴ or even by impeaching a principal witness, if his testimony is shown to be true by other evidence, which his bad character could not vitiate.⁵ The unsupported oral testimony of one witness is not strong enough to negative the novelty of a patent beyond a reasonable doubt;⁶ and the oral testimony of many witnesses, if unsupported by any evidence consisting of documents or things, must be very reasonable and very strong, in order to

¹ *Coffin v. Ogden*, 18 Wallace, 120, 1873; *Cantrell v. Wallick*, 117 U. S. 696, 1885; *Parham v. Machine Co.* 4 Fisher, 482, 1871; *Webster Loom Co. v. Higgins*, 4 Bann. & Ard. 88, 1879; *Shirley v. Sanderson*, 8 Fed. Rep. 908, 1881; *Green v. French*, 11 Fed. Rep. 591, 1882; *Duffy v. Reynolds*, 24 Fed. Rep. 858, 1885; *Dreyfus v. Schneider*, 25 Fed. Rep. 481, 1885; *Osborne v. Glazier*, 31 Fed. Rep. 404, 1887; *Smith v. Davis*, 34 Fed. Rep. 785, 1888; *Howard v. Plow Works*, 35 Fed. Rep. 745, 1888; *Pacific Cable Ry. Co. v. Butte City Ry. Co.* 55 Fed. Rep. 764, 1893.

² *Barbed Wire Patent*, 143 U. S. 284, 1892; *Wood v. Mill Co.* 4 Fisher, 560, 1871; *Hawes v. Antisdel*, 2 Bann. & Ard. 10, 1875; *Big-nall v. Harvey*, 5 Bann. & Ard. 638, 1880; *Worswick Mfg. Co. v. Buffalo*, 20 Fed. Rep. 126, 1884; *Thayer v. Hart*, 20 Fed. Rep. 694, 1884; *Everest v. Oil Co.* 20 Fed. Rep. 849,

1884; *American Bell Telephone Co. v. People's Telephone Co.* 23 Fed. Rep. 313, 1884; *McDonald v. Whitney*, 24 Fed. Rep. 600, 1885; *Jennings v. Kibbe*, 24 Fed. Rep. 698, 1885; *Wetherell v. Keith*, 27 Fed. Rep. 364, 1886; *Hobbie v. Smith*, 27 Fed. Rep. 659, 1886; *Cohansey Mfg. Co. v. Wharton*, 28 Fed. Rep. 191, 1886; *American Bell Telephone Co. v. Globe Telephone Co.* 31 Fed. Rep. 733, 1887; *Hunt Bros. Packing Co. v. Cassidy*, 53 Fed. Rep. 260, 1893.

³ *Lee v. Upson & Hart Co.* 43 Fed. Rep. 670, 1890; *Rochester Coach Lace Co. v. Schaefer*, 46 Fed. Rep. 190, 1891.

⁴ *Simmonds v. Morrison*, 44 Fed. Rep. 762, 1891.

⁵ *Olin v. Timken*, 155 U. S. 152, 1894; *Timken v. Olin*, 37 Fed. Rep. 207, 1888.

⁶ *Bowman v. DeGraw*, 60 Fed. Rep. 911, 1894.

negative novelty;¹ and patents are seldom overthrown on the mere recollection of witnesses.² This rule of reasonable doubt applies where the question of novelty depends upon the identity of the patented thing or process with the alleged anticipation; as well as where that question depends upon the existence or the priority of the latter.³

Where an anticipating fact prior to the date of a patent is proved beyond reasonable doubt, the burden is shifted to the plaintiff to prove, by convincing preponderance of evidence, that his invention was made still earlier than that fact occurred; and if the plaintiff does not introduce enough evidence to strongly outweigh whatever evidence is introduced to the contrary, the patent must be held to be void for want of novelty.⁴

¹ Barbed Wire Patent, 143 U. S. 284, 1892; *Deering v. Harvester Works*, 155 U. S. 300, 1894; *American Roll Paper Co. v. Weston*, 59 Fed. Rep. 150, 1893; *Knickerbocker Co. v. Rogers*, 61 Fed. Rep. 297, 1894; *Pratt v. Sencenbaugh*, 64 Fed. Rep. 781, 1893; *Campbell Printing Press Co. v. Marden*, 64 Fed. Rep. 785, 1894; *Wickes v. Lockwood*, 65 Fed. Rep. 611, 1895; *Singer Mfg Co. v. Schenck*, 68 Fed. Rep. 194, 1895.

² *Carter v. Wollschlaeger*, 53 Fed. Rep. 575, 1892.

³ *Pittsburgh Reduction Co. v. Aluminum Co.* 55 Fed. Rep. 308, 1892.

⁴ *Clark Thread Co. v. Willimantic Linen Co.* 140 U. S. 492, 1891; *Caverly v. Deere*, 52 Fed. Rep. 760, 1892; *Curtis v. Atlanta Street Railway Co.* 56 Fed. Rep. 600, 1892; *Simmons v. Standard Oil Co.* 62 Fed. Rep. 930, 1894; *Ecaubert v. Appleton*, 67 Fed. Rep. 925, 1895.

CHAPTER IV.

UTILITY.

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| 77. Utility necessary to patentability. | 82. Functions which sometimes work evil, and sometimes work good. |
| 78. Utility is negatived by lack of function. | 83. Functions thought by some to be good, and by others to be bad. |
| 79. Perfection not necessary to utility. | 84. Good functions in wrong places. |
| 80. Beauty has utility. | 85. Doubts relevant to utility to be solved against infringers. |
| 81. Utility is negatived where function is evil. | |

§ 77. THE useful arts are those that Congress is authorized by the Constitution to promote, and accordingly the statute includes utility among the qualities which a process or a thing must have in order to be patentable.¹ To possess utility, a thing or a process must be capable of producing a result, and that result must be a good result. Both these elements inhere in the meaning of the word; and they are so distinct as to require separate explanation.

§ 78. Utility is absent from all processes and devices which cannot be used to perform their specified functions, and patents for such subjects are therefore void.² This rule applies even to cases in which, by simply adding new elements to useless contrivances, highly useful inventions are produced.

In *Burrall v. Jewett*,³ the patent covered the cylinder of a threshing-machine, having rows of teeth inserted in its convex surface and revolving within a barrel which had no teeth. The contrivance was confessedly useless. After the

¹ Revised Statutes, Section 4886.

Wisconsin, 465, 1864.

² *Coupe v. Royer*, 155 U. S. 574, 1895; *Bliss v. Brooklyn*, 10 Blatch. 522, 1873; *Rowe v. Blanchard*, 18

³ *Burrall v. Jewett*. 2 Paige, 143, 1830.

patent for it was granted, the patentee, or some other person, by simply inserting rows of teeth in the concave surface of the barrel, produced the successful threshing-machine, which has everywhere succeeded the ancient flail. The law applicable to these facts was stated by Chancellor WALWORTH in the following terms: "The patent is void if the machine will not answer the purpose for which it was intended, without some addition, adjustment, or alteration, which the mechanic who is to construct it must introduce of his own invention, and which had not been invented or discovered by the patentee at the time his patent was issued."

In *Bliss v. Brooklyn* the patent covered a certain hose-coupling. The contrivance was worthless, because it proved on trial to be inoperative. The subsequent addition of a lug to one of its parts, transferred the coupling into a useful invention. Judge BENEDICT nevertheless held the patent to be invalid for want of utility.

§ 79. If, however, a device performs a good function, though but imperfectly, the utility of that device is not negatived by the fact that it is susceptible of improvement, which will make it operate much better,¹ nor by the fact that some prior invention performed the same function quite as well,² or even performed it with superior excellence.³ Nor is utility negatived by later inventions which are so much superior to the patented process or thing, that they entirely superseded the use of the latter.⁴ Indeed, patents are never held to be void for want of utility, merely because the things covered by them perform their functions but poorly.⁵ In such cases no harm results to the public

¹ *Wheeler v. Reaper Co.* 10 Blatch. 189, 1872; *Mergenthaler Co. v. Press Pub. Co.* 57 Fed. Rep. 505, 1893.

² *Seymour v. Osborne*, 11 Wallace, 516, 1870; *Shaw v. Lead Co.* 11 Fed. Rep. 715, 1882.

³ *Bell v. Daniels*, 1 Fisher, 375,

1858.

⁴ *Railway Co. v. Sayles*, 97 U. S. 559, 1878; *Poppenhusen v. Comb Co.* 2 Fisher, 72, 1858; *McComb v. Ernest*, 1 Woods, 203, 1871.

⁵ *Vance v. Campbell*, 1 Fisher, 485, 1859; *Conover v. Roach*, 4 Fisher, 16, 1857.

from the exclusive right, because few will use the invention, and because those who do use it without permission, will seldom or never be obliged to pay for that use, anything beyond the small benefit they may really have realized therefrom.¹

§ 80 Utility is not negatived by the fact that the manufacture covered by the patent has no function except to decorate the object to which it is designed to be attached.² In such case utility resides in beauty. Whatever is beautiful is useful, because beauty gives pleasure, and pleasure is a kind of happiness, and happiness is the ultimate object of the use of all things.

§ 81. Utility is negatived if the function performed by an invention is injurious to the morals, the health, or the good order of society.³ An invention to improve the art of forgery, or one to facilitate the spread of a contagious disease, or one to render air or water intoxicating, would of course be unpatentable for want of utility. The more completely such an invention could perform its function, the more objectionable it would be in this respect. But utility is not negatived by the fact that the article covered by a patent is an imitation of a natural substance.⁴

§ 82. An important question relevant to utility in this aspect, may hereafter arise and call for judicial decision. It is perhaps true, for example, that the invention of Colt's revolver was injurious to the morals, and injurious to the health, and injurious to the good order of society. That instrument of death may have been injurious to morals, in tending to tempt and to promote the gratification of private revenge. It may have been injurious to health, in that it is very liable to accidental discharge, and to thereby cause wounds, and even homicide. It may also have been

¹ *Gibbs v. Hoefner*, 19 Fed. Rep. 324, 1884. 1817; *National Device Co. v. Lloyd*, 40 Fed. Rep. 89, 1889.

² *Magic Ruffle Co. v. Douglas*, 2 Fisher, 380, 1868.

⁴ *In re Corbin and Martlett*, 1 McArthur's Patent Cases, 521, 1857.

³ *Bedford v. Hunt*, 1 Mason, 301,

injurious to good order, especially in the newer parts of the country, because it facilitates and increases private warfare among frontiersmen. On the other hand, the revolver, by furnishing a ready means of self-defense, may sometimes have prompted morals and health and good order. By what test, therefore, is utility to be determined in such cases? Is it to be done by balancing the good functions with the evil functions? Or is everything useful within the meaning of the law, if it is used to accomplish a good result, though in fact it is oftener used to accomplish a bad one? Or is utility negatived by the mere fact that the thing in question is sometimes injurious to morals, or to health, or to good order? The third hypothesis cannot stand, because if it could, it would be fatal to patents for steam-engines, dynamos, electric railroads, and indeed many of the noblest inventions of the nineteenth century. The first hypothesis cannot stand, because if it could it would make the validity of the patents to depend on a question of fact, to which it would often be impossible to give a reliable answer. The second hypothesis is the only one which is consistent with the reason of the case, and with the practical construction which the courts have given to the statutory requirement of utility.

§ 83. Another question relevant to utility of function will sooner or later demand the attention of counsel and of courts. A particular invention may invariably perform one specific function, which function is deemed good in some quarters, and in other quarters is thought to be bad. The function performed by a newly invented smoking-pipe, if it increased the prevalence of smoking, would be thought by many persons to be only evil, and that continually: would be deemed by many moralists to be injurious to the morals, and by many physicians to be injurious to the health of society. James I. would doubtless have refused a patent for such an invention, unless by granting one he could have diminished its use. On the other hand, there are many persons who would regard such an invention as truly useful. Federal judges would be found among both parties,

and an entire difference of personal opinion on the point might perhaps exist among the justices of the Supreme Court themselves. Personal opinion cannot, therefore, control the decision of such a question, for if it could there would be no stability to the jurisprudence of the subject. Nor ought former custom to be the criterion, for if it were, each age would be hampered by a prior and lower civilization. Science may hereafter demonstrate the uniform hurtfulness of smoking, and when it does, the courts can hardly adjudge it to be useful on the ground that millions of men formerly smoked. It seems, therefore, that in such cases of divided personal opinion relevant to the utility of a particular result, the only criterion of decision is the average public sentiment of the time when the question arises.¹ Accordingly, the courts at present uphold patents which relate to tobacco, and will probably always sustain the utility of inventions which perform functions that average public sentiment is willing to have performed.

§ 84. Utility is negatived by the fact that the patented process or thing is injurious to the thing to which it is applicable,² and also by the fact that the function performed by the patented part of a machine, though good in itself, is injurious to the utility of the machine as a whole.³ The first of these points is well illustrated by the first case cited in this section: a case based on a patent for a process of treating leather to an application of fat liquor. The second point is equally well illustrated by the second case: a case based on a patent for a locomotive spark arrester. To arrest sparks is in itself a good thing to do, but where it must be done in such a way as to stop or seriously retard the locomotive, it is not desirable to attempt it. Therefore a device which would arrest sparks, but only at the expense of retarding the locomotive from the smoke-pipe of which they issued, was rightly held to be wanting in utility.

¹ Pope Mfg. Co. v. Gormully, 144 433, 1873.
U. S. 233, 1892.

³ Wilton v. Railroad Co. 1 Bright-
ley's Federal Digest, 618, 1849.

² Klein v. Russell, 19 Wallace,

§ 85 A patent is *prima facie* evidence of utility,¹ and doubts relevant to the question should be resolved against infringers,² because it is improbable that men will render themselves liable to actions for infringement, unless infringement is useful.³

¹ Vance v. Campbell, 1 Fisher, 488, 1859.

² Western Electric Co. v. LaRue, 139 U. S. 608, 1891; Whitney v. Mowry, 4 Fisher, 215, 1870.

³ Lohnbeuter v. Holthaus, 105 U. S. 94, 1881; Gandy v. Belting Co. 143 U. S. 595, 1892; La Rue v. Electric Co. 81 Fed. Rep. 82, 1887.

CHAPTER V.

ABANDONMENT.

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| 86. The several sorts of abandonment. | 98. Degree of identity necessarily involved between the thing constructively abandoned and the thing patented. |
| 87. Abandonment of inventions. | 99. Making, works no constructive abandonment. |
| 88. Actual abandonment of inventions. | 100. Public knowledge, works no constructive abandonment. |
| 89. Actual abandonment by express declaration. | 101. Public use or sale in a foreign country. |
| 90. Actual abandonment by formal disclaimer. | 103. Constructive abandonment after application, and before issue of letters patent. |
| 91. Actual abandonment resulting from laches before application. | 104. Rules of constructive abandonment are inflexible. |
| 92. Actual abandonment resulting from laches after application and before issue of letters patent. | 105. Surrender of letters patent. |
| 93. Constructive abandonment before application. | 106. Abandonment of invention after letters patent, unknown to the law. |
| 94. "Public use," defined and delineated. | 107. Acquiescence in unlicensed use of patented invention. |
| 95. Experimental use. | 108. Questions of abandonment are questions of fact. |
| 96. "On sale," delineated and defined. | |
| 97. Sale of inchoate right to a patent. | |

§ 86. AN inventor may abandon an unsuccessful endeavor to make an invention; or having made an invention, he may abandon it to the public; or having made an invention and having applied for a patent thereon, he may abandon that application without abandoning that invention. Transactions of the first sort are commonly called unsuccessful abandoned experiments. They confer no rights upon those who make them, and they affect no rights

of any other person.¹ Transactions of the third sort are treated in the chapter on applications; the sixth chapter of this book. Transactions of the second sort require treatment in respect that they are inventions; and also require separate treatment in respect that they are abandoned. Treatment of the first sort takes no account of the fact of abandonment, because abandoned inventions have the same effect on the rights of subsequent inventors that they would have if they had not been abandoned.² That subject, therefore, does not belong to this chapter. It is treated in the chapters on invention and letters patent, where the state of the art is a very important factor in the discussion; and also in the chapter on novelty, where anticipation is the point of inquiry. Treatment of the second sort indicated above is the special function and scope of this chapter. Abandoned inventions are here considered with regard to the effect abandonment of them has upon the rights of their inventors, and with regard to the rules by means of which abandonment is to be affirmed or denied in particular cases.

§ 87. Abandonment of an invention may be actual, or it may be constructive. It is actual when it is the result of intention. It is constructive when it is the result of some statute which operates regardless of the intention of the inventor. The two sorts require and will receive separate treatment in this chapter, but there are some points of fact and of law which apply equally to both. Either kind may occur before any application for a patent is made, or may occur after such an application, and before any letters patent are issued.³ So also, either actual or constructive abandonment of an invention, is fatal to the validity of any patent that may afterward be granted therefor. The inchoate right to a patent when once abandoned can never be

¹ *Deering v. Harvester Works*, 155 U. S. 302, 1894; *American Bell Telephone Co. v. Cushman Telephone Co.* 35 Fed. Rep. 734, 1888; *Brush Electric Co. v. Ft. Wayne Electric Co.* 44 Fed. Rep. 284, 1890;

Ecaubert v. Appleton, 67 Fed. Rep. 922, 1895.

² *Olds v. Brown*, 41 Fed. Rep. 703, 1890.

³ *Rifle & Cartridge Co. v. Arms Co.* 118 U. S. 24, 1885.

resumed; for where gifts are once made to the public, they become absolute and irrevocable.¹

§ 88. Actual abandonment of an invention occurs whenever there is an entire relinquishment of all expectation of securing a patent therefor, and an accompanying formation of an expectation that the invention will always be free to the public.² Such a relinquishment may be shown by direct, or by circumstantial evidence. It may be proved by things said or things done by the inventor, or it may be proved by his omission or delay to do what the law requires to be done in order to secure letters patent.

§ 89. An inventor abandons his invention to the public when he makes an express declaration to that effect.³ Justice CURTIS charged the jury, in *Kendall v. Winsor*, that abandonment might be shown by declarations or conduct, and the Supreme Court held that Justice CURTIS's instruction was in strict conformity with the true principle. The Supreme Court also said in that case: "It is the unquestionable right of every inventor, to confer gratuitously the benefits of his ingenuity upon the public, and this he may do by express declaration."

§ 90. So also an inventor will be held to abandon a particular invention, when he formally disclaims it in an application for a patent for some other invention;⁴ and where he cancels from an application, a claim for that invention, and substitutes no other claim for the same invention, before his patent is issued;⁵ and also when he formally disclaims a particular invention, or claim in a separate paper filed for that purpose. The Supreme Court decided in 1854,

¹ *Pennock v. Dialogue*, 2 Peters, 1, 1829; *Kendall v. Winsor*, 21 Howard, 328, 1858; *Consolidated Fruit Jar Co. v. Wright*, 94 U. S. 96, 1876; *Planing Machine Co. v. Keith*, 101 U. S. 484, 1879; *Consolidated Fruit Jar Co. v. Stamping Co.* 27 Fed. Rep. 377, 1886.

² *Babcock v. Degner*, 1 McArthur's Patent Cases, 616, 1859.

³ *Kendall v. Winsor*, 21 Howard, 328, 1858; *Rifle & Cartridge Co. v. Arms Co.* 118 U. S. 24, 1885.

⁴ *Leggett v. Avery*, 101 U. S. 259, 1879.

⁵ *Yale Lock Co. v. Berkshire Bank*, 135 U. S. 403, 1890; *Pittsburgh Reduction Co. v. Cowles Electric Co.* 55 Fed. Rep. 320, 1893.

that no abandonment results from the mere fact that the inventor described the invention in an application for a patent, without either claiming or disclaiming the same.¹ When the cited case was tried in the court below, the judge charged the jury "That a description, by the applicant for a patent, of a machine, or a part of a machine, in his specification, unaccompanied by a notice that he has rights in it as an inventor, or that he desires to secure title to it as a patentee, is a dedication of it to the public." But when the case reached the Supreme Court, that instruction was decided to be erroneous, and a new trial was therefore awarded. The paramount precedent thus established has been followed by the Supreme Court, in a recent case, by holding that a particular combination, which was described in an original patent, but neither claimed nor disclaimed therein, was lawfully claimed in a reissue of that patent.² This holding constituted a decision that no abandonment results from the mere fact that the inventor described the invention in an application for a patent, without either claiming or disclaiming the same; for the Supreme Court has always held that an abandonment of a right to a patent on a particular invention, whenever it occurs, is absolute and irrevocable.³

§ 91. Abandonment is also proved by evidence that the inventor is chargeable with laches, relevant to applying for a patent.⁴ Long delay constitutes laches, unless there was some reason which rendered that delay consistent with an expectation to finally secure a patent. Extreme poverty of the inventor is such a reason;⁵ but poverty which was not

¹ *Battin v. Taggart*, 17 Howard, 83, 1854.

² *Topliff v. Topliff*, 145 U. S. 165, 1892.

³ *Pennock v. Dialogue*, 2 Peters, 1, 1829; *Kendall v. Winsor*, 21 Howard, 328, 1858; *Consolidated Fruit Jar Co. v. Wright*, 94 U. S. 96, 1876; *Planing Machine Co. v. Keith*, 101 U. S. 484, 1879.

⁴ *Consolidated Fruit Jar Co. v. Wright*, 94 U. S. 96, 1876; *Craver v. Weyhrich*, 31 Fed. Rep. 607, 1887; *Wright v. Postel*, 44 Fed. Rep. 352, 1890.

⁵ *Smith v. Dental Vulcanite Co.* 93 U. S. 491, 1876; *Celluloid Mfg. Co. v. Crofut*, 24 Fed. Rep. 796, 1885.

sufficient to prevent the inventor from securing patents on other inventions,¹ or from spending money for an education,² is not such a reason. The fact that during all, or during much of the delay the inventor was within the rebellious Southern Confederacy, and therefore unable to apply for a United States patent, has also been repeatedly held to be such a reason.³ Mental disorder which was great enough to generally incapacitate the inventor for business during the time of the delay, is also such a fact as will negative laches,⁴ and physical disorder ought under the same circumstances to have the same effect.

Neither can laches be predicated of any delay which was caused by the experiments of the inventor in making or perfecting his invention,⁵ nor of any delay caused by absorbing misfortune,⁶ nor upon any neglect of which his patent solicitor was guilty.⁷ Nor does delay constitute laches when it was caused by the fact that the invention could only be used in connection with one covered by another patent, and by the fact that the inventor failed to make any arrangement with the owner of that patent for the joint use of the two inventions.⁸ If under such circumstances the inventor waits till the older patent expires before securing his patent, his delay is amply accounted for by his desire to enjoy for the full statutory term of a patent the practically exclusive right to his invention. To predicate abandonment of delay suffered for such a purpose would be logically impossible.

§ 92. Abandonment is also established by evidence that an inventor is chargeable with laches relevant to prosecut-

¹ *Rifle & Cartridge Co. v. Arms Co.* 118 U. S. 24, 1885; *Wickersham v. Singer*, 1 *McArthur's Patent Cases*, 689, 1859.

² *Craver v. Weyhrich*, 31 Fed. Rep. 607, 1887.

³ *Johnsen v. Fassman*, 1 *Woods*, 14, 1871; *Knox v. Loweree*, 1 *Bann. & Ard.* 589, 1874.

⁴ *Ballard v. Pittsburg*, 12 Fed.

Rep. 784, 1882.

⁵ *Agawam Co. v. Jordan*, 7 *Wallace*, 583, 1868.

⁶ *Beedle v. Bennett*, 122 U. S. 76, 1886.

⁷ *Birdsall v. McDonald*, 1 *Bann. & Ard.* 165, 1874; *Howes v. McNeal*, 3 *Bann. & Ard.* 376, 1878.

⁸ *Webster v. New Brunswick Carpet Co.* 1 *Bann. & Ard.* 84, 1874.

ing or renewing his application after it has been rejected or withdrawn.¹ For example, where an application for a patent is rejected when it ought to be allowed, and where the inventor long acquiesces in that erroneous rejection, supposing it to be right, he cannot on receiving better information renew his application or file another, and thereupon secure a valid patent.² In such a case the desire of the inventor to secure a patent may never have left him, but there was doubtless a complete, though perhaps reluctant, relinquishment of all expectation of so doing. An abandonment of an invention is not less real because it was unnecessary. But Congress by a special act may waive an abandonment and authorize a patent to issue for the abandoned invention.³ And laches cannot be predicated of any delay which was incurred by an applicant as the result of slowness of procedure in his case in the Patent Office, whether that slowness was due to neglect⁴ or to routine.⁵

§ 93. Constructive abandonment of inventions prior to applications for letters patent is the offspring of certain statutes, the earliest of which was the Patent Act of 1836.⁶ Sections 6 and 7 of that act authorized the Commissioner of Patents to grant a patent only where the alleged invention had not been in public use or on sale with the applicant's consent or allowance prior to the application. Section 15 provided that in suits for infringement, judgment should be rendered for the defendant if he should have pleaded and proved that the thing patented had been in public use or on sale with the consent or allowance of the patentee before his application for a patent. Section 7 of

¹ *Planing Machine Co. v. Keith*, 101 U. S. 484, 1879; *Rifle & Cartridge Co. v. Arms Co.* 118 U. S. 22, 1885.

² *Marsh v. Commissioner*, 3 Bissell, 321, 1872; *Consolidated Fruit Jar Co. v. Stamping Co.* 27 Fed. Rep. 377, 1886.

³ *Graham v. Johnston*, 21 Fed.

Rep. 42, 1884.

⁴ *Sayles v. Railroad Co.* 2 Fisher, 523, 1865.

⁵ *American Bell Telephone Co. v. United States*, 68 Fed. Rep. 542, 1895.

⁶ 5 Statutes at Large, Ch. 357, p. 117.

the Patent Act of 1839¹ provided that no patent should be held to be invalid by reason of purchase, sale, or use of the thing covered thereby prior to the application for a patent, except on proof of abandonment of such invention to the public, or on proof that such purchase, sale, or use had been for more than two years prior to such application for a patent. This provision of the Act of 1839 was in one respect restrictive of the enactments just cited from the statute of 1836, and in one respect it enlarged their operation. Its effect was to amend those enactments in the same way that it would have done if it had inserted the words "for more than two years" in the proper place in their phraseology, and had also cancelled the qualification which related to consent and allowance.² This phrase "for more than two years" means earlier than two years,³ so that the law which the two statutes established on the subject is expressed in the following sentence. A patent is void if the invention covered thereby was in public use or on sale earlier than two years before the application for that patent. And that continued to be the law of the United States on the subject under the Consolidated Patent Act of July 8, 1870,⁴ and also under the Revised Statutes.⁵ The two years contemplated by this law are ascertained by measuring backward from the date of the filing of the application in the Patent Office;⁶ but where a second or renewed application is filed to take the place of another which described and claimed the same invention, and which was withdrawn or relinquished with intent to file the second application, the two years are ascertained by measuring backward from the date of the filing of the first application.⁷

¹ 5 Statutes at Large, Ch. 80, p. 354.

² *Andrews v. Hovey*, 123 U. S. 267, 1887; 124 U. S. 694, 1887.

³ *Consolidated Fruit Jar Co. v. Wright*, 94 U. S. 94, 1876.

⁴ 16 Statutes at Large, Ch. 230, p. 198.

⁵ Revised Statutes, Section 4886; *Anderson v. Eiler*, 46 Fed. Rep. 778, 1891; *In re Drawbaugh*, 67 Off. Gaz. 929, 1894.

⁶ *Campbell v. New York*, 35 Fed. Rep. 504, 1888.

⁷ *International Crown Co. v. Richmond*, 30 Fed. Rep. 778, 1887.

§ 94. What is "public use," within the meaning of the statute? This question has now received light from a sufficient number of decisions, affirming or negating the fact of public use in particular cases, to make it possible to deduce a moderately precise answer from judicial authorities.

If the inventor allows his invention to be used by other persons generally, either with or without compensation, then it will be in public use within the meaning of the statute.¹ And the use is public which follows a transfer of the thing used from its inventor to the user, without reserving any control over it, and without expecting to make any change in it, or without any restriction.²

If the inventor uses his invention for profit, and not by way of experiment, that is a public use,³ unless actual use resulting in profit is necessary to show the inventor how to perfect his invention, and unless he does perfect it in accordance with the teachings of such use;⁴ but experimental use becomes public use when it extends further, either in time, or in number of instances, than is reasonably required to test the invention.⁵ Nor will the fact that the inventor is but an employee in the place where he uses his invention, or the fact that the profit goes primarily to his employer, oust the operation of this rule.⁶

To constitute public use, it is not necessary that more than one specimen of the thing invented should have been publicly used,⁷ nor that more than one person should have known of that use.⁸ Nor is it necessary to public use that the article used could have been seen by the public eye, if

¹ *Elizabeth v. Pavement Co.* 97 U. S. 185, 1877.

² *Root v. Third Avenue Railroad Co.* 146 U. S. 221, 1892; *Delemater v. Heath*, 58 Fed. Rep. 416, 1898.

³ *Elizabeth v. Pavement Co.* 97 U. S. 187, 1877.

⁴ *Sprague v. Mfg. Co.* 12 Fed. Rep. 724, 1882.

⁵ *International Tooth Crown Co. v. Gaylord*, 140 U. S. 63, 1891.

⁶ *Worley v. Tobacco Co.* 104 U. S. 340, 1881.

⁷ *Consolidated Fruit Jar Co. v. Wright*, 94 U. S. 94, 1876; *Jones v. Barker*, 11 Fed. Rep. 597, 1882.

⁸ *Egbert v. Lippmann*, 104 U. S. 336, 1881.

the ordinary use of such articles is veiled from view.¹

§ 95. Experimental use is never public use within the meaning of the statute, if it is conducted in good faith for the purpose of testing the qualities of the invention, and for no other purpose not naturally incidental to that.² In such a case it is immaterial whether the experimental use disclosed a necessity for improvement, or disclosed no such necessity; and is also immaterial whether the use was conducted with secrecy or not. It may indeed have been had in the open air, and have continued every day for several years, and have been known to hundreds of persons, and have incidentally inured to the profit of the user and of the public, and still not be a public use, within the meaning of the statute, if the nature of the invention was such that only long-continued out-door use could show whether the invention possessed utility, or show in what respects, if any, it required to be improved.³ The liberal ideas which underlie the decision just cited will doubtless be applied to every variety of invention, as occasion serves, and will be found elastic enough to cover every meritorious case. Indeed, Judge LOWELL went still further in the direction of liberally allowing scope to experimental use, and decided that such use is not public use within the meaning of the law, where, in order to test its comparative as well as its absolute utility, and in order to convince others of its merits, an inventor allows them to use his invention after he has himself become satisfied that it is useful.⁴ But where the main object of the use was profit, and improvement was only an incidental aim, the use is not experimental in the eye of the law;⁵ and proof of the experimental character of any use

¹ *Egbert v. Lippmann*, 104 U. S. 386, 1881; *International Tooth Crown Co. v. Gaylord*, 140 U. S. 58, 1891.

² *Beedle v. Bennett*, 122 U. S. 77, 1886; *Harmon v. Struthers*, 43 Fed. Rep. 443, 1890; *Pacific Cable Railroad Co. v. Butte City Ry. Co.* 55 Fed.

Rep. 765, 1893; *Harmon v. Struthers*, 57 Fed. Rep. 641, 1893.

³ *Elizabeth v. Pavement Co.* 97, U. S. 124, 1877.

⁴ *Sinclair v. Backus*, 5 Bann. & Ard. 81, 1880.

⁵ *Smith & Griggs Mfg. Co. v. Sprague*, 123 U. S. 256, 1887.

which occurred earlier than two years before the application for a patent, must be full, unequivocal, and convincing, or it cannot prevail to save that patent from invalidity.¹

Public use by a stranger, without the knowledge of the inventor, more than two years before the inventor applies for a patent, generally has the same operation of constructive abandonment, that public use by the inventor himself would have ;² but Judge WHEELER decided, that where the inventor continued his experiments legitimately, until less than two years before he applied for his patent, that patent will not be defeated by the fact that another person constructed, and still another used, his invention, without his knowledge, more than two years before the application for the patent was made.³

§ 96. What is being "on sale," within the meaning of the statute? The answer to this question also, can now be accurately delineated in nearly or quite all of its boundaries.

A single instance of sale of one specimen of the thing invented is enough to constitute putting the invention on sale,⁴ and it is immaterial if the purchase price is not paid more than two years before the application.⁵ Indeed a device will be on sale within the meaning of the law, if it is offered for sale, whether any specimen of it is actually sold or not.⁶ If, however, the nature of the invention is such that the inventor is obliged to put it into the hands of others for crucial experiment, he may sell specimens to those others for that purpose, and such a sale will not be obnoxious to the law now under consideration.⁷ But if the invention could have been tested by the inventor on his own premises, as well as by any one there or elsewhere, then either an

¹ *Smith & Griggs Mfg. Co. v. Sprague*, 123 U. S. 254, 1887.

² *Andrews v. Hovey*, 123 U. S. 267, 1887; 124 U. S. 694, 1887.

³ *Campbell v. New York*, 47 Fed. Rep. 515, 1891.

⁴ *Consolidated Fruit Jar Co. v. Wright*, 94 U. S. 94, 1876.

⁵ *Anderson v. Monroe*, 55 Fed. Rep. 405, 1893.

⁶ *Plimpton v. Winslow*, 14 Fed. Rep. 921, 1883.

⁷ *Graham v. McCormick*, 5 Bann. & Ard. 244, 1880; *Graham v. Mfg. Co.* 11 Fed. Rep. 142, 1880.

absolute or a conditional sale of a specimen of the thing invented, will be putting the invention on sale, unless there is unequivocal evidence that the sale was made for the purpose of experimental use.¹ And a sale for the purpose of testing the commercial merits of an invention, will constitute being "on sale;"² but where a specimen of an invention is built or made to order, it is not "on sale" till it is completed, delivered, and accepted.³

§ 97. An assignment of the inchoate right to an invention, is not such a sale as will be obnoxious to the statute now under explanation.⁴ So far from furnishing evidence of abandonment, the sale of the inchoate right to a patent indicates an expectation that such a patent will be obtained, and that right be thus translated into a legal title.

§ 98. Precise identity between the thing covered by the patent, and the thing which the inventor allowed to be in public use or on sale more than two years before he applied for that patent, is not necessary to constitute constructive abandonment of the invention covered by the latter. It is enough if the two devices are substantially the same,⁵ or if the advance from one to the other did not amount to invention;⁶ but it is not enough that the two devices perform the same function and are somewhat similar in construction and in mode of operation.⁷

§ 99. No constructive abandonment results from any mere making of a specimen of an invented thing more than two years before the application for a patent.⁸ But where an invention consists in a process of making a thing, the making of a specimen of that thing, by that process, is a

¹ *Henry v. Soapstone Co.* 5 Bann. & Ard. 108, 1880; *DeLamater v. Deeley*, 53 Fed. Rep. 380, 1892.

² *Smith & Davis Mfg. Co. v. Mellon*, 58 Fed. Rep. 707, 1893.

³ *Campbell v. New York*, 36 Fed. Rep. 261, 1888.

⁴ *Elm City Co. v. Wooster*, 6 Fisher, 452, 1873.

⁵ *Hall v. Macneal*, 107 U. S. 90,

1882; *Theberath v. Trimming Co.* 15 Fed. Rep. 251, 1883.

⁶ *International Tooth Crown Co. v. Gaylord*, 140 U. S. 62, 1891.

⁷ *Draper v. Wattles*, 3 Bann. & Ard. 618, 1878.

⁸ *Comstock v. Sandusky Seat Co.* 3 Bann. & Ard. 188, 1878; *Campbell v. New York*, 36 Fed. Rep. 261, 1888.

use of that process, and is therefore subject to the rules which govern using, and not to that which applies to making only.

§ 100. Public knowledge of an invention, acquired with the consent of the inventor, prior to his application for a patent, was formerly fatal to the validity of any patent granted for that invention. The Patent Act of 1793¹ provided that to be patentable, a thing must not have been known before the making of an application for a patent thereon. The Supreme Court construed that enactment to mean only that the invention must not have been known to the public with the consent of the inventor.² The Patent Act of 1836 repealed all prior statutes on the subject of patents, and did not provide that any unfavorable effect on an inventor's right should result from public knowledge of his invention, acquired at any time after its production by him.³ Nor has any later statute made any such provision. Since 1836 there has, therefore, been no reason for an inventor to keep his invention secret, unless he proposed to rely upon secrecy, and not upon a patent, for his profits, or unless he feared that some other person, obtaining knowledge of the invention, would falsely claim it as his own.

§ 101. A public use or a sale of a specimen of a newly invented thing, occurring in any foreign country after its invention by an applicant for an American patent, but more than two years before his application is made, will not have the same effect upon such a patent, that it would have had if that public use or that sale had occurred in the United States. The language of section 4886 of the Revised Statutes, contains no restriction as to the country wherein the public use or the sale of a newly invented thing, more than two years prior to an application for a patent thereon, must occur, in order to constitute constructive abandonment of that invention; and it was held by one Circuit Court, that no

¹ 1 Statutes at Large, Ch. 11, Section 1, p. 318.

18, 1829.

² *Pennock v. Dialogue*, 2 Peters,

³ *Elizabeth v. Pavement Co.* 97 U. S. 136, 1877.

such restriction exists.¹ But the Supreme Court reversed that decision, and decided that sections 4886, 4887, 4920 and 4923 of the Revised Statutes, taken together, show that the right of an inventor, to obtain a United States patent, is not lost by reason of the fact that his invention was in public use or on sale, in some foreign country, more than two years before his application for a United States patent thereon.²

§ 103. Constructive abandonment of an invention, after an application for a patent thereon, necessarily results from constructive abandonment of that application, in certain classes of cases which are explained in the chapter on applications.³ In still another class of cases, constructive abandonment of an invention, after an application for a patent thereon, necessarily results from a particular kind of constructive abandonment of that application, unless a new application is filed within a certain time after such abandonment. That class of cases is the following. Where an applicant omits to pay the final fee within six months from the time at which his application was allowed, and notice thereof sent to him or to his agent, and where he also omits to make any new application for a patent on the same invention within two years after such an allowance, he loses all right to obtain a patent for that invention.⁴

§ 104. The statutory law relevant to constructive abandonment, resulting from a public use or from a sale of a newly invented thing, more than two years before an application for a patent, is a law which operates inflexibly upon all cases coming within it. Its effect cannot be obviated by any evidence showing reasons for the delay, however ample and meritorious those reasons may be.⁵ The rule of this section doubtless applies also to the constructive abandonment explained in the last.

¹ Gandy v. Belting Co. 28 Fed. Rep. 570, 1886.

² Gandy v. Belting Co. 143 U. S. 592, 1892.

³ Section 147 of this book.

⁴ Revised Statutes, Section 4897.

⁵ Sisson v. Gilbert, 9 Blatch, 189, 1871.

§ 105. Surrender of an invention may be effected after the grant of letters patent therefor, by means of a formal surrender of those letters patent. A proceeding of the kind was mentioned by the Supreme Court as being confessedly proper as early as 1832,¹ and an actual surrender of the sort was tacitly approved by that tribunal about twenty years later.²

§ 106. No abandonment of an invention after the issue of letters patent thereon has ever been judicially decided to exist in the United States. The Patent Act of 1832³ provided that a certain class of aliens might obtain United States patents who had theretofore been excluded from that privilege; but it coupled with that provision an enactment that every patent granted by virtue of that Act should cease and determine in case of failure on the part of the patentee to introduce the invention into public use in the United States within one year from the issuing of the patent, or in case of a discontinuance of such public use for any period of six months, or in case of failure on the part of the patentee to become a citizen of the United States. In providing such a rule of constructive abandonment for a certain class of aliens, Congress showed that it did not overlook the subject of non-user of patented inventions; and in omitting to provide any such rule for citizens of the United States, Congress showed that it did not intend constructive abandonment to result from non-user in their cases. Even as to aliens, the policy of the law upon the point was soon changed. The Act of 1836 repealed all former patent statutes, and did not re-enact the provision just cited from the Act of 1832, nor put any corresponding restrictions upon any class of patentees. Nor has any later statute contained any provision of the kind. The fair inference from this course of legislation seems to be that Congress does not intend any patent right to be lost on any ground of non-user of that right. Even before Congress had thus indicated

¹ *Grant v. Raymond*, 6 Peters, 240, 74, 1854.
1832.

³ 4 Statutes at Large, Ch. 203, p.

² *Battin v. Taggart*, 17 Howard, 577.

its intention on the subject, Justice WASHINGTON instructed a jury that no disuser of an invention, after it is patented, can amount to an abandonment so as to deprive the patentee or his assignees of their exclusive right to it for the term of the patent.¹ So, also, the Supreme Court has held that no presumption arises against a patent from any use of the invention by the public after the patent is granted.² Since no abandonment of an invention, after it is patented, can arise out of any existing statute, nor be based on any non-user by the patentee, or on any user by the public, we seem shut up to the conclusion that no such abandonment is known to our laws.

§ 107. Acquiescence by a patentee in unlicensed use of his invention during the life of the patent, has sometimes been said or been intimated by courts to amount to an abandonment of the patent and of the invention. Four cases containing such statements or suggestions are to be found in the reports. In two of them the judges made their observations on the subject, in spite of their decisions that no such question was involved in the pleadings. In the other two cases the views of the judges were inserted in charges to juries, but inasmuch as the juries found for the respective plaintiffs, it seems that there were no facts in the cases which called for such statements in the charges. The opinions of the four judges on the point seem, therefore, to be no more weighty than the reasons which support them. But no reasons applicable to the subject of abandonment of a patent are contained in either of the cases, though one of them contains statements of reasons adapted to support the doctrine of estoppel. Nor do the four cases agree among themselves relevant to the character or to the quantity of acquiescence needed to support an hypothesis of abandonment of a patent. In *Wyeth v. Stone*³ Justice STORY intimated that such acquiescence must be without objection,

¹ *Gray v. James*, 1 Peters C. C. 1833.
403, 1817.

³ *Wyeth v. Stone*, 1 Story, 282,

² *Shaw v. Cooper*, 7 Peters, 320, 1840.

and must continue for a series of years. In *Ransom v. New York*¹ Judge HALL placed no such limitation as the last of these upon the doctrine, and if he hinted at the first of them he hinted but vaguely. In *Bell v. Daniels*² Judge LEAVITT said that it would require a strong case to prove abandonment of a patent actually granted. In *Williams v. Railroad Co.*³ Judge WALLACE said: "Neither does mere delay or acquiescence establish an abandonment or dedication of the patent. There must be an acquiescence in the appropriation of the right of such a character as reasonably to induce the belief that the owner intended to relinquish it to the public use." The opinions cited in this section, so far as they disagree with the statutes and decisions cited in the last, do not agree in that disagreement, and they seem insufficient to outweigh, or even to modify, the doctrine set forth in that section.

§ 108. Questions relevant to actual or to constructive abandonment of inventions are questions of fact;⁴ and every reasonable doubt relevant to any such question should be solved in favor of the patent, for the law does not favor forfeiture.⁵

¹ *Ransom v. New York*, 1 Fisher, 273, 1856.

² *Bell v. Daniels*, 1 Bond, 219, 1858

³ *Williams v. Boston & Albany Railroad Co.* 4 Bann. & Ard. 441, 1879.

⁴ *Battin v. Taggert*, 17 Howard, 84, 1854; *Kendall v. Winsor*, 21 How-

ard, 330, 1858.

⁵ *Pitts v. Hall*, 2 Blatch. 238, 1851; *McCormick v. Seymour*, 2 Blatch. 256, 1851; *Birdsall v. McDonald*, 1 Bann. & Ard. 165, 1874; *Coinstock v. Sandusky Seat Co.* 3 Bann. & Ard. 188, 1878; *Anderson v. Eller*, 46 Fed Rep. 779, 1891.

CHAPTER VI.

APPLICATIONS.

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§ 109. AN application for a patent consists of the following transactions: The deposit in the Patent Office of a written petition to the Commissioner of Patents; the like

deposit of a written specification of the invention; the making of an oath; the payment of the Patent Office fee; and in some cases the deposit of a drawing; and in some cases the deposit of a model; and in some other cases the deposit of specimens.¹ Applications and proceedings on applications are primarily governed by the provisions of the Revised Statutes. Where those provisions do not cover a particular point, that point is governed by the rules of the Patent Office.² Every such rule, unless it is inconsistent with law, is as authoritative as the Revised Statutes themselves.³

§ 110. The petition is a communication, signed by the applicant and addressed to the Commissioner of Patents, stating the name and residence of the petitioner, and requesting the grant of a patent for the invention therein designated by name and by a reference to the specification for a full disclosure thereof.⁴ The petition must be the petition of the inventor, and not of an assignee of the inventor, though it may properly request that the patent, when granted, shall be granted to an assignee.⁵ If, however, the inventor becomes insane or dies before executing a petition, the petition may be made and signed by his guardian in case of his insanity,⁶ or by his executor or administrator in case of his death.⁷

§ 111. The specification properly consists of seven parts. 1. The preamble, giving the name and residence of the applicant, the title of the invention, and the name of any foreign country from which he or his assigns may have received a foreign patent for the same invention, and other particulars connected therewith. 2. A general statement of

¹ Revised Statutes, Sections 4888, 4889, 4890, 4891, 4892, 4893; Rules of Practice of the United States Patent Office, revised April 1, 1892, Rule 30.

² Revised Statutes, Section 483.

³ United States *v.* Commissioner of Patents, 22 Off. Gaz. 1365, 1882.

⁴ Patent Office Rule 33.

⁵ Revised Statutes, Section 4895; Patent Act of March 3, 1837, Section 6.

⁶ *Whitcomb v. Spring Valley Coal Co.* 47 Fed. Rep. 658, 1891.

⁷ Revised Statutes, Section 4896; Patent Act of April 17, 1800, Sec. 2.

the nature and object of the invention. 3. A brief description of the drawings, if drawings are made, showing what each view represents. 4. A detailed description of the invention, explaining fully its construction and mode of operation, if it is a thing, or the manner of performing it, if it is a process. 5. The claim or claims. 6. The signature of the inventor. 7. The signatures of two witnesses.¹

§ 112. The preamble states the name and residence of the inventor and the title of the invention, in order to connect the specification with the petition; and it states the particulars of foreign patents previously granted for the same invention, in order to inform the Commissioner whether he is to grant a patent for seventeen years, or whether, in pursuance of Section 4887 of the Revised Statutes, he is to so limit the patent that it will purport to expire at the same time with some foreign patent for the same invention. There is no statute which makes it the duty of the applicant to furnish the Commissioner with information on that subject. If he omits to do so, and if the Commissioner ascertains the facts elsewhere, and limits the term of the patent accordingly, then every purpose is answered that would have been answered if the applicant had stated the facts in his application. The rules of the Patent Office, however, do require the applicant to mention such a foreign patent, if any exists,² and in the absence of such mention the Commissioner, if he grants a patent, grants it for the term of seventeen years. If subsequent litigation discloses the prior granting of a foreign patent for a term sooner ending, it will be impossible for the United States patent to continue in force for the full term expressed on its face, but it will be given the same duration that it ought to have purported to have.³

§ 113. The general statement of the nature and object of the invention is a convenient mode of introducing the detailed description. Every such statement should be free

¹ Patent Office Rule 39.

² Patent Office Rule 39.

³ Telephone Cases, 126 U. S. 572, 1888.

from any particularity or limitation which is not necessary to distinguish the invention or inventions covered by the claim or claims from all earlier inventions; for where a general statement contains such a particularity or limitation there is always danger that it will be imported, by implication, into one or more of the claims, and there operate to reduce the area covered by the patent to territory more narrow than the state of the prior art required.

§ 114. The description of the drawings is a convenience in aid of their understanding, but if that description is omitted, and all reference to the drawings is excluded from the specification, no statutory requirement is necessarily departed from.¹ In such a case, however, the specification would perhaps be impossible to be understood, and therefore be obnoxious to the rules stated in the next section.

§.115. The detailed description must be full enough, and clear enough, and concise enough, and exact enough, to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make and use the invention, if it is a machine or a manufacture, or to compound the invention, if it is a composition of matter, or to perform the invention, if it is a process.² If the description falls below this standard, the patent, if granted, will be void.³ But this standard may be reached, in the case of a design, by a reference to the drawing or photograph⁴ annexed to the specification. In the statute by which this standard is established, the phrase "any persons skilled in the art or science" includes persons of ordinary and fair information and skill in the relevant art or science; and that phrase is not confined to the most eminent scientists, or to the most competent experts, in that science or art.⁵

The statute also says that in case of a machine, the applicant shall explain the principle thereof, and the best mode in

¹ *Emerson v. Hogg*, 2 Blatch, 9 1845.

² Revised Statutes, Section 4888.

³ *O'Reilly v. Morse*, 15 Howard, 62, 1853.

⁴ *Dobson v. Dorman*, 118 U. S. 14, 1885; *Anderson v. Saint*, 46 Fed. Rep, 760, 1891.

⁵ *Tannage Patent Co. v. Zahn*, 66 Fed. Rep. 989, 1895.

which he has contemplated applying that principle, so as to distinguish it from other inventions.¹ These provisions must be read in the light of their avowed object. That object is identification. The first provision cannot mean that the inventor must infallibly explain the law of nature which makes his machine work; for if it means that, neither Morse nor Bell complied with it when describing the telegraph or the telephone, and, indeed, neither Morse nor Bell nor any man could have done so. The second provision cannot mean that every inventor must infallibly judge which of several forms of his machine will eventually be found to work best, for if it means that, it requires what is often impossible: requires the inventor to foresee the ultimate effects of new and comparatively untried causes. The first provision means that the essential distinctive characteristic of the machine shall be explained; and the second provision means that the inventor shall state the mode which he contemplates to be the best.² Inasmuch as the validity of a patent depends on the sufficiency of the description, the subject of this section is treated with more detail in the chapter on letters patent, the seventh of this book. Enough has been outlined in this connection, to show what kinds of statements those descriptions need to contain.

§ 116. The claim or claims constitute a necessary part of every specification. The statutory requirement in this regard is, that the applicant "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention."³ The practice of the Patent Office has always been to require the claim or claims to be made in that part of the specification which immediately precedes the signatures. It is a practice of many solicitors of patents to write claims in vague phraseology, with an idea that vagueness is elasticity, and that elasticity is excellence. Such a practice is neither honest

¹ Revised Statutes, Section 4888. 1857.

² *Carver v. Mfg. Co.* 2 Story, 432, 1843; *Page v. Ferry*, 1 Fisher, 309,

³ Revised Statutes, Section 4888.

nor expedient. It is not honest, because it is often intended, and always adapted to deceive the public, and to lead individuals into unintended infringement. It is not expedient, because dishonesty is bad policy in matters of patents, as in all other human affairs, and because vagueness of claims may make a patent void which would otherwise be valid. It is the practice of many other solicitors of patents to write claims in loose phraseology, because they do not know how to write precise sentences. By multiplying words they hope to hit the mark, on the same principle that the user of a shotgun hopes to hit a solitary bird. But the principles which apply to shotguns do not apply to rhetoric. The true rhetorician uses a rifle, not a blunderbus. With him every word hits its target, because it is adapted to do so, and because he knows how to aim it.

Writing a claim for a patent may require as many points of information and powers of mind, as can ever be required for any prose writing of similar length. More than half the chapters of this book contain such points of information, but neither this nor any other law book, can embody all that the penner of such a claim requires to know. A few leading points may, however, be conveniently stated in this place.

§ 117. In a case where the description sets forth an entire machine, the applicant may lawfully make a claim coextensive with the description, if the machine as a whole possesses novelty. But such a claim ought seldom to be the only one in a patent; because, for reasons stated in the chapter on infringement, it can, in most cases, be readily evaded. The proper practice is to fix upon the new parts, or new combinations, which the described machine contains, and to make a separate claim for each of those parts, and for each of those combinations.¹ Indeed the applicant may, if he will, apply for and receive a separate patent for each of those parts and combinations.²

¹ Gill v. Wells, 22 Wallace, 24, 1874;
Adams v. Jones, 1 Fisher, 530, 1859.

² Corn-Planter Patent, 23 Wallace, 224, 1874.

But one patent or claim having been granted to an inventor, upon a particular part or combination, as performing particular functions; no valid claim or patent can be afterward granted to him, on the same part or combination, as performing a part only of the functions called for by the claim of the first patent.¹ And it is advisable to take out all patents, on the same day, on different combinations of parts, some of which are in each of the different combinations. To secure a particular part of a machine, a claim must specify that part; and to secure a particular combination of some of the parts of a machine, a claim must specify all of those parts, and the description must explain their joint mode of operation, and must state their joint function.²

And a part or a combination may be claimed separately, though it cannot do useful work separately from the residue of the machine or apparatus of which it constitutes a part.³ Otherwise an infringer might take the most important part of an invention, and by changing the method of adapting it to its environment, might avoid any charge of infringement. The invention of a needle with an eye near the point, is the basis of all sewing machines; but the methods of operating such a needle are many, and if its inventor had been obliged to make his own method a part of every claim in which the needle was an element, his patent would have been practically worthless.⁴

§ 117*a*. A part of a machine when claimed alone, may be specified by the use of its name in the claim, where no other part of the machine has a similar name; but where the use of a name alone, is not sufficiently specific to show what part of the machine is referred to, that object can be accomplished by mentioning, in the claim, the reference letter or

¹ *Miller v. Eagle Co.* 151 U. S. 199, 1894.

² *Parks v. Booth*, 102 U. S. 102, 1880; *Forbush v. Cook*, 2 Fisher, 669, 1857.

³ *Hancock Inspirator Co. v. Jenks*, 21 Fed. Rep. 915, 1884; *Rapid Serv-*

ice Store Ry. Co. v. Taylor, 43 Fed. Rep. 251, 1887; *Roberts v. Nail Co.* 53 Fed. Rep. 920, 1892; *Holloway v. Dow*, 54 Fed. Rep. 516, 1893.

⁴ *Deering v. Winona Harvester Works*, 155 U. S. 302, 1894.

numeral, which is used to indicate that part in the description and in the drawings. Such a use of a reference letter or numeral does not necessarily confine the claim to a part having all the characteristics of the part which, in the drawings, is indicated by that letter or numeral;¹ because a claim which expressly covers a particular device, impliedly covers any equivalent of that device; and other devices will be held to be equivalent or not equivalent, by means of certain tests, which are explained in the chapter on infringement, and which are quite foreign to the question whether a particular device is designated in a claim by a reference letter or numeral, or by a name alone, or in some other way.

It is true that where the particular characteristics of the parts of the combination shown in the drawings of a patent, are all that differentiate it from the prior art; and where those parts are specified in an amended claim by reference letters or numerals, in pursuance of a rejection by the Patent Office of a prior claim which was broad enough to cover the prior art; the amended claim is limited to a combination of parts having those particular characteristics; for if not so restricted, the effect would be to make the claim co-extensive with what the Patent Office rejected.² But the same thing is true, in an otherwise similar case, where the parts of the combination are specified, in an amended claim, by names alone, or in any other way. The breadth or the narrowness of a claim as the case may be, does not depend upon any artificial rule of interpretation;³ and to narrow a broad invention by reference letters or numerals alone, would be to frame and enforce such a rule.

Where some of the parts of a combination, operate therein to give motion to other parts, which do the final work of the combination, it is proper to specify the former

¹ *Campbell Printing Press Co. v. Marden*, 64 Fed. Rep. 785, 1894.

² *Knapp v. Morss*, 150 U. S. 228, 1893; *Lehigh Valley Railroad Co.*

v. Kearney, 158 U. S. 469, 1895.

³ *Topliff v. Topliff*, 145 U. S. 171, 1892.

by the use of such terms as "means," "mechanism," or "devices" for giving that motion.¹ But such general language will not include all means, mechanism, or devices which can perform that function, but only those which are shown in the patent, and their equivalents.² And in this case also, the question whether other means, mechanism, or devices are equivalents of those shown in the patent, will be determined by the established rules on that subject, rather than by any apparent looseness or elasticity of the language used in the claims to designate the parts involved in the inquiry.

§ 118. In cases where the description sets forth a manufacture, there ought to be a separate claim for each of its patentable features, or at least for the article without any dispensable feature; for if there is but one claim, and if all those features are covered by it, then those persons who manage to dispense with even the least of them, incur no liability by making, using, or selling articles which possess all the others.³

§ 119 In cases where the description relates to a composition of matter, the claim should cover that composition in its entirety, and should, either expressly, or by reference to the description, specify the respective proportions which the different ingredients bear to each other.⁴ But where some of the described ingredients may be dispensed with, the applicant, if he states that fact in the description, may have a separate claim for a composition of matter composed only of the residue, or he may have a single claim covering the indispensable ingredients, whether with or without the others.⁵

¹ *Brush Electric Co. v. Ft. Wayne Electric Light Co.* 40 Fed. Rep. 833, 1889; *Brush Electric Co. v. Western Electric Co.* 43 Fed. Rep. 537, 1890; *Brush Electric Co. v. Electric Imp. Co.* 52 Fed. Rep. 975, 1892.

² *Dudley E. Jones Co. v. Munger Mfg. Co.* 49 Fed. Rep. 64, 1891;

Williams v. Steam Gauge & Lantern Co. 47 Fed. Rep. 323, 1891.

³ *Prouty v. Ruggles*, 16 Peters, 336, 1842.

⁴ *Tyler v. Boston*, 7 Wallace, 327, 1868.

⁵ *Rubber Co. v. Goodyear*, 9 Wallace, 788, 1869.

§ 120. In cases where the description relates to a process, the claim should cover all the necessary occurrences in that process, and cover no more. If it covers less it will be void for want of utility; and if it covers more, it can be evaded by persons who omit any one which is unnecessary, when using the others.

§ 120*a*. In cases where the description and its accompanying drawing or photograph represent a design, the claim may identify its subject by a reference to that drawing or photograph.¹ And a design patent may contain a claim for the entire design, with other claims for such of the parts of the design as are independently patentable.² But several unconnected ornaments cannot lawfully be aggregated and claimed together in one claim.³

§ 121. The signatures of the applicant and of the witnesses must embody the full names of those persons, and must be legibly written.⁴ The grammatical construction of the statutory provisions, relevant to signatures, seems to indicate that the document signed by the applicant, and not the signature of that applicant, is the thing which is to be attested by the two witnesses. In cases where language of similar character has been used in statutes which prescribe the mode of attesting wills, it has been decided to be immaterial, whether the witnesses sign before or sign after the execution of the document;⁵ but where such statutes have provided for attesting the signatures rather than the will, it is the law that the document is void if the witnesses sign before the testator.⁶ It is the practice of the Patent Office to regard the attestation as being attestation of the signatures, and, accordingly, to require two witnesses for each signature, in cases of joint applications for joint

¹ *Dobson v. Dornan*, 118 U. S. 14, 1885.

² *Dobson v. Hartford Carpet Co.* 114 U. S. 446, 1885; *Britton v. White Manufacturing Co.* 61 Fed. Rep. 95, 1894.

³ *Dukes v. Bauerle*, 41 Fed. Rep.

781, 1890.

⁴ Patent Office Rule 40.

⁵ *O'Brien v. Gallagher*, 25 Conn. 229, 1856.

⁶ Wharton on Evidence, Section 888.

inventions. The same two witnesses may indeed attest all the signatures ; but where one witness attested the signature of one joint inventor, and another witness attested the signature of the other, of two joint inventors, the Patent Office has held the attestation to be insufficient.

§ 122. The oath is not required by the statute to be in writing, nor to be recorded. It may be taken anywhere in the United States, before any person authorized by law to administer oaths at that place ; or, when the applicant resides in a foreign country, it may be taken before any minister, chargé d'affairs, consul, or commercial agent, holding commission under the government of the United States, or before any notary public of the foreign country in which the applicant may be.¹

Recital in the letters patent, that the required oath was made by the applicant, is, in the absence of fraud, conclusive evidence of that fact.² The presence, in the files of the Patent Office, of a paper purporting to be the oath in a given case, but void for lack of a jurat, or for some other fault, is a harmless circumstance.³ In such a case the law presumes that the oath recited in the letters patent was made orally, or was embodied in some other paper. It is presumed that the Commissioner will never issue a patent till he is satisfied that the applicant has somehow made oath to the facts to which the statute requires him to swear. When the Commissioner is so satisfied, and recites the fact in the letters patent, all inquiry on the subject is foreclosed, except in cases of actual fraud. Rule 47 of the Patent Office provides, however, that the oath or affirmation is to be attested in all cases by the proper official seal of the officer before whom it is taken. That implies that the Commissioner requires the oath to be put into writing. If, however, he were to waive that require-

¹ Revised Statutes, Section 4892.

² *Seymour v. Osborne*, 11 Wallace, 516, 1870.

³ *Crompton v. Belknap Mills*, 3 Fisher, 536, 1869; *DeFlores v. Ray-*

nolds, 14 Blatch 506, 1878; *Hoe v. Kahler*, 12 Fed. Rep. 111, 1882; *Hancock Inspirator Co. v. Jenks*, 21 Fed. Rep 914 1884.

ment in a given case, and were to content himself with an oral oath, and were to recite in the patent that the required oath was made, the law would still have been complied with.

§ 123. The statute requires an applicant to make oath that he does verily believe himself to be the first inventor of the invention for which he solicits a patent, and to state of what country he is a citizen.¹ The Patent Office rules require that this last mentioned statement shall also be made in the oath, and that the applicant shall also state in the oath, where he resides, and whether the invention has been patented to himself, or to any other with his consent or knowledge, in any country, and if it has, that the applicant shall name, under oath, such foreign country or countries, and shall likewise set forth the number and date of every such patent granted therein, and that, according to his knowledge and belief, the same has not been in public use in the United States for more than two years prior to the application in this country.²

The statute of 1836, which was in force till the approval of the act of 1870, required the applicant to make oath or affirmation of what country he was a citizen,³ whereas the Act of 1870, and the Revised Statutes, require only his statement on that subject. The old law governs all applications made before July 8th, 1870; and under it Justice GRIER decided that where an applicant mentioned a wrong country in his oath, that error rendered his patent void, even though it arose from an erroneous opinion relevant to what constituted citizenship of the United States.⁴ But under the Statute of 1870, re-enacted in the Revised Statutes, such an error does not invalidate a patent.⁵

When an application for a patent is made by an executor or administrator of a deceased inventor, the statute directs the oath to be so varied in form that it can be made by

¹ Revised Statutes, Section 4892.

² Patent Office Rules 46 and 39.

³ 5 Statutes at Large, Ch. 357, Section 6, p. 119.

⁴ *Child v. Adams*, 1 Fisher, 193, 1854.

⁵ *Tonduer v. Chambers*, 37 Fed. Rep. 337, 1889.

him.¹ Whether, in such a case, it is necessary for the applicant to swear that he believes that the deceased believed himself to be the first inventor, or whether it is necessary for the applicant to swear that he believes that the deceased was in fact the first inventor of the invention, is an unsettled question. If the first is the true view, then an executor may obtain, without perjury, a patent for an invention which he may know to have been previously used in the United States. If the second is the true view, then an executor may be unable to obtain, without perjury, a patent for an invention never before known or used in this country, and not previously patented or described in any printed publication, in this or in any foreign country, and not known or believed by its inventor, to have been previously known or used anywhere in the world. In the first of these contingencies, a wrong may result to the public, and in the last, a wrong may result to the beneficiaries of the deceased.

§ 124. An affirmation in judicial form may always be substituted for any oath required by any United States statute.² Nor is this rule confined, as it is in the statutes of some of the States, to cases where the affiant informs the magistrate that he has scruples of conscience against taking an oath.

§ 125. The Patent Office fee, due with the application for a patent for a process, machine, manufacture, or composition of matter, is fifteen dollars, and a final fee of twenty dollars is payable after such a patent has been allowed and before it is issued. The fees for patents for designs, vary with the length of the terms of the patents applied for. For such a patent for three years and six months, the fee is ten dollars: for such a patent for seven years, the fee is fifteen dollars: for such a patent for fourteen years, the fee is thirty dollars.³ Fees for design patents are required to be paid in advance.⁴ The final fee, above mentioned, must be paid within six months after the patent is allowed, and notice thereof is sent to the applicant or his agent; and if

¹ Revised Statutes, Section 4896.

³ Revised Statutes, Section 4934.

² Revised Statutes, Section 1.

⁴ Patent Office Rule 217.

that fee is not paid within that time, the statute provides that the patent shall be withheld.¹ The Commissioner of Patents has no jurisdiction to do what the statute forbids. Therefore if he were to issue a patent on an application, the final fee for which was not paid till more than six months after the patent was allowed, he would be acting without authority, and the patent would, for that reason, be void. At common law, a month is a lunar, not a calendar month.² Many of the States have reversed this definition by statute, and though Congress has never done so, the Supreme Court of the United States has reached that good result by judicial interpretation; and the word "month" wherever it occurs in the patent laws, must now be taken to mean a calendar and not a lunar month.³

§ 126. Drawings are required by the statute to be furnished by applicants for patents, in all cases wherein the invention admits of representation by drawings.⁴ The statutory requirement relevant to the character of such drawings, is merely that they shall be signed by the applicant or by his attorney in fact, and shall be attested by two witnesses. The Patent Office rules require, in addition, that drawings must show every feature of the invention covered by the claims; and when the invention consists of an improvement on an old machine, must exhibit, in one or more views, the invention itself, disconnected from the old structure, and also, in another view, so much only of the old structure as will suffice to show the connection of the invention therewith.⁵ Those rules also describe numerous other characteristics for drawings.⁶ They are all necessary to the systematic and proper conduct of the business of the office, and must be carefully followed in order to secure favorable action from the Commissioner.

To be as useful as possible, all drawings for letters patent ought to show the true positions and proportions of the

¹ Revised Statutes, Section 4885.

² Blackstone, Book 2, Ch. 9.

³ Guaranty Trust Co. v. Railroad Co. 139 U. S. 145, 1891.

⁴ Revised Statutes, Section 4889.

⁵ Patent Office Rule 50.

⁶ Patent Office Rule 51.

parts of the inventions which they purport to delineate; but it is not necessary that they be accurate enough to be used as working drawings, from which to construct specimens of those inventions.¹

Drawings in applications filed prior to July 8, 1870, and after July 4, 1836, were required to have "written references."² The object of such references was to connect the various parts of the drawings with the corresponding parts of the specification; but it was a sufficient compliance with that statute, where those references were made on the drawings, though not made in the specifications.³ The present statute says nothing about any references, or other means of connecting drawings with specifications; but the Patent Office rules require that they shall be connected by figures adjacent to the different views, and by letters or figures adjacent to the different parts of the drawings, and by incorporating those figures and letters in the descriptive part of the specification.⁴

§ 127. A model of the invention is required by the statute to be furnished by the applicant, in all cases wherein the invention admits of representation by model, provided the Commissioner requires a model.⁵ This proviso was not in the statute of 1836, but it was inserted in that of 1870, in order to enable the Commissioner to dispense with models, in all cases where their utility is inferior in value to their cost, and to the room they would occupy in the Patent Office. Under the operation of the proviso, models are at present called for by the Commissioner in very few of the cases which admit of representation thereby.

§ 128. Specimens of compositions of matter, and of the ingredients thereof, are required by the statute to be furnished by applicants for patents for such compositions of matter, in all cases where the Commissioner calls for such

¹ American Hide and Leather Splitting Machine Co. v. Machine Co. 4 Fisher. 284, 1870; Royer v. Coupe, 29 Fed. Rep. 369, 1886.

Section 6, p. 119.

³ Emerson v. Hogg, 2 Blatch. 1, 1845.

⁴ Patent Office Rules 38 and 51.

² 5 Statutes at Large, Ch. 357.

⁵ Revised Statutes, Section 4891.

specimens.¹ He always does call for at least a specimen of the composition, put up in proper form to be preserved, unless that composition is in its nature perishable.²

§ 129. An application for a patent dates from its filing in the Patent Office, and not from the day of its execution by the applicant, nor from the day of the deposit of a model in the Patent Office, nor from the day of the deposit of anything there less than the full application;³ but where an application is divided by filing a new one for part of its subject, the new one will date from the date of the old one.⁴ In the absence of other evidence, the date of the application for a particular patent, is taken to be identical with the date of the letters patent itself.⁵ Letters patent, and printed certified Patent Office copies of letters patent, not old enough to have expired, always have upon them, in the space under the title, a memorandum that the application therefor was filed on a particular specified day. But no such memorandum is evidence of the fact it recites. It is not evidence at common law, nor in pursuance of any statute. That section of the Revised Statutes⁶ which gives evidential character to certain certified copies, does not include any such memorandum, because it is no part of the letters patent upon which it is placed, and because it is not a copy of any record, book, paper, or drawing belonging to the Patent Office. It is an indication of what some such record, book, or paper appears to show, but it is not evidence of its own accuracy, nor is it covered by the certificate attached to the document upon which it is placed.

§ 130. Those transactions which constitute an original application for a patent, have thus far constituted the subjects explained in this chapter. While such an application is pending in the Patent Office; the Commissioner of Patents

¹ Revised Statutes, Section 4890.

² Patent Office Rule 62.

³ *Draper v. Wattles*, 3 Bann. & Ard. 618, 1878; *Henry v. Francetown Soap-stone Stove Co.* 5 Bann. & Ard. 108, 1880; *Campbell v. New*

York, 35 Fed. Rep. 504, 1888.

⁴ *Smith & Griggs Mfg. Co. v. Sprague*, 123 U. S. 250, 1887.

⁵ *Worley v. Tobacco Co.* 104 U. S. 342, 1881.

⁶ Revised Statutes, Section 892.

has no authority to furnish a copy of any paper which belongs to it, to any one, except the applicant, or his attorney or agent. And no Patent Office official has any authority to give to any person any information about any pending application; except so far as the rules of the Patent Office authorize the giving of certain limited information specified therein, to those who make or who represent an interfering application.¹

When an application is made by any person, it becomes the duty of the Commissioner to cause an examination thereof, and of the invention covered thereby. If upon such examination, it appears that the applicant is justly entitled to a patent under the law, it is the duty of the Commissioner to issue one to him for that invention.² The statute does not prescribe that the Commissioner shall cause this examination to be made by any particular subordinate, and he may overrule the decision of any subordinate to whom he may have committed the matter.³

The examination may extend not only to the novelty of the invention covered by the application, but also to any other question of fact, upon which the validity of the patent, if granted, may be expected to depend. If the investigation of any such question necessitates the taking of testimony by the Commissioner, he cannot take that testimony in the form of ex-parte affidavits, but must take it in the form of depositions, made upon notice to the applicant to appear and cross-examine the deponents.⁴

§ 131. Whenever, after an examination, any application for a patent is rejected, it is the duty of the Commissioner to notify the applicant thereof, giving him the reasons for such rejection, together with such information and references, as may be useful in judging of the propriety of prosecuting the application, or of altering the specification;

¹ United States *v.* The Commissioner of Patents, 54 Off. Gaz. 267, 1890.

² Revised Statutes, Sections 4893, 4886.

³ Hull *v.* Commissioner of Patents, 7 Off. Gaz. 559, 1875; 8 Off. Gaz. 46, 1875.

⁴ Alteneck's Appeal, 23 Off. Gaz. 269, 1882.

and if, after receiving such a notice, the applicant persists in his request for a patent, with or without altering his specification, it thereupon becomes the duty of the Commissioner to cause a re-examination of the case.¹

§ 132. If, without amending his specification, the applicant persists in his request for a patent, and if the application is again rejected by the primary examiner, to whom the Commissioner referred the case, then the applicant may appeal to the board of examiners-in-chief;² and if unsuccessful there, he may appeal to the Commissioner.³ Such an appeal may be heard by the Commissioner, or by the Assistant Commissioner. If heard by the latter, no appeal lies to the former, and no decision of either can be reopened or set aside by any successor, except for fraud, clerical error apparent on the face of the record, or newly discovered evidence, presented under circumstances which would justify a new trial in an action at law.⁴ If the Commissioner or Assistant Commissioner refuses to grant him a patent, the applicant may appeal to the Court of Appeals of the District of Columbia,⁵ but not to the Secretary of the Interior;⁶ and if the Commissioner refuses to allow that appeal, he may be compelled to do so, by a writ of mandamus, granted by the latter tribunal, upon the petition of the applicant.⁷ No appeal lies to that court from a rejection of an amendment; but only from rejections of specifications as originally filed, or as amended by leave of the Patent Office.⁸

And all appeals must be heard on the case as submitted to the primary examiner.⁹ No appeal, therefore, should be

¹ Revised Statutes, Section 4903; Patent Office Rule 65.-

² Revised Statutes, Section 4909.

³ Revised Statutes, Section 4910.

⁴ *In re Hoeveler & McTighe*, 21 D. C. R. 107, 1892.

⁵ 27 Statutes at Large, Ch. 74, Section 9, p. 436; Revised Statutes, Section 4911; Revised Statutes relating to the District of Columbia,

Section 780.

⁶ *Butterworth v. Hoe*, 112 U. S. 50, 1884.

⁷ *Commissioner of Patents v. Whiteley*, 4 Wallace, 533, 1866.

⁸ *In re Chinnoek*, 21 D. C. R. 594, 1893.

⁹ *Hammond's Appeal*, 2 Off. Gaz. 57, 1872.

taken until the application is in such a condition that the patent will issue, if the decision of the primary examiner is reversed.¹ If that decision is reversed by the board of examiners-in-chief, the primary examiner can require no amendment,² but must pass the case for issue. If the board affirms the decision of the primary examiner, the Commissioner will not reverse the board on any question of fact, unless its decision was clearly against the weight of evidence.³ If the Commissioner affirms the decision of the board, because the patent ought not, in his judgment to issue, he need assign but one reason for that opinion. The applicant cannot demand of him that he pass upon any other question.⁴ And the Commissioner may at any time before the issue of a patent, reverse his own or any other favorable Patent Office action thereon,⁵ except that of a predecessor of himself, or of a predecessor of the Assistant Commissioner,⁶ and may thereupon reject the application.

And any party aggrieved by a decision of the Commissioner of Patents, in any interference case, may appeal therefrom to the Court of Appeals of the District of Columbia.⁷ But such an appeal is confined to the final decision of the Commissioner, on the question of priority only.⁸ And that decision cannot award costs to the successful party.⁹

§ 133. Where an appeal is taken to the Court of Appeals of the District of Columbia, the applicant is required to give notice thereof to the Commissioner, and to file in the Patent Office, within such time as the Commissioner shall appoint, his reasons for the appeal, specifically set forth in writing.¹⁰

¹ Mewes' Appeal, 2 Off. Gaz. 617, 1872.

² Brunner's Appeal, 1 Off. Gaz. 303, 1872.

³ Hazellip v. Richardson, 10 Off. Gaz. 747, 1876.

⁴ Commissioner of Patents v. Whiteley, 4 Wallace, 532, 1866.

⁵ United States v. Butterworth, 3 Mackey, 233, 1884.

⁶ *In re* Hoeveler & McTighe, 21 D. C. R. 107, 1892.

⁷ 27 Statutes at Large, Ch. 74, Section 9, p. 436.

⁸ Westinghouse v. Duncan, 66 Off. Gaz. 1010, 1894; Hisey v. Peters, 71 Off. Gaz. 893, 1895.

⁹ Wells v. Reynolds, 69 Off. Gaz. 1507, 1894.

¹⁰ Revised Statutes, Section 4912.

The court before hearing the appeal, gives notice to the Commissioner of the time and place thereof, and the Commissioner is required, thereupon, to give like notice to all persons who appear to be interested in the case. The applicant is required to lay before the court, at the hearing, certified copies of all the papers in the case, and the Commissioner is required to furnish the court with a full written statement of the grounds of his decision; and at the request of any party interested, or of the court, the Commissioner and the examiners may be examined under oath, in explanation of the principles of the thing for which a patent is demanded.¹

None of the papers which go from the applicant, or from the Commissioner, to the court on an appeal, are kept secret in the court;² though the papers of which they are copies, and all the other papers in the case, are kept concealed from the public in the Patent Office, until the case is finally disposed of there, after the court has rendered its decision.

The court hears the case in a summary way, on the evidence produced before the Commissioner, and confines its revision of the Commissioner's decision, to the points set forth in the applicant's reasons of appeal. Having decided the questions involved, the court gives the Commissioner a certificate of its proceedings and decisions, which, being entered of record in the Patent Office, governs the further proceedings in the case. No such decision, however, precludes any person from contesting the validity of any patent issued in pursuance thereof, in any court wherein that validity may be called in question.³ And no such decision, if adverse to the applicant, deprives the Commissioner of jurisdiction to grant a patent for the same invention, on a later and proper application of the same inventor.⁴

§ 134. Whenever a patent is refused by the Commissioner of Patents, or by the Court of Appeals of the District of

¹ Revised Statutes, Section 4913. Fry v. Quinlan, 13 Blatch. 205,

² *In re* Drawbaugh, 66 Off. Gaz. 1875.
1451, 1894.

⁴ United States v. Colgate, 32

³ Revised Statutes, Section 4914; Fed. Rep. 624, 1884.

Columbia, on appeal from the Commissioner, the applicant may file a bill in equity in any United States Court having or acquiring jurisdiction of the parties.¹ The only way in which any United States Circuit Court can acquire jurisdiction of the Commissioner, is by his voluntary appearance therein and submission thereto,² but the Supreme Court of the District of Columbia has jurisdiction over him, for the purposes of this law, by virtue of his official residence in Washington, in that District.³ The complainant in such a bill may be the inventor-applicant, or, in case of an assignment of the invention, he may be the assignee, because the latter is considered to be an applicant within the meaning of the law on this subject.⁴ If there is no opposing party, a copy of the bill is required to be served on the Commissioner; but the Secretary of the Interior is not a proper party to such a bill.⁵ And the Commissioner is not a proper party,⁶ where there is a party whose interests are those which are adverse to the interests of the complainant;⁷ and in that case the bill may be filed in the Circuit Court of the United States for the judicial district or division wherein that party is an inhabitant; or in the Supreme Court of the District of Columbia, if that party is an inhabitant of that District.⁸

Where either class of these conditions are fulfilled, the court has jurisdiction to adjudge that the applicant is entitled to receive a patent for his invention, as specified in his final claims, or any part thereof, as the facts in the case may appear to be, but not as specified in any claim which the applicant relinquished in the Patent Office, or in any new claim which he never presented there.⁹ And such an

¹ Revised Statutes, Section 4915 and Section 629, ¶ 9.

² *Illingworth v. Atha*, 42 Fed. Rep. 144, 1890.

³ *Butterworth v. Hill*, 114 U. S. 129, 1885.

⁴ *Gay v. Cornell*. 1 Blatch. 508, 1849.

⁵ *Kirk v. Commissioner of Pat-*

ents, 37 Off. Gaz. 451, 1886.

⁶ *Mergenthaler Co. v. Seymour*, 66 Off. Gaz. 1311, 1894.

⁷ *Graham v. Teter*, 25 Fed. Rep. 555, 1885.

⁸ 24 Statutes at Large, Ch. 373, p. 552.

⁹ *Durham v. Seymour*, 71 Off. Gaz. 601, 1895.