

It is the duty of an inventor to describe in his specification each substantially different modification of his invention which he has made.¹

§ 238. The ambiguity produced by a misuse of terms, so as to render the specification unintelligible, will be as fatal as any other defect. Thus, where the directions were to use "sea-salt, or sal-gem, or fossil-salt, or any marine salt," and it appeared that "sal-gem" was the only thing that could be used, and that "fossil-salt" was a generic term, including "sal-gem," as well as other

the specification, then a person will not infringe the patent by doing it. If this were an infringement, it would be an infringement to do that perfectly, which, according to the specification, requires something else to be done to make it perfect. If that be correct, you would prevent a man from having a perfect engine. He says, practically speaking, the difference in the length of the rods would not be very material, the difference being small. But the whole question is small, therefore it ought to have been specified; and if it could not be ascertained fully, it should have been so stated. Now this is the [part to which I was referring, when, in the preliminary observations I addressed to you, I cited the case before Lord Mansfield, on the subject of the introduction of tallow to enable the machine to work more smoothly. There it was held that the use of tallow ought to have been stated in the specification. This small adjustment of these different lengths may have been made for the purpose of making the machine work more smoothly; if so, it is just as much necessary that it should be so stated in the specification, as it was that the tallow should be mentioned. The true criterion is this, has the specification substantially complied with that which the public has a right to require? Has the patentee communicated to the public the manner of carrying his invention into effect? If he has, and if he has given to the public all the knowledge he had himself, he has done that which he ought to have done, and which the public has a right to require from him."

¹ *Sargent et al. v. Carter*, 21 Mon. Law Rep. 651. "He (the defendant in his own patent) describes two devices. If he was then possessed of a third, he was bound to describe that also. Having failed to do so, though I do not doubt he had made machines with a flexible arm before he applied for his first patent, I have strong reason to doubt whether it was capable of effecting the object proposed. It is a circumstance, also, that in the machines now built by the defendant, he has used, not the flexible arm, but a movable or rotating arm. If he first invented a flexible arm, as appears from the evidence in this case, and it accomplished the desired end, why does he not continue to use it? The other modification relied on is placing one end of the arm in a loose socket, where it is held by a pin, which being smaller than the aperture through the arm in which the pin is inserted, allows some play of the arm. But this modification was tried before he took his original patent, and not being therein alluded to or described and claimed in the reissued patent, the same observation applies to this as to the flexible knife-arm."

species of salt, it was held that the use of the term "fossil-salt" could only tend to mislead and to create unnecessary experiments, and therefore that the specification was in that respect defective.¹ In like manner, where the specification directed the use of "the finest and purest chemical white-lead," and it appeared that no such substance was known in the trade by that name, but that white-lead only was known, the specification was held defective.² But a mere mistake of one word for another in writing or printing, if explained by other parts of the patent and specification, as the use of the word "painting" for "printing," is immaterial.³

§ 239. The description of an improvement, when an improvement is the real subject-matter of the patent, should be made in such a manner as will clearly show that the improvement only is claimed by the patentee. If a machine substantially existed before, and the patentee makes an improvement therein, his patent should not comprehend the whole machine in its improved state, but should be confined to his improvement;⁴ and this is true, although the invention of the patentee consists of an addition to the old machine, by which the same effects are to be produced in a better manner, or some new combinations are added, in order to produce new effects.⁵ But if well-known effects are produced by machinery which in all its combinations is entirely new, the subject-matter will be a new machine, and of course the patent will cover the whole machine.⁶

§ 240. If the invention be an improvement, and be claimed as such, but nothing is said of any previous use, of which the use proposed is averred to be an improvement, the patent may incur the risk of being construed as a claim of entire and original discovery. Hence arises the necessity for reciting what had formerly been done, and describing a different mode as the improvement claimed.⁷

¹ *Turner v. Winter*, 1 T. R. 606; *Webs. Pat. Cas.* 77.

² *Sturz v. De La Rue*, *Webs. Pat. Cas.* 83.

³ *Kneass v. The Schuylkill Bank*, 4 Wash. 9.

⁴ *Woodcock v. Parker*, 1 Gallis. 438; *Odiorne v. Winkley*, 2 Gallis. 51; *Barrett v. Hall*, 1 Mas. 447, 476.

⁵ *Whittemore v. Cutter*, 1 Gallis. 478.

⁶ *Ibid.*

⁷ In *Hill v. Thompson*, *Webs. Pat. Cas.* 226, 228, 229, the specification con-

§ 241. But in describing the improvement of a machine in use and well known, it is not necessary to state in detail the structure tained among other things the following claim: "And that my said improvements do further consist in the use and application of lime to iron subsequently to the operations of the blast furnace, whereby that quality in iron from which the iron is called 'cold short,' howsoever and from whatever substance such iron be obtained, is sufficiently prevented or remedied, and by which such iron is rendered more tough when cold. . . . And I do further declare, that I have discovered that the addition of lime or limestone, or other substances consisting chiefly of lime, and free or nearly free from any ingredient known to be hurtful to the quality of iron, will sufficiently prevent or remedy that quality in iron from which the iron is called 'cold short,' and will render such iron more tough when cold; and I do, for this purpose, if the iron, howsoever and from whatever substance the same may have been obtained, be expected to prove 'cold short,' add a portion of lime or limestone, or of the other said substances, of which the quantity must be regulated by the quality of the iron to be operated upon, and by the quality of the iron wished to be produced; and further, that the said lime or limestone, or other aforesaid substances, may be added to the iron at any time subsequently to the reduction thereof, in the blast furnace, and prior to the iron becoming clotted, or coming into nature, whether the same be added to the iron while it is in the refining or in the puddling furnace, or in both of them, or previous to the said iron being put into either of the said furnaces." It appeared that "cold short" had been prevented by the use of lime before; and Dallas, J., said: "The purpose is to render bar iron more tough, by preventing that brittleness which is called 'cold short,' and which renders bar iron less valuable; the means of prevention stated, are the application of lime. In what way, then, is lime mentioned in the patent? The first part of the specification, in terms, alleges certain improvements in the smelting and working of iron, during the operations of the blast furnace; and then, introducing the mention of lime, it states, that the application of it to iron, subsequently to the operation of the blast furnace, will prevent the quality called 'cold short.' So far, therefore, the application of lime is in terms claimed as an improvement, and nothing is said of any previous use, of which the use proposed is averred to be an improvement; it is, therefore, in substance a claim of entire and original discovery. The recital should have stated, supposing a previous use to be proved in the case, that, 'whereas lime has been in part, but improperly, made use of,' &c., and then a different mode of application and use should have been suggested as the improvement claimed. But the whole of the patent must be taken together, and this objection will appear to be stronger as we proceed. And here again, looking through the patent, in a subsequent part of the specification, the word 'discovery' first occurs, and I will state the terms made use of in this respect. 'And I do further declare, that I have discovered that the addition of lime will prevent that quality in iron from which the iron is called "cold short," and will render such iron more tough when cold; and that for this purpose I do add a portion of lime or limestone, to be regulated by the quantity of iron to be operated upon, and by the quality of the iron to be produced, to be added at any time subsequently to the reduction in the blast furnace, and this from whatever substance the iron may be produced, if expected to prove "cold short."' Now

of the entire and improved machine. It is only necessary to describe the improvement, by showing the parts of which it consists, and the effects which it produces.¹ In the case of machinery there is a particular requisition in the statute, designed to ensure fulness and clearness in the specification. "And in case of any machine, he (the patentee) shall fully explain the principle and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and shall particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery."² By the principle of a machine, as used in this clause of the statute, is to be understood the peculiar structure and mode of operation of such machine;³ or, as the statute itself explains it, the character by which it may be distinguished from other inventions. By explaining "the several modes in which he has contemplated the application of that principle," the statute is presumed to direct the patentee to point out all the modes of applying the principle, which he claims to be his own invention, and which he means to have covered by his patent, whether they are those which he deems the best, or are mere formal variations from the modes which he prefers. In other words, he is to state not only the peculiar device or construction which he deems the best for producing the new effect exhibited in his machine, but also all the other modes of producing the same effect, which he means to claim as being substantially applications of the same principle. But in doing this, it is not, as we have seen, necessary for him to enter into a minute description of the mode of producing those variations of structure which he thus claims, in addition to the structure which he prefers. It is sufficient, if he indicates what variations of the application of the principle he claims beyond those which he deems the best.⁴

this appears to be nothing short of a claim of discovery, in the most extensive sense, of the effect of lime applied to iron to prevent brittleness, not qualified and restrained by what follows, as to the preferable mode of applying it under various circumstances, and therefore rendering the patent void, if lime had been made use of for this purpose before, subject to the qualification only of applying it subsequently to the operations in the blast furnace."

¹ Brooks v. Bicknell, 3 M'Lean's R. 250, 261.

² Act of July 4, 1836, § 6.

³ Whittemore v. Cutter, 1 Gallis. 478, 480; Barrett v. Hall, 1 Mas. 447, 470.

⁴ See the observations of Mr. Justice Story, cited *ante*, from the case of Carver v. The Braintree Manuf. Company, 2 Story's R. 432, 440.

§ 242. The duty of determining what the claim of the patentee is involves the necessity of determining whether the description in the specification discloses a patentable subject. The real invention may be a patentable subject; but at the same time it may be claimed in such a way as to appear to be a mere function, or abstract principle, which it will be the duty of the court to declare is not patentable; whereas, if it had been described differently, it would have been seen to be a claim for a principle or function embodied in a particular organization of matter for a particular purpose, which is patentable. The patentee may have been engaged in investigations into the principles of science or the laws of nature. He may have attained a result, which constitutes a most important and valuable discovery, and he may desire to protect that discovery by a patent; but he cannot do so by merely stating his discovery in a specification. He must give it a practical application to some useful purpose, to attain a result in arts or manufactures not before attained, and his specification must show the application of the principle to such a special purpose, by its incorporation with matter in such a way as to be in a condition to produce a practical result.¹ Care should be taken, therefore, in drawing speci-

¹ In the *Househill Company v. Neilson*, Webs. Pat. Cas. 673, 683, Lord Justice Clerk Hope, in the Court of Sessions, made the following clear observations to the jury: "It is quite true that a patent cannot be taken out solely for an abstract philosophical principle,—for instance, for any law of nature, or any property of matter, apart from any mode of turning it to account in the practical operations of manufacture, or the business and arts and utilities of life. The mere discovery of such a principle is not an invention in the patent-law sense of the term. Stating such a principle in a patent may be a prolongation of the principle, but it is no application of the principle to any practical purpose. And without that application of the principle to a practical object and end, and without the application of it to human industry, or to the purposes of human enjoyment, a person cannot in the abstract appropriate a principle to himself.* But a patent will be good, though the subject of the patent consists in the discovery of a great, general, and most comprehensive principle in science or law of nature, if that principle is by the specification applied to any special purpose, so as thereby to effectuate a practical result and benefit not previously attained.

"The main merit, the most important part of the invention, may consist in the conception of the original idea,—in the discovery of the principle in science, or of the law of nature stated in the patent, and little or no pains may have been taken in working out the best manner and mode of the application of the principle to the purpose set forth in the patent. But still, if the principle is stated to be applicable to any special purpose, so as to produce any result previously unknown, in the way and for the objects described, the patent is good. It is no longer an

fications, not to describe the invention as a mode or device for producing an effect, detached from machinery, or from the particular combination or use of matter, by which the effect is produced.¹ The danger in such cases is, that the claim will appear to be a claim for an abstract principle, or for all possible modes of producing the effect in question, instead of being, what alone it should be, a claim for the particular application of the principle which the patentee professes to have made.

Where a party has discovered a new application of some property in nature never before known or in use, by which he has produced a new and useful result, the discovery is the subject of a patent, independent of any peculiar or new arrangement of machinery for the purpose of applying the new property.²

abstract principle. It comes to be a principle turned to account to a practical object, and applied to a special result. It becomes, then, not an abstract principle, which means a principle considered apart from any special purpose or practical operation, but the discovery and statement of a principle for a special purpose, that is, a practical invention, a mode of carrying a principle into effect. That such is the law, if a well-known principle is applied for the first time to produce a practical result for a special purpose, has never been disputed. It would be very strange and unjust to refuse the same legal effect, when the inventor has the additional merit of discovering the principle as well as its application to a practical object. The instant that the principle, although discovered for the first time, is stated, in actual application to, and as the agent of, producing a certain specified effect, it is no longer an abstract principle, it is then clothed with the language of practical application, and receives the impress of tangible direction to the actual business of human life."

¹ *Barrett v. Hall*, 1 Mas. 476.

² *Foote v. Silsby*, 2 Blatch. 260. "There has been some difference of opinion as regards the true construction to be given to the first claim, and it will therefore be necessary for the court to call your attention particularly to this branch of the case. It will be seen that the patentee, after he has set forth, in general terms, that he has made a new and useful improvement in regulating the heat of stoves, has set forth with great particularity two modes by which he adapts this improvement to use, through the arrangement of various machinery; and that then, in this first claim, he claims the application of the expansive and contracting power of a metallic rod, by different degrees of heat, to open and close a damper which governs the admission of air into a stove in which it may be used, by which a more perfect control over the heat is obtained than can be by a damper in the flue. Now, it is the application of the expansive and contracting power of the metallic rod to regulate the heat of the stove by opening and closing the damper, the whole being self-acting in the admission or exclusion of air, that is specifically claimed in this part of the patent; and, according to the construction I give to it and have always given to it, it is a claim independent of any particular arrangement or combination of machinery or contrivance for the purpose of applying the principle to

A claim for a combination of several devices, so combined as to produce a particular result, is not good as a claim for any mode of combining such devices.¹

the regulation of the heat of stoves. I have always supposed, therefore, that the peculiar arrangement or construction of machinery did not enter into this branch of the claim. Where a party has described a new application of some property in nature, never before known or in use, by which he has produced a new and useful result, the discovery is the subject of a patent, independent of any new or peculiar arrangement of machinery for the purpose of applying the new property in nature; and hence the inventor has a right to use any means, old or new, in the application of the new property to produce the new and useful result, to the exclusion of all other means. Otherwise a patent would afford no protection to an inventor in cases of this description; because, if the means used by him for applying his new idea must necessarily be new, then, in all such cases, the novelty of the arrangement used for the purpose of effecting the application would be involved in every instance of infringement, and the patentee would be bound to make out, not only the novelty in the new application, but also the novelty in the machinery employed by him in making the application. (Then citing from *Neilson v. Harford*, the judge (Nelson) continues): Now in this case, as I understand the claim of the patentee, he claims the application of the principle of expansion and contraction in a metallic rod to the purpose of regulating the heat of a stove. This is the new conception which he claims to have struck out; and, although the mere abstract conception would not have constituted the subject-matter of a patent, yet when it is reduced to practice by any means, old or new, resulting usefully, it is the subject of a patent, independently of the machinery by which the application is made. I think, therefore, that in examining the first question presented to you, you may lay altogether out of view the contrivance by which the application of the principle is made, and confine yourselves to the original conception of the idea carried into practice by some means; but whether the means be old or new is immaterial, for although old means be used for giving application to the new conception, yet the patent excludes all persons other than the patentee from the use of those means and of all other means in a similar application." This opinion was sustained on appeal to the Supreme Court, in *Silsby v. Foote*, 20 How. 378, where, however, Judge Grier delivered a strong dissenting opinion, based on the grounds of the decision rendered under the eighth claim of Morse's patent. *O'Reilly v. Morse*, 15 How. 62. Judge Taney, in giving that decision, says: "The difficulty arises on the eighth (claim). It is in the following words: '*Eighth*. I do not propose to limit myself to the specific machinery or parts of machinery described in the specification; the essence of my invention being the use of the motive-power of the electric or galvanic current, which I called electro-magnetism, however developed, for marking or printing intelligible characters, signs, or letters, at any distances, being a new application of that power of which I claim to be first inventor or discoverer.' Now, the provisions of the acts of Congress in relation to patents may be summed up in a few words. Whoever discovers that a certain useful result will be produced in any art, machine, manufacture, or com-

¹ *Case v. Brown*, 2 Wallace, 320.

According to the terms of the Patent Act, in cases where the invention falls within the category of machines, a patent must be granted for it (the machine) and not for a "mode of operation," "principle," "idea," or other abstraction.¹

§ 243. This is well illustrated by several cases. In one, the invention claimed was "the communication of motion from the reed to the yarn-beam, in the connection of the one with the other, which is produced as follows," describing the mode. The patent was sustained, only by construing it as a claim for the specific machinery invented by the patentee for the communication of motion from the reed to the yarn-beam, specially described in the specification. As a claim for all possible modes of communicating the motion, &c., it would have been utterly void.² In another case, a patent "for an improvement in the art of making nails, by means of a machine which cuts and heads the nails at one operation," was seen at once not to be a grant of an abstract principle, but of a combination of mechanical contrivances operating to produce a new effect, and constituting an improvement in the art of making position of matter, by the use of certain means, is entitled to a patent for it; provided he specifies the means used in a manner so full and exact that any one skilled in the science to which it appertains can, by using the means he specifies, without any addition to or subtraction from them, produce precisely the result he describes. And if this cannot be done by the means he describes, the patent is void. And if it can be done, then the patent confers on him the exclusive right to use the means he specifies to produce the result or effect he describes, and nothing more. And it makes no difference, in this respect, whether the effect is produced by chemical agency or combination, or by the application of discoveries or principles in natural philosophy known or unknown before his invention, or by machinery acting altogether on mechanical principles. In either case, he must describe the manner and process as above mentioned, and the end it accomplishes. And any one may lawfully accomplish the same end without infringing the patent, if he uses means substantially different from those described. Indeed, if the eighth claim of the patentee can be maintained, there was no necessity for any specification further than to say that he had discovered that, by using the motive-power of electro-magnetism, he could print intelligible characters at any distance. We presume it will be admitted on all hands that no patent could have issued on such a specification. Yet this claim can derive no aid from the specification filed. It is outside of it, and the patentee claims beyond it. And if it stands, it must stand simply on the ground that the broad terms above mentioned were a sufficient description, and entitled him to a patent in terms equally broad. In our judgment, the act of Congress cannot be so construed."

¹ *Burr v. Duryea*, 1 Wallace, 531, *vid. infra*.

² *Stone v. Sprague*, 1 Story's R. 270.

nails.¹ So, too, where the patentee, in a patent for a machine for turning irregular forms, claimed “the method or mode of operation in the abstract explained in the second article, whereby the infinite variety of forms, described in general terms in this article, may be turned or wrought,” and the second article in his specification explained the structure of a machine by which that mode of operation was carried into effect, and the mode of constructing such a machine so as to effect the different objects to be accomplished, it was held that the specification did not claim an abstract principle or function, but a machine.² So, also, it has been held that the making of wheels on a particular principle which is described in the specification is the subject of a patent;³ and where the plaintiff claimed as his invention “the application of a self-adjusting leverage to the back and seat of a chair, whereby the weight on the seat acts as a counterbalance to the pressure against the back of such chair, as above described,” it was held not to be a claim to a principle, but to an application to a certain purpose and by certain means.⁴

¹ *Gray v. James*, Peters's Circ. C. R. 394.

² *Blanchard v. Sprague*, 2 Story's R. 164, 170. In this case, Mr. Justice Story said: “Looking at the present specification, and construing all its terms together, I am clearly of opinion, that it is not a patent claimed for a mere function; but it is claimed for the machine specially described in the specification; that is, for a function as embodied in a particular machine, whose mode of operation and general structure are pointed out. In the close of his specification, the patentee explicitly states that his ‘invention is described and explained in the second article of his specification, to which reference is made for information of that which constitutes the principle or character of his machine or invention, and distinguishes it, as he verily believes, from all other machines, discoveries, or inventions known or used before.’ Now, when we turn to the second article, we find there described, not a mere function, but a machine of a particular structure, whose modes of operation are pointed out, to accomplish a particular purpose, function, or end. This seems to me sufficiently expressive to define and ascertain what his invention is. It is a particular machine, constituted in the way pointed out, for the accomplishment of a particular end or object. The patent is for a machine, and not for a principle or function detached from machinery.” *Blanchard's Gunstock Turning Factory v. Warner*, 1 Blatch. 259.

³ *Jones v. Pearce*, Webs. Pat. Cas. 123.

⁴ *Minter v. Williams*, Webs. Pat. Cas. 134. “Godson, in pursuance of leave reserved, moved for a nonsuit, on the ground that the specification is for a principle, the plaintiff having summed up the whole of his patent in his claim to the principle, and not to any particular means. Either the plaintiff claims a principle, or he does not; to the former he is not entitled; and as to the latter, the defendant has not used the mechanical means of the plaintiff.” [Lord Lyndhurst,

§ 244. But, on the other hand, a claim to a principle, to be carried into effect by any means, without describing an application of

C. B. : He says, "What I claim as my invention is the application of a self-adjusting leverage to the back and seat of a chair, whereby the weight on the seat acts as a counterbalance to the pressure against the back of such chair, as above described." This is what he claims, a self-adjusting leverage acting in that way. Then he points out the particular mode in which that is effected. The question, therefore, is, whether you have infringed that particular method.] [Alderson, B. : All the witnesses proved that there never had been a self-adjusting leverage in a chair before.] That I admit, and contend that this case is nearly the same as *K. v. Cutler*, (1 Stark. 354 ; Webs. Pat. Cas. 76, n.) [Lord Lyndhurst, C. B. : He says, "I claim the application of a self-adjusting leverage to the back and seat of a chair," so as to produce such an effect.] Yes, my lord, that effect being nothing more than the motion of a lever backwards and forwards, producing such an effect. [Lord Lyndhurst, C. B. : It is the application of a self-adjusting leverage to the back and seat of a chair, he having described what that self-adjusting leverage was before. Any application of a self-adjusting leverage to the back and seat of a chair producing this effect, that the one acts as a counterbalance to the pressure against the other, would be an infringement of this patent, but nothing short of that.] [Alderson, B. : The difference between this chair and all others, as it appeared in evidence, was very well described by Mr. Brunton ; he says, this chair acts (looking at the one you produced), — this chair acts, but not by a self-adjusting leverage. By pressing on the back the seat rises, and *vice versa*, by pressing on the seat the back rises ; that is what he calls a self-adjusting leverage. In the other case, you might sit forever, and the back would never rise.] The plaintiff, by his specification, has appropriated to himself a first principle in mechanics, viz., the lever, and therefore nobody else may use it. [Lord Lyndhurst, C. B. : It is not a leverage only, but the application of a self-adjusting leverage ; and it is not a self-adjusting leverage only, but it is a self-adjusting leverage producing a particular effect, by the means of which the weight on the seat counterbalances the pressure against the back.] This is nothing more than one of the first principles of mechanics. [Parke, B. : But that, not being in combination before, can that not be patented ? It is only for the application of a self-adjusting leverage to a chair, — cannot he patent that ? He claims the combination of the two, no matter in what shapes or way you combine them ; but if you combine the self-adjusting leverage, which he thus applies to the subject of a chair, that is an infringement of his patent.] What is the combination ? [Lord Lyndhurst, C. B. : Why the application of a self-adjusting leverage producing a particular effect. He says, I do not confine myself to the particular shape of this lever.] If your lordships translate this to mean machine, of course I have no further argument to urge. [Lord Lyndhurst, C. B. : It is every machine consisting of a self-adjusting leverage producing that particular effect in a chair.] That is the extent to which I am putting it. If your lordships say you can, in favor of the patentee, so read it, that it is the machine and the combination only that the plaintiff has claimed, then I should be wasting your lordships' time if I argued the matter further. [Lord Lyndhurst, C. B. : Substantially that combination.] [Parke, B. : Therefore a chair made upon that principle which you have directed to be constructed

the principle by some means, is a claim to the abstract principle. As, where a specification stated that "it is claimed as new, to cut ice of a uniform size by means of an apparatus worked by any other power than human," it was held that this claim to the art of cutting ice by means of any other power than human was utterly void.¹ It is, therefore, essential that the specification should describe some practical mode of carrying the principle into effect; and then the subject-matter will be patentable, because it will be, not the principle itself, but the mode of carrying it into effect; and on the question of infringement it will be for the jury to say whether another mode of carrying it into effect is not a colorable imitation of the mode invented by the patentee.² Hence a claim, construed to include every improvement in which the motive-power is the electric or galvanic current. And the result is, the marking or printing of intelligible characters at a distance, is broader than the patent laws allow, and invalid.³

§ 245. This being the case, the question next arises whether it is necessary, after having described the application of the principle by some mechanical contrivance, or other arrangement of matter, to claim in the specification all the other forms of apparatus, or

here, would be an infringement of his patent, that is, the application of a self-adjusting leverage to a chair, such a one as you have produced here to-day.] [Lord Lyndhurst, C. B. : It has the particular effect.] Rule refused.

¹ *Wyeth v. Stone*, 1 Story's R. 273, 285.

² In *Neilson v. Harford*, Webs. Pat. Cas. 342, Alderson, B. said: "I take the distinction between a patent for a principle and a patent which can be supported, is, that you must have an embodiment of the principle in some practical mode described in the specification of carrying the principle into actual effect, and then you take out your patent, not for the principle, but for the mode of carrying the principle into effect. In Watt's patent, which comes the nearest to the present of any you can suggest, the real invention of Watt was, that he discovered that by condensing steam in a separate vessel a great saving of fuel would be effected by keeping the steam cylinder as hot as possible, and applying the cooling process to the separate vessel, and keeping it as cool as possible, whereas, before, the steam was condensed in the same vessel; but then Mr. Watt carried that practically into effect by describing a mode which would effect the object. The difficulty which presses on my mind here is, that this party has taken out a patent, in substance like Watt's, for a principle, that is, the application of hot air to furnaces, but he has not practically described any mode of carrying it into effect. If he had, perhaps he might have covered all other modes, as being a variation."

³ *O'Reilly v. Morse*, 15 How. 62. For an elaborate discussion of this claim, see chapter on Extent of Principle.

modifications of matter, by which the principle may also be applied in order to produce the same beneficial effect, or whether the patent does not cover all these, without particular description, by covering the application of the principle. When we consider that the subject-matter of such a patent is the application of the principle effected by means of some machinery, or other arrangement, it will be apparent that the reason why the patentee is bound to describe some machinery or practical method of making the application, is in order to show that he has actually applied the principle, and to enable others to do so after him. But the real subject of the patent is the practical application of the principle; and hence, although the means by which the patentee has made that application must be described, in order to show that he has done what he says he has done, and to enable others to do what he says can be done, yet a variation of the means and machinery, if it produces the same beneficial effect, that is, is the same application of the same principle, does not show that the party making such variation has not infringed the patent, by making use of that which exclusively belonged to another, viz., the application of the principle to produce a particular effect.

§ 246. Examples will best illustrate this distinction. Minter's patent, for a self-adjusting chair, which has been already referred to, was a case of the application of a well-known principle, that of the lever, for the first time applied to a chair. He made no particular claim of shape or form for the construction of the chair, but showed that if a lever was applied to the back of the chair, so that the weight of the seat would act as a counterpose to the back, in whatever posture the occupant might be sitting or reclining, a self-adjusting chair would be obtained. Now, there might be various modes of constructing a chair on this principle; but as the constructing of chairs on this principle was the true subject of the patent, the court held the making of any chair upon the same principle of a self-adjusting leverage, was an infringement.¹

§ 247. Neilson's patent involved the principle of blowing furnaces, for the smelting of iron, with a blast of hot air, instead of cold, and he applied that principle by finding out a mode by which air may be introduced in a heated state into the furnace, viz., by

¹ Minter v. Wells, Webs. Pat. Cas. 134.

heating the air in a closed vessel between the blowing apparatus and the furnace. The specification, after stating that the air, heated up to red heat may be used, but that it is not necessary to go so far to produce a beneficial effect, proceeded to state that the size of the receptacle would depend on the blast necessary for the furnace, and gave directions as to that. It then added, "The shape of the receptacle is immaterial to the effect, and may be adapted to local circumstances." After great consideration, it was held that the word "effect" was not meant to apply to the degree of heat to be given to the air in the heating receptacle, but that any shape of the heating receptacle would produce the beneficial effect of passing heated air into the furnace. This construction settled what the patent was for, viz., the application of the principle of blowing with hot air, by means of a vessel in which the air should be heated on its passage from the blowing apparatus to the furnace. Consequently the subject-matter embraced all the forms of apparatus by which the application of the same principle could be effected.¹

¹ Neilson v. Harford, Webs. Pat. Cas. 295, 369. The same patent was litigated in Scotland, and, upon the point of the generality of the claim as regards the forms of the apparatus, Lord Justice Clerk Hope made the following observations to the jury: "Is it any objection, then, in the next place, to such a patent, that terms descriptive of the application to a certain specified result include every mode of applying the principle or agent so as to produce that specified result, although one mode may not be described more than another, — although one mode may be infinitely better than another, — although much greater benefit would result from the application of the principle by one method than by another, — although one method may be less expensive than another? Is it, I next inquire, an objection to the patent, that, in its application of a new principle to a certain specified result, it includes every variety of mode of applying the principle according to the general statement of the object and benefit to be attained? You will observe, that the greater part of the defenders' case is truly directed to this objection. This is a question of law, and I must tell you distinctly, that this generality of claim, that is, for all modes of applying the principle to the purpose specified, according to or within a general statement of the object to be attained, and of the use to be made of the agent to be so applied, is no objection whatever to the patent. That the application or use of the agent for the purpose specified may be carried out in a great variety of ways, only shows the beauty and simplicity and comprehensiveness of the invention. But the scientific and general utility of the proposed application of the principle, if directed to a specified purpose, is not an objection to its becoming the subject of a patent. That the proposed applications may be very generally adopted in a great variety of ways, is the merit of the invention, not a legal objection to the patent.

"The defenders say, you announce a principle that hot air will produce heat

§ 248. In this case, it was also laid down by Parke, B., to the jury, that the omission to mention in the specification anything in the furnace; you direct us to take the blast without interrupting, or rather without stopping it, to take the current in blast, to heat it after it leaves the blast, and to throw it hot into the furnace. But you tell us no more, — you do not tell us how we are to heat it. You say you may heat in any way, in any sort of form of vessel. You say, I leave you to do it how you best can. But my application of the discovered principle is, that if you heat the air, and heat it after it leaves the blowing engine, (for it is plain you cannot do it before), you attain the result I state: that is the purpose to which I apply the principle. The benefit will be greater or less; I only say, benefit you will get, I have disclosed the principle; I so apply it to a specified purpose by a mechanical contrivance, viz., by getting the heat when in blast, after it leaves the furnace; but the mode and manner and extent of heating I leave to you, and the degree of benefit, on that very account, I do not state. The defenders say, the patent, on this account, is bad in law. I must tell you, that taking the patent to be of this general character, it is good in law. I state to you the law to be, that you may obtain a patent for a mode of carrying a principle into effect; and if you suggest and discover, not only the principle, but suggest and invent how it may be applied to a practical result by mechanical contrivance and apparatus, and show that you are aware that no particular sort or modification or form of the apparatus is essential in order to obtain benefit from the principle, then you may take your patent for the mode of carrying it into effect, and you are not under the necessity of describing and confining yourself to one form of apparatus. If that were necessary, you see, what would be the result? Why, that a patent could hardly ever be obtained for any mode of carrying a newly discovered principle into practical results, though the most valuable of all discoveries. For the best form and shape or modification of apparatus cannot, in matters of such vast range, and requiring observation on such a great scale, be attained at once; and so the thing would become known, and so the right lost, long before all the various kinds of apparatus could be tried. Hence you may generally claim the mode of carrying the principle into effect by mechanical contrivance, so that any sort of apparatus applied in the way stated will, more or less, produce the benefit, and you are not tied down to any form.

“The best illustration I can give you — and I think it right to give you this illustration — is from a case as to the application of that familiar principle, the lever to the construction of chairs, or what is called the self-adjusting lever. (Minter's Patent, Webs. Pat. Cas. 126 and 134.) This case, which afterwards came under the consideration of the whole court, was tried in the Court of Exchequer during the presidency of Lord Lyndhurst. The case was as to the patent reclining chair, the luxury of which some of you may have tried; it had a self-adjusting lever, so that a person sitting or reclining, — and I need not tell you what variety of postures can be assumed by a person reclining in a chair, — in whatever situation he placed his back, there was sufficient resistance offered through means of the lever to preserve the equilibrium. Now anything more general than that I cannot conceive; it was the application of a well-known principle, but for the first time applied to a chair. He made no claim to any particular parts of the chair, nor did he prescribe any precise mode in which they

which the patentee knows to be necessary for the beneficial enjoyment of the invention is a fatal defect; but the omission to mention something which contributes only to the degree of benefit, provided the apparatus would work beneficially and be worth adopting, is not a fatal defect.¹

§ 249. As it is the duty of the court to determine on the construction of the patent, what the subject-matter is, it is often necessary to decide whether the patentee claims a combination of several things, or the distinct invention of several things, or both. General principles cannot be laid down for the determination of questions of this kind, depending exclusively on the particular facts. There is, however, one circumstance that will always be decisive in construing a patent against a claim for the several things described in the specification, and that is, that one or more of them is not new. If this turns out to be the case, the question may then be, whether the patent can be sustained for the combination.² In determining this question it is to be observed, that a patent for a combination of three things cannot at the same time be a patent for a combination of any two of them. If the subject-

should be made; but what he claimed was a self-adjusting lever to be applied to the back of a chair, where the weight of the seat acts as a counterpoise to the back, in whatever posture the party might be sitting or reclining. Nothing could be more general. Well, a verdict passed for the patentee, with liberty to have it set aside; but Lord Lyndhurst and the rest of the court held, that this was not a claim to a principle, but to the construction of a chair on this principle, in whatever shape or form it may be constructed. (*Minter v. Wells*, Webs. Pat. Cas. 134.) Just so as to the hot blast, only the principle is also new. The patentee says, 'I find hot air will increase the heat in the furnace, that a blast of hot air is beneficial for that end.' Here is the way to attain it, 'heat the air under blast, between the blowing apparatus and the furnace; if you do that, I care not how you may propose to do it, I neither propose to you nor claim any special mode of doing it; you may give the air more or less degrees of heat, but if you so heat it, you will get by that contrivance the benefit I have invented and disclosed, more or less, according to the degree of heat.' This is very simple, very general, but its simplicity is its beauty and its practical value,—not an objection in law." *The Househill Company v. Neilson*, Webs. Pat. Cas. 684, 686.

¹ *Neilson v. Harford*, Webs. Pat. Cas. 317.

² For some of the cases where the question has been between a combination or a claim for several distinct things, see *Howe v. Abbott*, 2 Story's R. 190; *Ames v. Howard*, 1 Sumner, 482; *Prouty v. Ruggles*, 16 Peters, 336; s. c. *Prouty v. Draper*, 1 Story, 568; *Pitts v. Whitman*, 2 Story's R. 609; *Carver v. Braintree Manuf. Company*, 2 Story's R. 482; *Buck v. Hermance*, 1 Blatch. 398.

matter is the combination of any given number of things, or processes, or parts, no portion of the combination less than the whole can be considered at the same time as being also the subject-matter.¹

For instance, where letters-patent were granted for "improvements in agricultural machines," and the specification described them as for "the constructing and placing of holding fingers, cutting blades, and gathering reels respectively, in a manner described, and the embodiment of these parts so constructed and placed, all or any of them, in machines for reaping purposes," it was held that the patent was for the combination, and that the use of a knife alone, similar to that described in the patented machine, was not an infringement.²

§ 250. The rule which we have thus endeavored to illustrate, which requires the patentee so to describe his invention as to enable the public to know what his claim is, of course imposes upon him the duty of not misleading the public, either by concealing anything material to the invention, or by adding anything not necessary to be introduced. The ambiguity which we have been considering in the preceding pages may be produced involuntarily; but there is a special provision of the statute aimed at the voluntary concealment or addition of anything material. The statute enacts it as one of the defences to an action on a patent, that the specification "does not contain the whole truth relative to his invention or discovery, or that it contains more than is necessary to produce the described effect; which concealment or addition shall fully appear to have been made for the purpose of deceiving the public."³ This defence will be made good, when it appears that the patentee fraudulently concealed something that he knew to be material to the practice of his invention, or fraudulently added something which he knew was not useful, material, or necessary, at the time when he prepared his specification. If it was subsequently discovered not to be useful, material, or necessary, his patent will not be affected by it.⁴

¹ *Prouty v. Draper*, 1 Story, 568, 572; s. c. *Prouty v. Ruggles*, 16 Peters, 336; *Winans v. Schenectady & Troy R. R.*, 2 Blatch. 279.

² *McCormick v. Gray*, 4 Law Times, N. S. 832.

³ Act of July 4, 1846, § 15.

⁴ See *post*, Chapter on Infringement, and also Chapter on Action at Law.

§ 251. II. The second rule for preparing a specification is,
To describe the invention in such a manner as to enable the public to practise it, from the specification alone.

§ 252. The statute requires the patentee to describe “the manner and process of making, constructing, using, and compounding his invention or discovery, in such full, clear, and exact terms, avoiding unnecessary prolixity, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of any machine, he shall fully explain the principle and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and shall particularly specify and point out the part, improvement, or combination which he claims as his own invention or discovery.”

§ 253. We have seen that the question whether a specification answers this requisite of the statute, is a question of fact for the jury; and although it is not necessary that technical terms should be made use of in a specification, they often are made use of and often require to be explained by evidence. In judging of a specification, therefore, a distinction must be taken between that sort of ambiguity which a person unacquainted with technical terms would encounter, and the ambiguity which might appear to a person skilled in the particular art. It is not necessary that the specification should contain an explanation level with the capacity of every person, which would often be impossible.¹ The statute allows the patentee to address himself to persons of competent skill in the art, and it requires him to use such full, clear, and exact terms as will enable that class of persons to reproduce the thing described from the description itself. It is, therefore, important to ascertain what the rules of construction are, which define what will constitute an ambiguity or uncertainty to artists and persons skilled in the subject.

§ 254. And *first*, with regard to the persons whose judgment and apprehension are thus appealed to: they are not those who possess the highest degree of skill or knowledge in the particular

¹ Per Story, J., in *Lowell v. Lewis*, 1 Mas. 182.

art or science to which the subject-matter belongs, nor are they day-laborers; they are practical workmen, or persons of reasonably competent skill in the particular art, science, or branch of industry. If persons of the highest skill were those whom the law has in contemplation, the object of a specification which is to enable competent persons to reproduce the thing patented, without making experiments, inventions, or additions of their own, could not generally be answered.¹

§ 255. *Secondly*, as to the application of their knowledge and skill, by such persons, to the understanding and carrying out of the description given by the patentee. The description must be such as will enable persons of competent skill and knowledge to construct or reproduce the thing described, without invention or addition of their own, and without repeated experiments.² Thus it has been held, that any material alteration to be made in existing apparatus or machinery must be stated, and not left to be supplied by the workman; as, with reference to the materials employed, or their form, or the speed of the parts, or their relative dimensions, where these are material.³ So, too, the specification is insufficient, if information must be derived from experiments, or from seeing others make the thing described;⁴ or as it has also

¹ *The King v. Arkwright*, Dav. Pat. Cas. 106; *Webs. Pat. Cas.* 64; *Lowell v. Lewis*, 1 Mas. 182; *Harmar v. Piayne*, 11 East, 101. And see particularly the observations of M. Baron Parke, cited *post*, from *Neilson v. Harford*.

² *The King v. Arkwright*, *Webs. Pat. Cas.* 66, 67, 69, 70. It will not do to rely for the correction of errors on the ordinary knowledge of competent workmen. In *Neilson v. Harford*, the specification contained a particular passage, which the jury found to be untrue; but they also found that any workman of competent knowledge of the subject would correct the statement. Parke, B.: "Nor do we think that the point contended for by Sir William Follett, that if a man acquainted well with the process of heating air were employed, this misstatement would not mislead him, would at all relieve the plaintiffs from the difficulty; for this would be to support the specification by a fresh invention and correction by a scientific person, and no authority can be found that in such a case a specification would be good. To be valid, we think it should be such as, if fairly followed out by a competent workman, without invention or addition, would produce the machine for which the patent is taken out, and that such machine so constructed must be one beneficial to the public." *Webs. Pat. Cas.* 37.

³ *Ibid.* p. 67.

⁴ *Ibid.* p. 67, 70, 71. Upon this point, Buller, J., said: "Immison says, that from the specification he should have made a parallel cylinder, and not a spiral one, but this is the one used by the defendant. As to the rollers, it does not ap-

been said, if it requires the solution of a problem.¹ And, generally, a specification, to be valid, must be such as, when fairly pear from the specification some were to go faster than others; from the specification, without other sources, it is impossible to say how they should be made, as there is no scale or plan to work by. A roller is necessary to the feeder to give regular direction to the work; it will not answer without it. From the knowledge he has now, he should add a roller if he was directed to make the machine. But that does not prove the specification to be sufficient, because, if a man, from the knowledge he has got from three trials, and seeing people immediately employed about it, is able to make use of it, it is his ideas improve the plan, and not the merit of the specification; if he makes it complete, it is his ingenuity, and not the specification of the inventor. . . . Upon the other hand, several respectable people are called, upon the part of the defendant, who say they could do it, but there is this difference in their description; most, if not every one of them, have looked at and seen how the machines were worked by the defendant, and have got their knowledge by other means, and not from the specification and plan alone; besides, they admit the manner the defendant works it is not consistent with the plan laid down, particularly as to the cylinder, a particular part of the business, for Moore says, this upon the face of it must be taken to be a parallel, whereas that which plainly appears to be used is a spiral; besides, after all this, they have spoken most of them in a very doubtful way, particularly Mr. Moore, who qualified his expression in the way which I have stated to you, and the others qualifying their expressions, saying they think upon the whole they could do it. Suppose it perfectly clear they could with the subsequent knowledge they had acquired, yet, if it be true that sensible men, that know something of this particular business, and mechanics in general, cannot do it, it is not so described as is sufficient to support this patent."

¹ In *Morgan v. Seaward*, Webs. Pat. Cas. 170, 174, Alderson, B., said: "If the invention can only be carried into effect by persons setting themselves a problem to solve, then they who solve the problem become the inventors of the method of solving it; and he who leaves persons to carry out his invention by means of that application of their understanding, does not teach them in his specification, that which, in order to entitle him to maintain his patent, he should teach them, the way of doing the thing, but sets them a problem, which being suggested to persons of skill, they may be able to solve. That is not the way in which a specification ought to be framed. It ought to be framed so as not to call on a person to have recourse to more than those ordinary means of knowledge (not invention) which a workman of competent skill in his art and trade may be presumed to have. You may call upon him to exercise all the actual existing knowledge common to the trade, but you cannot call upon him to exercise anything more. You have no right to call upon him to tax his ingenuity or invention. Those are the criteria by which you ought to be governed, and you ought to decide this question according to those criteria. You are to apply those criteria to the case now under consideration, and you should apply them without prejudice, either one way or the other, for it is a fair observation to make, that both parties here stand, so far as this observation is concerned, on a footing of perfect equality. The public, on the one hand, have a right to expect and require that the specification shall be

followed out by a competent workman, without invention or addition, the object of the patent may be obtained.¹

fair, honest, open, and sufficient; and, on the other hand, the patentee should not be tripped up by captious objections, which do not go to the merits of the specification. Now, applying those criteria to the evidence in the cause, if you shall think that this invention has been so specified that any competent engineer, having the ordinary knowledge which competent engineers possess, could carry it into effect by the application of his skill, and the use of his previous knowledge, without any inventions on his part, and that he could do it in the manner described by the specification, and from the information disclosed in the specification, then the specification would be sufficient. If, on the other hand, you think that engineers of ordinary and competent skill would have to set themselves a problem to solve, and would have to solve that problem before they could do it, then the specification would be bad." See also *Gray v. James*, 1 Pet. C. C. R. 394, 476.

¹ In *Neilson v. Harford*, Webs. Pat. Cas. 295, 313, Parke, B., instructed the jury as follows: "Now, then, understanding the meaning of this specification to be the sense I have given to it, that he claims as his invention a mode of heating the blast between the blowing apparatus and the furnace, in a vessel exposed to the fire, and kept to a red heat, or nearly (and which description I think sufficient), of the size of a cubic foot for a smith's forge, or the other size mentioned, or of any shape, these questions will arise for your decision. It is said that, understanding it in that sense, the patent is void, because there are no directions given for any mode of constructing the instrument. But understanding the patent in that sense, it seems to me, that if you should be of opinion that a person of competent skill (and I will explain to you what I mean by that) would nevertheless construct such a vessel as would be productive of some useful and beneficial purpose in the working of iron, that the patent nevertheless is good, though no particular form of vessel is given. Then it is to be recollected that this claim is a patent right, — a right of heating in any description of vessel; and in order to maintain that right, it is essential that the heating in any description of vessel, either the common form, the smith's forge, the cupola, or the blast furnace, that it should be beneficial in any shape you may choose for all those three purposes. Now, then, I think, therefore, that this is correctly described in the patent, and if any man of common understanding and ordinary skill and knowledge of the subject, and I should say in this case that the subject is the construction of the blowing apparatus, such a person as that is the person you would most naturally apply to in order to make an alteration of this kind, if you are of opinion, on the evidence, that such a person as that, of ordinary skill and knowledge of the subject (that is, the construction of the old blowing apparatus), would be able to construct, according to the specification alone, such an apparatus as would be an improvement, that is, would be productive practically of some beneficial result, no matter how great, provided it is sufficient to make it worth while (the expense being taken into consideration) to adapt such an apparatus to the ordinary machinery in all cases of forges, cupolas, and furnaces, where the blast is used; in that case, I think the specification sufficiently describes the invention, leaving out the other objection (to which I need not any further direct your attention) that there is not merely a defective statement in the specification, unless those condi-

For example, a specification which states that part of the process consists in cutting the hides into thin slices, is valid, although it does not state whether the hides should be wet or dry.¹

§ 256. But slight defects in a specification will sometimes prevent the object of the patent from being obtained by any competent person who may undertake to apply it, and will therefore render the patent void, because they create a necessity for the exercise of inventive power on the part of the person who thus undertakes to apply the description. As the omitting to state the use of tallow, which the patentee employed for facilitating the manufacture of steel trusses;² or, in a patent medicine, stating the ingredients without stating the proportions.³ If anything be omitted which gives an advantageous operation to the thing invented, it will vitiate the patent; as the omission to state the use of a material, *aqua-fortis*, which the patentee used himself for obtaining the effect more rapidly;⁴ for the patentee is bound to give the most advantageous mode known to him, and any circumstance conducive to the advantageous operation; otherwise he does not pay the price for his monopoly, because he does not give the public the benefit of all that he knows himself.⁵

sions were complied with, but there is a wrong statement. But leaving out the wrong statement for the present, and supposing that it was not introduced, then if, in your opinion, such a person as I have described — a man of ordinary and competent skill — would erect a machine which would be beneficial in all those cases, and be worth while to erect; in that case it seems to me that this specification is good, and the patent, so far as relates to this objection, will be good. It is to be a person only of ordinary skill and ordinary knowledge. You are not to ask yourselves the question, whether persons of great skill, — a first-rate engineer, or a second-class engineer, as described by Mr. Farey, — whether they would do it; because generally those persons are men of great science and philosophical knowledge, and they would upon a mere hint in the specification probably invent a machine which should answer the purpose extremely well; but that is not the description of persons to whom this specification may be supposed to be addressed, — it is supposed to be addressed to a practical workman, who brings the ordinary degree of knowledge and the ordinary degree of capacity to the subject; and if such a person would construct an apparatus that would answer some beneficial purpose, whatever its shape was, according to the terms of this specification, then I think that this specification is good, and the patent may be supported so far as relates to that.”

¹ Wallington v. Dale, 16 E. L. & Eq. 584.

² Liardet v. Johnson, Webs. Pat. Cas. 53.

³ Ibid. 54, note.

⁴ Wood v. Zimmer, Webs. Pat. Cas. 82.

⁵ Morgan v. Seaward, Webs. Pat. Cas. 175, 182. See the remarks of Alder-

§ 257. So, too, if a specification directs the use of a substance, which, as generally known, contains foreign matter, the presence of which is positively injurious, and does not show any method of removing that foreign matter, or refer to any method generally known, or state how the substance in a proper state can be procured, the specification will be defective.¹

son, B., cited *ante*. See also *The King v. Arkwright*, Webs. Pat. Cas. 66; *Walton v. Bateman*, *Ibid.* 622; *Turner v. Winter*, *Ibid.* 81, where the employment of cheaper materials than those mentioned in the specification, or the insertion of materials which would not answer, were said to be sufficient to avoid a patent.

¹ *Derosne v. Fairie*, Webs. Pat. Cas. 154, 162. In this very instructive case, Lord Abinger, C. B., said: "Upon the main point, however, that respecting the bituminous schistus, nothing that I have heard has removed my original impression, that there was no evidence to show that this process, carried on with bituminous schistus, combined with any iron whatsoever, would answer at all. The plaintiff himself has declared, that in that bituminous schistus, which he himself furnished, the whole of the iron was extracted; and it appears, that it was admitted by the counsel, that the presence of iron would not only be disadvantageous, but injurious. Thus, then, it appearing by the evidence, that in all the various forms in which the article exists in this country, sulphuret of iron is found, and the witnesses not describing any known process by which it can be extracted, it appears to me that the plaintiff ought to prove one of two things, — either that the sulphuret of iron in bituminous schistus is not so absolutely detrimental as to make its presence disadvantageous to the process (in which case this patent would be good), or that the process of extracting the iron from it is so simple and well known that a man may be able to accomplish it with ease. As the bituminous schistus which was procured and used was exclusively that which was furnished by the plaintiff, not in its original state, but after it had undergone distillation, and had been made into charcoal in a foreign country, and as in that stage of its preparation it could not be discovered, by examining it, whether it was made from one substance or another (the residuum, after distillation, of almost every matter, vegetable as well as animal, being a charcoal mixed more or less with other things), then there is only the plaintiff's statement to prove that the substance which was furnished by him and used was charcoal of bituminous schistus. It appeared, also, that he had declared to one of the witnesses that he had extracted all the iron from the substance so sent, and that it also underwent another process. I am, therefore, of opinion, that without considering whether or not the patent would be avoided by the process requiring the use of means to extract the iron from the bituminous schistus, which were kept secret by the patentee, he has not shown in this case, that what he has described in the patent could be used as so described, without injury to the matter going through the process. Under all these circumstances, I think that the plaintiff ought to have given some evidence to show that bituminous schistus, in the state in which it is found and known in England, could be used in this process with advantage, and as he has not done that, the defendants are entitled to a nonsuit; but, at the same time, as it is alleged that the plaintiff may supply the defect of proof as to the schistus on a new

§ 258. In like manner, a specification will be defective if an article be described by a particular name, the patentee knowing that the requisite article cannot ordinarily be procured under the name by which it is described in the specification, and it be not stated where it may be procured; because the public have not that full and precise information which they have a right to require.¹ A specification will also be defective which states that the manner in which a power is to be applied varies with the circumstances in some measure, without showing in what the improvement consists, as distinguished from all former modes of doing the same thing.² If obscure terms be employed for the sake of concealment, so as to induce the belief that elaborate processes are necessary, when the simplest will succeed, the specification is bad;³ and if a patentee states that he prefers a certain material, having ascertained that no other will answer, he misleads the public.⁴

Where a general term, acids, is used, and evidence shows that some of the varieties of that class will not answer, the specification is faulty. Such term will however be understood as embracing only such acids as are generally known and used, and not obscure acids, existing only in the chemist's laboratory. The inventor should confine his specification to substances which he *knows* will answer, leaving the question of infringement by substances impliedly contained in the description or subsequently discovered as one of colorable imitation, to be passed upon by a jury.

Thus, where the patentee in his description said: "Dissolve one pound of strong alkali (for instance, American potash) in one gallon of water; this solution is to be neutralized with *acid* (sulphuric is *best* for the purpose), &c., and on the trial it was proved that a well-known acid, nitric, would not answer, the specification was held insufficient.⁵

§ 259. The rule, however, which forbids a patentee to leave the public to find out by experiment how to apply his discovery or invention by other evidence, we are desirous that the patent, if a good one, should not be affected by our judgment, and think it right to direct a new trial on the terms which have been stated."

¹ *Sturz v. De La Rue*, Webs. Pat. Cas. 83.

² *Sullivan v. Redfield*, Paine's C. C. R. 441, 450, 451.

³ *Savory v. Price*, Webs. Pat. Cas. 83.

⁴ *Crompton v. Ibbotson*, Ibid. 83.

⁵ *Stevens v. Keating*, 2 Webs. Pat. Cas. 172.

vention, is subject to one important limitation. If, for instance, the specification of a patent for a composition of matter is so drawn, that no one can use the invention without first ascertaining by experiment the exact proportion of the different ingredients required to produce the intended result, the patent will be void. But it has been determined by the Supreme Court of the United States, that if, in such a specification, the patentee gives a certain proportion as the general rule applicable to the ordinary state of the ingredients, he may, without the risk of having his patent declared void by the court, for vagueness and uncertainty, state other and variable proportions as exceptions to the rule, applicable to the varying states of the ingredients, although the precise proportion adapted to a given state of the ingredients, other than the usual state, can only be ascertained by computing it from the general rule, after the particular state of the ingredients is ascertained. In such cases it is for the jury to decide, on the evidence of experts, whether the general rule given is susceptible of application, and whether it furnishes the means of determining the proportions to be used, in the excepted cases, by the exercise of the ordinary knowledge and skill of the workman.¹ A specification which in-

¹ *Wood v. Underhill*, 5 How. S. C. R. 1, 3, 4. The specification in this case was as follows: "Be it known that I, the said James Wood, have invented a new and useful improvement in the art of manufacturing bricks and tiles. The process is as follows: take of common anthracite coal, unburnt, such quantity as will best suit the kind of clay to be made into brick or tile, and mix the same, when well pulverized, with the clay before (it) is moulded; that clay which requires the most burning will require the greatest proportion of coal dust; the exact proportion, therefore, cannot be specified, but, in general, three fourths of a bushel of coal dust to one thousand brick will be correct. Some clay may require one-eighth more, and some not exceeding a half-bushel. The benefits resulting from this composition are the saving of fuel and the more general diffusion of heat through the kiln, by which the contents are more equally burned. If the heat is raised too high, the brick will swell, and be injured in their form. If the heat is too moderate, the coal dust will be consumed before the desired effect is produced. Extremes are therefore to be avoided. I claim as my invention the using of fine anthracite coal or coal dust with clay, for the purpose of making brick and tile aforesaid, and for that only claim letters-patent from the United States." Mr. Ch. Justice Taney, delivering the judgment of the court, said: "The plaintiff claims that he has invented a new and useful improvement in the art of manufacturing bricks and tiles, and states his invention to consist in using fine anthracite coal or coal dust with clay, for the purpose of making brick or tile, and for that only he claims a patent. And the only question presented by the record is, whether his description of the relative proportions of coal dust and clay, as given

tentionally creates in the mind of one applying it any doubt as to the relative proportions of the ingredients is defective, for the in his specification, is upon the face of it too vague and uncertain to support a patent. The degree of certainty which the law requires is set forth in the act of Congress. The specification must be in such full, clear, and exact terms as to enable any one skilled in the art to which it appertains to compound and use it without making any experiments of his own. In patents for machines the sufficiency of the description must, in general, be a question of fact to be determined by the jury. And this must also be the case in compositions of matter where any of the ingredients mentioned in the specification do not always possess exactly the same properties in the same degree. But when the specification of a new composition of matter gives only the names of the substances which are to be mixed together, without stating any relative proportion, undoubtedly it would be the duty of the court to declare the patent to be void. And the same rule would prevail where it was apparent that the proportions were stated ambiguously and vaguely. For in such cases it would be evident, on the face of the specification, that no one could use the invention without first ascertaining by experiment the exact proportion of the different ingredients required to produce the result intended to be obtained. And if the specification before us was liable to either of these objections, the patent would be void, and the instruction given by the Circuit Court undoubtedly right. But we do not think this degree of vagueness and uncertainty exists. The patentee gives a certain proportion as a general rule, that is, three fourths of a bushel of coal dust to one thousand bricks. It is true, he also states that clay which requires the most burning will require the greatest proportion of coal dust; and that some clay may require one eighth more than the proportions given, and some not more than half a bushel instead of three fourths. The two last-mentioned proportions may, however, be justly considered as exceptions to the rule he has stated, and as applicable to those cases only where the clay has some peculiarity and differs in quality from that ordinarily employed in making bricks. Indeed, in most compositions of matter, some small difference in the proportions must occasionally be required, since the ingredients proposed to be compounded must sometimes be in some degree superior or inferior to those most commonly used. In this case, however, the general rule is given with entire exactness in its terms; and the notice of the variations mentioned in the specification would seem to be designed to guard the brick-maker against mistakes, into which he might fall if his clay was more or less hard to burn than the kind ordinarily employed in the manufacture. It may be, indeed, that the qualities of clay generally differ so widely, that the specification of the proportions stated in this case is of no value, and that the improvement cannot be used with advantage in any case, or with any clay, without first ascertaining by experiment the proportion to be employed. If that be the case, then the invention is not patentable. Because, by the terms of the act of Congress, the inventor is not entitled to a patent. But this does not appear to be the case on the face of this specification. And whether the fact is so or not, is a question to be decided by a jury, upon the evidence of persons skilled in the art to which the patent appertains. The Circuit Court, therefore, erred in instructing the jury that the specification was too vague and uncertain to support the patent, and its judgment must be reversed."

public are to rely on an honest, open, and candid exposition by the patentee of everything that is necessary for the easy and certain procurement of that for which the patent is granted.¹

¹ *Muntz v. Foster et al.*, 2 Webs. Pat. Cas. 85, 96. The patentee had worded his description thus: "I take that quality of copper known in the trade by the appellation of 'best selected copper,' and that quality of zinc known in England as 'foreign zinc,' and melt them together in the usual manner in any proportions between 50 per cent of copper to 50 per cent of zinc, and 63 per cent of copper to 37 per cent of zinc; both of which extremes, and all intermediate proportions, will roll at a red heat." Then he goes on to say: "but as too large a proportion of copper increases the difficulty of working the metal, and too large a proportion of zinc renders the metal too hard when cold, and not sufficiently liable to oxidation to effect in the best manner the intended purpose, I prefer the alloy to consist of about 60 per cent of copper to 40 per cent of zinc," &c. The court said: "There have been several questions asked of witnesses; they have had the specification put into their hands, and the usual question in these cases has been asked them, whether a competent workman, looking at this specification, could by his own skill and understanding of it produce the result which is the subject of the patent. I do not find any person who has been called, on the part of the defendants, distinctly say that he cannot make the compound here described from the specification. And, therefore, that which is generally the objection which is made would not prevail here. But there is a further objection made, pointed to one particular part of the specification, and that is, that the plaintiff has given certain limits within which he says the patent can be carried into effect. The invention may be made by different proportions, within certain limits, to which I shall now call your attention. And they (defendants) say, upon the evidence of Mr. Prosser, one of the witnesses called by the plaintiff, that the invention cannot be made in one or two of the different proportions of zinc and copper which are here specified. If such be the fact, if, upon reading this, what the witness has said has shown that the specification is not only difficult to understand, but is actually false and incorrect in that particular, there would be an end at once of the patent; because, when the plaintiff takes upon him to say that he melts copper and zinc of the qualities referred to in the usual manner, 'in any proportions between 50 per cent of copper to 50 per cent of zinc, and 63 per cent of copper to 37 per cent of zinc, both of which extremes and all intermediate proportions will roll at a red heat,' if it is found out that the two extremes would not do that which he here specifies they will do, that would be a statement of a property belonging to his discovery which it did not really possess. That would only have the effect of forcing persons to make different experiments in a way in which they must afterwards be defeated, and would, in short, be a contradiction to that object and intention of the condition, which was that all should be certain, true, and intelligible.

"Prosser underwent a long examination and stated, you know, that he made a scale in which 40 was the fixed quantity of zinc he employed, and then he varies the quantity of copper in which, when reduced to the hundredth scale in which the plaintiff has framed his specification, agrees in the limits with those terms. When he comes to the last one, I think he was asked this question, 'I should say the experiment 40 to 50 copper with my scale, — which was 55½ to 44½ accord-

§ 260. But although it is necessary that a specification should clearly and fully describe the invention, and should give the best process, materials, and methods known to the inventor, yet it is not necessary for the patentee to describe the mode of making everything which he uses, or detail known processes, or explain the terms appropriate to the particular art, or science, or branch of industry to which his invention belongs.¹ The specification is, as we have seen, addressed to persons acquainted with the nature of the business; some technical knowledge is presumed on the part of those who will undertake, after the patent is expired, to carry out the invention; and such persons are to be called as witnesses to explain the language to the jury, while the patent is in force, and to show that it is capable of being understood by those to whom it is addressed. Accordingly it has been said, that a

ing to the plaintiff's scale, — I would say it is of no use at all for sheathing. It is perfectly useless in more respects than one. It does not corrode enough, it is too hard, too brittle, it would roll at a red heat and at a cold heat.' Then he goes to some others, '47 of zinc, 53 of copper, this would corrode less than the last mentioned, and be more brittle; 48 zinc and 52 copper still more, quite useless for sheathing. I do not think it could be put on a ship on account of its being brittle.' What he says of all this is that it would roll at a red heat. Now the question is, whether, looking at this specification, more is meant or intended by the expression in it, when the patentee is giving these quantities, than that it shall be a metal which will roll at a red heat. This is what he (the patentee) says: 'I melt them together in the usual manner in any proportions between 50 per cent copper to 50 per cent zinc, and 63 per cent copper to 37 per cent zinc, both of which extremes and all intermediate proportions' — he does not say will oxidize sufficiently, or will make sheathing for a ship, but — 'will roll at a red heat'; and then he goes on to say, as to the other quality which this is to possess, 'but as too large a proportion of copper increases the difficulty of working the metal, and too large a proportion of zinc renders the metal too hard when cold, and not sufficiently liable to oxidation to effect in the best manner the intended purpose, I prefer the alloy to consist of about 60 per cent of copper to 40 per cent of zinc.'

"Therefore, understanding the specification in that way, the question (the only question of fact that you can determine upon this) is, whether this account, which his own witness has given of it, has falsified the statement in the specification. If that statement had been distinctly that the lower mixture of the lower compound, the extreme, would have been sufficient for the sheathing of ships, both in respect of oxidation and of rolling hot, I should have thought the specification bad and avoided the patent. But you must say for yourselves whether you are satisfied that all that was described here was, that it would roll at a red heat and at the intermediate states; whether, in point of fact, it would roll at a red heat."

¹ Per Lord Abinger, C. B., in *Neilson v. Harford*, Webs. Pat. Cas. 341. See also *Dercsne v. Fairie*, Ibid. 154, 167.

specification containing scientific terms, which are not understood, except by persons acquainted with the nature of the business, is not bad because an ordinary person does not understand it, provided a scientific person does; but a specification using common language, and stating that by which a common man may be misled, though a scientific man would not, when it does not profess to use scientific terms, and an ordinary man is misled by it, would not be good.¹ And it has been held that if a specification contain an untrue statement in a material circumstance, of such a nature that, if literally acted upon by a competent workman, it would mislead him, and cause the experiment to fail, the specification is therefore bad, and the patent invalidated, although the jury, on the trial of an action for the infringement of the patent, find that a competent workman, acquainted with the subject, would not be misled by the error, but would correct it in practice.² This rule, however, must not, we apprehend, be applied too rigorously. Where the specification contains the description of a long and complicated process, consisting of several operations following one another in regular order, and the description as a whole is clear and sufficient, the court will not pronounce it invalid because of a slight obscurity of language in describing one of the operations, especially where such obscurity is rather grammatical than real, and would not seriously mislead a competent workman.³

¹ Per Lord Abinger, C. B., in *Neilson v. Harford*, Webs. Pat. Cas. 341. See also *Derosne v. Fairie*, *Ibid.* 154, 167.

² *Neilson v. Harford*, 8 M. & W. 896; s. c. Webs. Pat. Cas. 328.

³ *Beard v. Egerton*, 8 Mann. Gr. & Scott, 165, overruling s. c. 2 Carr. & Kirw. 667. "Applying the same principle of construction to the specification before us, we think it is free from any such mistake or obscurity as would mislead a person of fair intelligence. The specification states that the process is divided into five operations. 'The first consists in polishing and cleaning the silver surface of the plate, in order to properly prepare or qualify it for receiving the sensitive layer or coating upon which the action of the light traces the design. The second operation is, the applying that sensitive layer or coating to the surface. The third, in submitting in the camera obscura the prepared surface or plate to the action of the light, so that it may receive the images. The fourth, in bringing out or making appear the image, picture, or representation which is not visible when the plate is first taken out of the camera obscura. The fifth and last operation is that of removing the sensitive layer, &c.' It then gives a description of the first operation, — preparing the silver surface of the plate; the concluding part of which directs that nitric acid dissolved in water is to be applied three different times, care being taken to sprinkle, each time, the plate with powder, and rub it dry and very lightly with clean cotton; and this concludes the description of the

§ 261. The specification need not describe that which is within the ordinary knowledge of any workman who would be employed to put up the apparatus; as, a condenser in constructing a gas apparatus.¹ So, too, a deviation from the precise dimensions shown by the specification and model, so as to make different parts work together, is within the knowledge of any workman.² But if first operation, viz., the preparing the silver surface of the plate, when it is intended for immediate use; and to this part of the specification no objection was or could be made. But then some further information is given in respect to the preparation of the plate, in these words: ‘When the plate is not intended for immediate use or operation, the acid may be used only twice upon its surface, after being exposed to heat. The first part of the operation, that is, the preparation as far as the second application of the acid, may be done at any time; this will allow of a number of plates being kept prepared up to the last slight operation. It is, however, considered indispensable, that just before the moment of *using the plates in the camera*, or the reproducing the design, to put at least once more some acid on the plate, and to rub it lightly with pounce, as before stated; finally, the plate must be cleaned with cotton from all pounce-dust which may be on the surface or its edges.’ Upon this part of the specification it was contended that the direction to apply acid just before the moment of using plates in the camera (which is the third operation), was a direction to use it after the second operation, viz., the coating the plate with iodine; and that using the acid at that period would entirely spoil the whole process. But it must be remembered that the passage in question is part of the direction given for performing the first operation, viz., preparing the plate to receive the iodine. It is to be observed when the plate is not intended to be used immediately, and where it has previously been *partially* but not *entirely* prepared for the iodine, this last application of acid is still *to precede the second operation*. The whole passage may be considered as in a parenthesis, and the expression ‘just before the moment of using the plate in the camera’ is put in opposition to the time of partially preparing the plate; after which it is supposed to have been laid by for future use. That this is the real meaning of the passage is further manifested by what follows in a subsequent part of the printed specification: ‘After this second operation, viz., application of the iodine, the plate is to be passed to the third operation, or that of the *camera obscura*. Wherever it is possible, the one operation should immediately follow the other.’ It is plain, therefore, that the patentee did not intend any separate operation to intervene between the application of iodine and the introduction of the plate into the camera obscura. The last application of acid, therefore, must have been intended to precede the second operation.

“This, we think, is the fair construction of the language of the specification. And although there may be at first sight some appearance of obscurity in it, we think that it is cleared away by a consideration of the whole, and that it is sufficiently plain to be understood by an operator of fair intelligence.” Wilde, C. J.

¹ Crossley v. Beverley, Webs. Pat. Cas. 110, note.

² Morgan v. Seaward, Webs. Pat. Cas. 176. In this case, Alderson, B., said to the jury: “In the case of the steam engine, there was put in, on the part of the

the practical application of the invention involves a particular kind of knowledge on the part of a workman, requiring him to do that which a person of ordinary engineering skill ought to know how to do, it must at least suggest to him that that thing is to be done, if it does not specifically point out the mode of doing it.¹ In like manner it is not necessary, in the description of a machine, to state of what material every part should be made, where the principle of operation and the effect are the same, whether the parts be made of one material or another ;² but if a particular material be essential to the successful operation of the machine, as the patentee uses it, he must direct the use of that material.

Thus where the invention was the formation of grinding cham-ferendants, a model made, as it was said, according to the specification, which model would not work. The model was a copy of the drawing, and would not work, because one part happened to be a little too small, whereas if it had been a little larger, it would have worked. Now, a workman of ordinary skill, when told to put two things together, so that they should move, would, of course, by the ordinary knowledge and skill he possesses, make them of sufficient size to move. There he would have to bring to his assistance his knowledge that the size of the parts is material to the working of the machine. That is within the ordinary knowledge of every workman. He says : ' I see this will not work, because it is too small,' and then he makes it a little larger, and finds it will work ; what is required is, that the specification should be such as to enable a workman of ordinary skill to make the machine ; with respect to that, therefore, I do not apprehend you will feel much difficulty."

¹ In the case last cited, the same learned judge further instructed the jury as follows : " Mr. George Cottam says : ' It is a common problem to find a centre from three given points, and a person of ordinary engineering skill ought to be able to do that.' The question is, whether it ought not to be suggested to him by the specification, that that is the problem to be solved. Then Mr. Curtis says : ' I have made wheels on this plan.' You see he made the two wheels which were sent to the Venice and Trieste Company, but those were made under the direction of Mr. Galloway, the inventor. Now, it somewhat detracts from the weight due to his testimony, not as to respectability, but as to the value of his evidence to you, that he had received the verbal instructions of Mr. Galloway. It may be, that he could do it because of his practice under Mr. Galloway ; and it must be recollected that people in other places would not have that advantage. He says, he would not have any difficulty in doing it ; and he says : ' I should not consider my foreman a competent workman unless he were able to make the wheel from the specification and drawings.' He says : ' I could alter the angle by altering the cranks.' The question is not, whether he could do that, but whether he could alter the angle to a particular angle by altering the cranks in a particular way, that is, whether, having the angle given to him, he could make the alteration that was desired."

² *Brooks v. Bicknell*, 3 McLean's R. 250, 261.

bers by the combination of movable conical rings with stationary cylinders, and the particular description in the specification showed a mill with three grinding chambers, but the claim was to the combination of stationary *cylinders* with *one or more* movable conical rings, so that both cylinders and rings might be multiplied to any extent, or the mill limited to two cylinders and one ring, it was ruled by the court that the description was sufficient to enable a mechanic of ordinary skill to make a mill with more chambers than three.¹

§ 262. In the case of machinery, the statute directs the patentee to accompany his specification with "a drawing or drawings, and written references, where the nature of the case admits of drawings." The object of annexing drawings is both to distinguish the thing patented from other things known before, and to explain the mode of constructing the subject of the patent. It has been settled, that the drawings constitute a part of the specification, when annexed thereto, and may be used to explain or help out the otherwise imperfect description in the specification. So that it is not necessary that the description should be wholly in writing, but it may be partly in writing and partly in drawing; and if, by a comparison of the words and the drawings, the one will explain the other sufficiently to enable a skilful mechanic to perform the work, and to show what is the invention claimed, the specification will be sufficient.² And it has been held, that in order to make a drawing when annexed to or accompanying a specification, part of the specification, so that the written description may be read by it, it is not necessary that the written description should contain references to the drawing; that the direction in the statute, to annex "drawings and written references," means that where references from the writing to the drawing are necessary to the understanding of the machine or improvement, they are to be made; but that the description of many machines or improvements, when accompanied by a drawing, may be perfectly understood without references in the description itself.³

¹ Wilbur v. Beecher, 2 Blatch. 132.

² Earle v. Sawyer, 4 Mas. 1, 9; Bloxam v. Elsee, 1 Car. & P. 558; Brunton v. Hawkes; 4 B. & Ald. 540.

³ Brooks v. Bicknell, 3 McLean's R. 250, 261; Washburn v. Gould, 3 Story's R. 122, 133.

The entire specification and drawings are to be examined together, and an error in one place to be corrected by the aid of the residue.¹ The drawings need not be mentioned in the specification, but it is sufficient if the patentee puts them and written references on file with the specification.²

A drawing filed some time after the recording anew of a patent, under section one, act March, 1837, is admissible in evidence, but is not to be deemed and taken as part of the specification, nor to be used for correcting any material defect therein.³

§ 263. It was formerly held in England that the drawings annexed to specifications ought to be drawn on a scale; so that the relation and proportion of the parts to each other, and the dimensions of the different parts might appear in due ratio to each other.⁴ But this rule has been modified; and it seems now to be considered that if a mechanic can make the subject of the patent from the drawing in perspective, it is not necessary that there should be a scale.⁵ Indeed, it is a necessary consequence of the rule which makes the written description open to explanation by the drawing, to hold that the drawing is open to explanation by the written description. So long as both together enable the public to know and practise the invention, it must be immaterial whether the drawing is made upon a scale or not. But if the subject of the patent could not be made without many experiments, unless the drawing is upon a scale, then undoubtedly the whole specification taken together, being the written description and the drawing, would be defective.

§ 264. It should not be forgotten, that the statute requires a formal attestation of the specification and drawings. They must be signed by the inventor and by two witnesses.⁶ It has been suggested, that the signing of the specification referring to the drawings is in effect attesting the drawings.⁷ But whether the

¹ *Hogg et al. v. Emerson*, 11 How. 587; affirming and explaining, 6 How. 437; *Kittle v. Merriam*, 2 Curtis, C. C. 475.

² *Emerson v. Hogg*, 2 Blatch. 1.

³ *Winans v. Schenectady & Troy R. R.* 2 Blatch. 279.

⁴ *The King v. Arkwright*, Dav. Pat. Cas. 114.

⁵ *Godson on Patents*, p. 137.

⁶ Act of July 4, 1836, § 6, "which description and drawings, signed by the inventor and attested by two witnesses, shall be filed in the Patent Office."

⁷ *Phillips on Patents*, p. 302, 303.

statute is to be so construed as to require both the specification and the drawings to be signed has not been decided.

§ 265. Provision is made by the thirteenth section of the act of 1836 for the amendment of the specification by the addition of new improvements made after the patent has issued. The description of any such new improvement may be filed in the Patent Office, and is directed to be annexed by the commissioner to the original specification, with a certificate of the time of its being so annexed; and thereafter it is to have the same effect as if it had been embraced in the original specification. This provision is, however, repealed by the act of 1861, ch. 88, § 9, which enacts: "and that so much of the 13th section of the act of Congress, approved, July 4, 1836, as authorizes the annexing to letters-patent of the description and specification of additional improvements, is hereby repealed, and in all cases where additional improvements would now be admissible, independent patents must be applied for." (See chapter on Proceedings at Patent Office.) Improvements made and entered before the passage of this repealing clause are not, of course, affected by it, but are still valid under the act of 1836.

§ 266. A still further provision is made for the amendment of a redundant specification, by the filing of a *disclaimer*. The act of 1837, ch. 45, § 7, provides that, "whenever any patentee shall have, through inadvertence, accident, or mistake, made his specification of claim too broad, claiming more than that of which he was the original or first inventor, some material and substantial part of the thing patented being truly and justly his own, any such patentee, his administrators, executors, and assigns, whether of the whole or of a sectional interest therein, may make disclaimer of such parts of the thing patented as the disclaimant shall not claim to hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent, which disclaimer shall be in writing, attested by one or more witnesses, and recorded in the Patent Office, on payment by the person disclaiming, in manner as other patent duties are required by law to be paid, of the sum of ten dollars. And such disclaimer shall thereafter be taken and considered as part of the original specification, to the extent of the interest which shall be possessed in the patent or right secured thereby, by the disclaimant, and by those claiming by or under

him subsequent to the record thereof. But no such disclaimer shall affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing the same."

§ 267. The ninth section of the same act provides as follows: " (Anything in the fifteenth section of the act to which this is additional to the contrary notwithstanding) that, whenever by mistake, accident, or inadvertence, and without any wilful default or intent to defraud or mislead the public, any patentee shall have in his specification claimed to be the original and first inventor or discoverer of any material or substantial part of the thing patented, of which he was not the first and original inventor, and shall have no legal or just right to claim the same, in every such case the patent shall be deemed good and valid for so much of the invention or discovery as shall be truly and *bona fide* his own: *Provided*, it shall be a material and substantial part of the thing patented, and be definitely distinguishable from the other parts so claimed without right as aforesaid. And every such patentee, his executors, administrators, and assigns, whether of a whole or a sectional interest therein, shall be entitled to maintain a suit at law or in equity on such patent for any infringement of such part of the invention or discovery as shall be *bona fide* his own as aforesaid, notwithstanding the specification may embrace more than he shall have any legal right to claim. But, in every such case in which a judgment or verdict shall be rendered for the plaintiff, he shall not be entitled to recover costs against the defendant, unless he shall have entered at the Patent Office, prior to the commencement of the suit, a disclaimer of all that part of the thing patented which was so claimed without right: *Provided, however*, that no person bringing any such suit shall be entitled to the benefit of the provisions contained in this section, who shall have unreasonably neglected or delayed to enter at the Patent Office a disclaimer as aforesaid."

The following cases, although occurring under the provisions of the English statute of Disclaimer (5 & 6 Will. IV. ch. 83), may be cited as illustrative of the general principles applicable to this topic.

Thus, in *Seed v. Higgins*,¹ the patentee, in his specification,

¹ 8 Ell. & Blackb. 755, 771.

states his invention to consist in the application of the principle of centrifugal force in the fliers employed in the above-mentioned machinery, for the purpose of producing the required elasticity or pressure upon the bobbin, by causing the small spur or lever which conducts the sliver of cotton or other fibrous material on to the bobbin, to press or bear against the same simply by the action of such force, — and adds, that he has attached a drawing to the specification, minutely describing by reference to such drawing a machine, — and then continues: “I do not confine myself to this particular method, but claim as my invention the application of the law or principle of centrifugal force to the particular purpose set forth, i. e. to fliers used in machinery or apparatus for preparing, slubbing, and roving cotton for the purpose of producing a hard and evenly compressed bobbin.”

Afterwards, he entered a disclaimer, declaring, “For the reason aforesaid, I do hereby disclaim all application of the law or principle of centrifugal force as being part of my invention or comprised in my claim, except only the application of centrifugal force by means of a weight acting upon a presser, so as to cause it to press against the bobbin, as described in said specification.”

It was held by the Court of Queen’s Bench, and affirmed by the Exchequer Chamber, that this disclaimer was valid, and that, the original specification being read in connection with it, the result was a claim for only the machine particularly described.

In *Tetley v. Easton*,¹ it was held by Creswell, J., that the effect of a disclaimer was merely to strike out from the specification those parts of the machinery which are disclaimed, and that it cannot be read as explanatory of what remains.

In *Ralston v. Smith*,² the invention of “improvements in embossing and finishing woven fabrics, and in the machinery or apparatus employed therein,” as described in the specification, consisted in the use of rollers having “any design grooved, fluted, engraved, milled, or otherwise indented upon them.” A disclaimer was afterwards entered, by the statements wherein it appeared that the desired effect could *only* be produced by the use of a certain species of roller not particularly described in the specification, namely, a roller having circular grooves round its surface. All other rollers were expressly disclaimed. The Exchequer Chamber, affirming

¹ *Tetley v. Easton*, 2 Com. Ben. N. S. 706.

² *Ralston v. Smith*, 11 Com. Ben. N. S. 471, affirming 9 Com. Ben. N. S. 117.

the judgment of the Court of Common Pleas, held that such a disclaimer was merely an attempt to turn a specification for an impracticable generality into a claim for a specific process, which was in one sense comprised under the generality, but which could not be discovered there without going through the same course of experiment as that which led to the discovery of the specific process mentioned in the disclaimer. Consequently the disclaimer was void as an attempt to extend the patent.

By the statute 16 & 17 Vict. c. 115, an inventor is allowed to make a provisional specification, pending the proceedings for obtaining letters-patent. In *Mackelcan v. Rennie*,¹ it was held that such provisional specification is not to be admitted in explanation or enlargement of the complete specification.

§ 268. The disclaimer mentioned in the seventh section has been held to apply solely to suits pending when the disclaimer was filed in the Patent Office; and that mentioned in the ninth section, to suits brought after the disclaimer is so filed.¹

¹ *Note.* 13 C. B. N. S. 50.

² *Wyeth v. Stone*, 1 Story's R. 273, 293. In this case, Mr. Justice Story thus expounded the statute: "We come, then, to the remaining point, whether, although under the Patent Act of 1793, ch. 55, the patent is absolutely void, because the claim includes an abstract principle, and is broader than the invention; or, whether that objection is cured by the disclaimer made by the patentee (*Wyeth*), under the act of 1837, ch. 45. The seventh section of that act provides, 'That whenever any patentee shall have, through inadvertence, accident, or mistake, made his specification too broad, claiming more than that of which he was the original or first inventor, some material and substantial part of the thing patented being truly or justly his own, any such patentee, his administrators, executors, or assigns, whether of the whole or a sectional part thereof, may make disclaimer of such parts of the thing patented as the disclaimant shall not claim to hold by virtue of the patent or assignment, &c., &c. And such disclaimer shall be thereafter taken and considered as a part of the original specification, to the extent of the interest which shall be possessed in the patent or right secured thereby by the disclaimant,' &c. Then follows a proviso, that 'no such disclaimer shall affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing the same.' The ninth section provides, 'That whenever, by mistake, accident, or inadvertence, and without any wilful default or intent to defraud or mislead the public, any patentee shall have, in his specification, claimed to be the first and original inventor or discoverer of any material or substantial part of the thing patented, of which he was not the first and original inventor, and shall have no legal or just right to claim the same, in every such case the patent shall be deemed good and valid for so much

The disclaimer, however, mentioned in section nine, which provides that the suit shall not be defeated where the patentee claims of the invention or discovery, as shall be truly and *bona fide his own*; provided it shall be a material and substantial part of the thing patented, and shall be definitely distinguishable from the other parts so claimed without right as aforesaid.' Then follows a clause, that in every such case, if the plaintiff recovers in any suit, he shall not be entitled to costs, 'unless he shall have entered at the Patent Office, prior to the commencement of the suit, a disclaimer of all that part of the thing patented, which was so claimed without right'; with a proviso, 'That no person bringing any such suit shall be entitled to the benefits of the provisions contained in this section, who shall have unreasonably neglected or delayed to enter at the Patent Office a disclaimer as aforesaid.'

"Now, it seems to me, that upon the true construction of this statute, the disclaimer mentioned in the seventh section must be interpreted to apply solely to suits pending when the disclaimer is filed in the Patent Office; and the disclaimer mentioned in the ninth section to apply solely to suits brought after the disclaimer is so filed. In this way the provisions harmonize with each other; upon any other construction they would seem, to some extent, to clash with each other, so far as the legal effect and operation of the disclaimer is concerned.

"In the present case, the suit was brought on the 1st of January, 1840, and the disclaimer was not filed until the 24th of October, of the same year. The proviso, then, of the seventh section would seem to prevent the disclaimer from affecting the present suit in any manner whatsoever. The disclaimer, for another reason, is also utterly without effect in the present case; for it is not a joint disclaimer by the patentee and his assignee, Tudor, who are both plaintiffs in this suit, but by Wyeth alone. The disclaimer cannot, therefore, operate in favor of Tudor, without his having joined in it, in any suit, either at law or in equity. The case, then, must stand upon the other clauses of the ninth section, independent of the disclaimer.

"This leads me to say, that I cannot but consider that the claim made in the patent for the abstract principle or art of cutting ice by means of an apparatus worked by any other power than human, is a claim founded in inadvertence and mistake of the law, and, without any wilful default or intent to defraud or mislead the public, within the proviso of the ninth section. That section, it appears to me, was intended to cover inadvertences and mistakes of the law, as well as inadvertences and mistakes of fact; and, therefore, without any disclaimer, the plaintiffs might avail themselves of this part of the section to the extent of maintaining the present suit for the other parts of the invention claimed, that is, for the saw and for the cutter, and thereby protect themselves against any violation of their rights, unless there has been an unreasonable neglect or delay to file the disclaimer in the office. Still, however, it does not seem to me, that a court of equity ought to interfere to grant a perpetual injunction in a case of this sort, whatever might be the right and remedy at law, unless a disclaimer has been in fact filed at the Patent Office before the suit is brought. The granting of such an injunction is a matter resting in the sound discretion of the court; and if the court should grant a perpetual injunction before any disclaimer is filed, it may be, that the pat-

more than he has invented, applies only to cases where the part invented can be clearly distinguished from that claimed but not invented.¹

§ 269. In this section it is intended to give a condensed statement of the constructions given by the courts to the specifications of some of the leading patents litigated in this country and in England.

The distinction between an improvement in a machine and a novel result attained by a mere alteration in an old machine is abundantly illustrated by the course of decision upon Kay's patent, in the case of *Kay v. Marshall*.² The patentee, after describing his improved machinery for *macerating* flax, goes on to describe his *improved machinery for spinning* such macerated flax: "I place the drawing rollers only two and a half inches from the retaining rollers, and this constitutes the *principal improvement in said spinning machinery* . . . ; and that which I claim as my invention in respect of improved machinery, is (the wooden or other trough marked D, for holding the rovings when taken from the macerating vessels, and) the placing of the retaining rollers and the drawing rollers nearer to each other than they have ever before been placed, say within two and a half inches of each other, for the purpose aforesaid." After an extensive course of litigation before the Vice Chancellor, Baron Parke, on trial of a feigned issue, and the Court of Common Pleas on issue of law, the case was finally decided by the House of Lords. It was there held, Lord Cottenham rendering the decision, that the processes of maceration and of spinning were entirely distinct, and consequently that the patent was for two inventions, and not for one alone; also that the patentee's claim must be construed as one for a machine, and not for a process or a result; that as the jury, on the feigned issue, had found that parties other than the

entee may never afterwards, within a reasonable time, file any disclaimer, although the act certainly contemplates the neglect or delay to do so to be a good defence, both at law and in equity, in every suit brought upon the patent, to secure the rights granted thereby. However, it is not indispensable in this case to dispose of this point, or of the question of unreasonable neglect or delay, as there is another objection, which in my judgment is fatal, in every view, to the maintenance of the suit in its present form."

¹ *Vance v. Campbell*, 1 Black. 427; *vid. Peterson v. Wooden*, 3 M'Lean, 248.

² *Kay v. M.*, 2 W. P. C. 34.

patentee had previously placed the rollers at varying distances apart, therefore the patentee's claim was void for want of novelty.¹

In McCormick's patent of October 23, 1847, for improvements in reaping-machines, the patentee says: "I also claim, as my invention, the arrangement of the *seat* of the raker over the end of the finger-piece which projects beyond the range of fingers, and just back of the driving-wheel, *as described*, in combination with and placed at the end of the reel." This was construed not to be a claim for the seat, as *a seat*, or for its peculiar mode and form of construction, but a claim for the arrangement and combination of machinery described, by which the benefit of a seat or position for the raker on the machine is obtained.² In a subsequent action arising under the same patent,³ it was held that claims No. 2 and No. 3 of the specification, "(2) I claim the reversed angle of the teeth of the blade, in manner described; (3) I claim the arrange-

¹ "The *invention* was not of macerating flax or of machinery, but of treating flax in a certain manner, i. e. spinning macerated flax at a short ratch; the doing that was a new manufacture of flax; the result, as evidence by the effects on trade, was of national importance. Such was Kay's invention in fact.

"Kay's patent, i. e. title (claim), was for 'new and improved machinery for preparing and spinning flax,' &c. The spinning machine thus described was old; upon this ground, therefore, the patent was invalid, and in this ground of invalidity all the judgments concur.

"The judgments also concur in this, that the fixing at a given distance, as two and a half inches, the rollers of spinning machinery adapted to work at greater or less distances, is not *per se* any manufacture, or the subject of letters-patent.

"But the judgment of the Court of Common Pleas has been supposed to go further, and has applied to sustain propositions to the following effect: first, that the use of such old machinery for the special purpose of spinning macerated flax could not be the subject of a valid patent; secondly, if a specification contains a claim to any matter which is not *per se* the subject of letters-patent, though in fact new, and there being no false suggestion, i. e. the title being supported by other matters contained in the specification, that such letters-patent are invalid. The following paragraph in the judgment of the House of Lords, 'If he has discovered any means of using the machine which the world had not known before the benefit of, that he has a right to secure to himself by means of a patent' (p. 82), is an authority against the former proposition, and an authority to show that the spinning of macerated flax by known machinery would have been the subject-matter of letters-patent, if the title and specification had properly been adapted thereto. . . . The flax so spun would be a new manufacture, both in respect of the method and result." — Note by Mr. Webster, p. 84.

² McCormick v. Seymour, 2 Blatch. 240. Affirmed (except as to rule of damages) in Seymour v. McCormick, 16 How. 480.

³ Seymour v. McCormick, 19 How. 96. See also an English case under the same patent in 4 Law Times, N. S. 832.

ment and construction of the fingers or teeth for supporting the grain so as to form the angular places in front of the blade, as and for the purpose described," were not to be read in connection with each other, but separately.

Goodyear, in describing the nature of his invention,¹ says in his specification: "The nature of the first part of my invention consists in curing caoutchouc or india-rubber, when combined with or in the presence of sulphur, by submitting the same to the action of a high degree of artificial heat, at a temperature say from 212 to 350 or thereabouts. . . . And the second part of my invention consists in preparing and curing the triple compound of caoutchouc, or india-rubber, sulphur, and a carbonate or other salt or oxide of lead, for the purpose above described." He then proceeds to describe the process and relative proportions of the ingredients; and after stating the leading features of his invention to be the effects produced by heat on the rubber thus combined, he concludes: "What I claim as my invention and desire to secure by letters-patent is the curing of caoutchouc, or india-rubber, by submitting it to the action of a high degree of artificial heat, substantially as herein described and for the purposes specified. And I also claim the preparing and curing the compound of india-rubber, sulphur, and a carbonate or other salt or oxide of lead, by subjecting the same to the action of artificial heat, substantially as herein described."

In the construction of this specification, it was held that the patentee had claimed not merely the process of preparing vulcanized india-rubber, but the product itself, as a new manufacture or composition of matter. Mr. Justice Grier, in this case observed;— "On account of the vagueness and indefiniteness of the language used in describing the various arts, machines, manufactures, and compositions of matter, it is impossible to describe the real nature of many discoveries or processes in language absolutely free from all ambiguity and all misconstruction. Different persons, looking at it from different points of view, would describe it in different terms. In the present case, one might describe it as 'the art of curing india-rubber'; another, as 'a new and useful improvement in the process of curing india-rubber'; another, as 'the art of rendering caoutchouc and manufactures in which it is used insensible to heat or cold, or the action of most of its known solvents';

¹ Goodyear v. The R. R. 2 Wallace, C. C. 356.

another, as ‘ a fabric, manufacture, or new composition of matter, having qualities never before combined in any other known substance, being elastic, water-proof, insensible to acids, to heat, or to cold.’ Still, call it what you will, if the patentee has set forth fully the materials, their various proportions, and the processes necessary to the production of this composition of matter, he has done all that the law requires, and should be entitled to its protection. The patent should be carefully examined to find the thing discovered, and if it be clearly set forth, the patentee should not suffer for the imperfection or vagueness of the language used in describing its true extent and nature. The description ought not to be repugnant to the specification ; but, provided it honestly sets forth in few words the nature and design of the patent, it is sufficient. It should show what the patentee claims to have discovered or invented, wherein it differs from what was heretofore known, and by what combinations or processes the new material may be compounded. . . . It is essentially proper, in patents for complicated machines, that the specification should clearly set forth what the patentee admits to be old and what he claims to be of his invention. In anomalous cases like the present, when a new product has been discovered, and the process of compounding it or obtaining it is disclosed, the patentee, by stating his discovery and revealing his process, has done all that he is required to do or can do. The careful separation of new from old, the limitation of claims to particular parts or combinations, cannot be required as a substantial part of the specification. If the specification sets forth a discovery, a new composition of matter, and the process for compounding it, that should be taken as the extent of his claim and the measure of his franchise. Now, what is this india-rubber, cured substantially as described in Mr. Goodyear’s description ? It is clearly not merely an improved method or process of producing an old and well-known composition or material, but it is a new product, fabric, manufacture, or composition of matter, having qualities possessed by no other known material. This is what is described and claimed in the patent, — a new product as well as a new process.”

In Howe’s sewing-machine patent, the first claim of the specification was worded thus : “ The forming of the seam by carrying a thread through the cloth, by means of a curved needle on the end of a vibrating arm, and the passing of a shuttle, furnished with

its bobbin, in the manner set forth, between the needle and the thread which it carries, under a combination and arrangement of parts substantially the same with that described.”¹ This was construed to be in words a claim for the result, but in reality for the means or mechanism by which that result was to be attained; also, that too much stress should not be laid upon the distinction between a machine and a combination; also, that the patentee’s claim was for a general combination, consisting of several sub-combinations, viz., a mechanism for forming the stitch, a mechanism for holding the cloth to be sewed, and a mechanism for feeding the cloth, and that all these general elements in combination and arrangement were set forth in the specification.

Winans’ patent for an “improvement in the construction of cars or carriages intended to run on railroads” claimed “the before-described manner of arranging and connecting the eight wheels, which constitute the two bearing carriages, with a railroad car, so as to accomplish the end proposed by the means set forth, or by any others which are analogous and dependent upon the same principles.” This claim was construed to be one for the car itself, constructed and arranged as in the patent; consequently, the novelty of the invention was not impeached by evidence showing that parts of the invention had been in use previously.²

The case of *Burr v. Duryee*,³ decided in the United States Supreme Court, on appeal from the Circuit Court of New Jersey, presents an exhaustive discussion of the principles distinguishing an invention for a *machine* from one for a *process*. Burr, the complainant, was assignee of the Wells patent for hat-making; the original patent therefor was granted in 1846, but in 1856 it was surrendered and a reissue obtained. In the spring of 1860 an extension was granted. In January, 1860, a patent was granted to Boyden for improved machinery in hat-making, of which Duryee and others became the assignees. This machinery the complainants, by permission of the defendants, examined. Afterwards, in December, 1860, they surrendered their extended patent and obtained a second reissue, upon the construction of which the decision of the matter in controversy turned. It was held to be an attempt to convert an improved machine into an abstraction, a principle, or

¹ *Howe v. Morton et al.*; *Howe v. Williams*, per Sprague, J., MS.

² *Ross Winans v. Schenectady & Troy R. R.* 2 Blatch. 279.

³ *Burr v. Duryee*, 1 Wallace, 531.

mode of operation ; a use of general and abstract terms, by which the specification was made so elastic that it might be construed to claim only the machine, or to exclude all previous and future inventions for the same purpose.

Wells, in his original specification, says: "What I claim, &c., is *the arrangement of the two feeding belts (bb') with their planes inclined to each other, and passing around the lips (dd') formed substantially as described, the better to prevent the fibres to the action of the rotating brush (F), as described in combination with the rotating brush and tunnel or chamber (M), which conducts the fibres to the perforated cone or other 'former' placed in front of the aperture or mouth thereof, substantially as herein described. I claim the chamber (M) into which the fibres are thrown by the brush, in combination with the perforated cone or other former, placed in front of the delivery aperture thereof for the purpose and in the manner substantially as herein described, the said chamber being provided with an aperture (N) below and back of the brush, for the admission of a current of air to aid in throwing and directing the fibres on to the cone or other former, as described. I also claim the employment of the hinged hood (s) to regulate the distribution of the fibres on the perforated cone or other former as described. And I also claim providing the lower part or delivery aperture of the tunnel or chamber with a hinged flap (9), for the purpose of regulating the delivery of the fibres to increase the thickness of the hat where more strength is required, as herein described, in combination with the hood as herein described.*" This claim was decided to be a valid one for an improved machine.

The reissue of 1860 ran thus: "The mode of operation of the said invention of the said Henry Wells is such, that the fur fibres are directed and controlled so as to travel from the picking and disintegrating brush (F) towards the surface of the previous cone, &c., that they may be deposited thereon to the thickness required to make a hat of uniform thickness all the way around, and of the required varying thickness from brim to top ; and this *mode of operation* results from combining with a rotary picking and disintegrating brush and a pervious cone or equivalent former, connected with an exhausting apparatus, *suitable means* for directing and controlling the fur-bearing currents. The *said mode of operation invented by the said Henry A. Wells is embodied in the fol-*

lowing description of the mode of application, reference being had to the accompanying drawings, &c. . . . What I claim as the invention of the said Henry A. Wells, &c., is the mode of operation substantially as herein described, &c., which mode of operation results from the combination of the rotating picking mechanism or the equivalent thereof, the pervious former and its exhausting mechanism or the equivalent thereof, and the means for directing the fur-bearing current or the equivalent thereof, as set forth."

Judge Grier, in giving the decision of the Supreme Court, said: "The surrender of valid patents and the granting of reissued patents thereon, with expanded or equivocal claims, where the original was clearly neither 'inoperative nor invalid,' and whose specification is neither 'defective nor insufficient,' is a great abuse of the privilege granted by the statute, and productive of great injury to the public. We concur, therefore, in the decision of the Circuit Court, that the machine of Boyden is not an infringement of the invention of Wells, and if it be an infringement of the reissued patent, that patent is void." (p. 577.)

*Many v. Jagger et al.*¹ was a suit brought for infringement of the Wolf patent for improvement in cast-iron wheels for railroads and other purposes. The specification was in these words: "We give to the rim of our wheels the same form in all respects as is now given to the rims of car-wheels; but instead of arms, we cast our wheels with two parallel or nearly parallel plates, which plates are convex on one side and concave on the other. The hub, or nave, which is to receive the axle, is cast in the centre of these plates, extending from one to the other. . . . We are aware that car-wheels have been made with plates as a substitute for arms, but such plates have been made separate from the wheels and united together by screwed bolts, embracing the hub in a distinct piece between them. The difference between such wheels and those constructed by us is so obvious as not to need pointing out. *What we claim as our invention, &c., is the manner of constructing wheels for railroad cars, or for other purposes to which they may be applied, with double convex plates, one convex outwards and the other inwards, and an undivided hub, the whole cast in one piece as herein fully set forth."*

In construing this patent, the court held that the claim was not for the mode of constructing the wheel as distinct from the wheel

¹ *Many v. Jagger*, 1 Blatch. 372.

itself, but was for the car-wheel after it was constructed. Also, that the claim was not for any separate part of the wheel, but for the entire wheel, and that it sufficiently distinguished between the new and the old.

In *Buck v. Hermance*,¹ the words of the claim for a patent in cooking-stoves, “the extending of the oven under the apron or open hearth of the stove, and in combination with the flues constructed as above specified,” were held to be a claim for a *combination* of the extension of the oven under the hearth of the stove *with* the flues, as described.

Booth v. Garely.² Here, a patent for a *new and ornamental design for figured silk buttons*, under act, August 29, 1842, where the specification claimed *the radially formed ornaments on the face of the mould of the button, combined with the mode of winding the covering of the same, substantially as set forth*, and described the configuration of the mould and the winding it with various colored threads, but did not describe the process of winding the silk, was construed not to cover that process, but merely the arrangement of the different colored threads in the process, so as to produce the described ornaments.

In *Oxley v. Holden*,³ the words of the claim for the second part of the invention were: “I claim the metal fixings and the mode of applying the same, described herein as the second part of my invention.” The claim was construed not to apply to the metal fixings (which were notoriously old and well known) apart from their application.⁴

¹ *Buck v. Hermance*, 1 Blatch. 398.

² *Booth v. Garely*, 1 Blatch. 247.

³ *Oxley v. Holden*, 8 Com. Ben. N. S. 666.

⁴ *Ibid.* 705.

CHAPTER VII.

PROCEEDINGS AT THE PATENT OFFICE.

- I. Caveat for incomplete Invention.
- II. The Petition, Oath, Payment of Fees.
- III. Signatures of the Secretary of the Interior and Commissioner.
- IV. Interfering Applications.
- V. Reissue and Amendment of Patents.

CAVEAT FOR INCOMPLETE INVENTION.

§ 270. THE twelfth section of the act of July 4, 1836, provides that any citizen of the United States, or alien who shall have been resident in the United States one year next preceding, and who shall have made oath of his intention to become a citizen thereof, who shall have invented any new art, machine, or improvement thereof, and shall desire further time to mature the same, may, on payment of the sum of twenty dollars, file in the Patent Office a *caveat*, setting forth the design and purpose thereof, and its principal and distinguishing characteristics, and praying protection of his right till he shall have matured his invention; which sum of twenty dollars, in case the person filing such caveat shall afterwards take out a patent for the invention therein mentioned, shall be considered a part of the sum required for the same. And such caveat shall be filed in the confidential archives of the office, and preserved in secrecy. And if application shall be made by any other person within one year from the time of filing such a caveat, for a patent of any invention with which it may in any respect interfere, it shall be the duty of the commissioner to deposit the description, specifications, drawings, and model in the confidential archives of the office, and to give notice, by mail, to the person filing the caveat, of such application, who shall, within three months after receiving the notice, if he would avail himself of the benefit of his caveat, file his description, specifications, drawings, and model; and if, in the opinion of the commissioner, the specifications of claim interfere with each other, like proceedings may be had in all respects as are provided in the case of interfering applications.

These provisions have been somewhat modified by the Patent

Act of 1861, (Laws 1861, ch. 88, § 9,) which declares, “ *And be it further enacted*, That no money paid as a fee on any application for a patent after the passage of this act shall be withdrawn or refunded, nor shall the fee paid on filing a caveat be considered as part of the sum required to be paid on filing a subsequent application for a patent for the same invention. That the three months’ notice given to any caveator, in pursuance of the requirements of section twelve, act of July 4th, 1836, shall be computed from the day on which such notice is deposited in the post-office at Washington, with the regular time for the transmission of the same added thereto, which time shall be indorsed in the notice.” Section ten of this act of 1861 also abolishes the laws regulating the fees at the Patent Office, and discriminating between citizens of the United States and that of other countries, and provides that the fee for filing each caveat shall be *ten* instead of *twenty* dollars. As to the effect of a caveat upon a subsequent patent, see the ruling of Sprague, J., in *Johnson v. Root*, MS. : “ It is contended, on the part of the defendant, that the caveat itself is conclusive evidence that the invention was not perfected. You will observe that the application, which is in the caveat before you, made to the Patent Office by Mr. Johnson for leave to file a caveat, sets forth that he has made a certain new and useful improvement in the sewing-machine, and that he is then making experiments to perfect it, and he asks leave to file a caveat to secure it. The defendant insists that that application is of itself conclusive evidence that he has not perfected it. We will look at it, gentlemen, and see. I do not instruct you that it is conclusive evidence ; but it is evidence for you to take into view in connection with the other evidence, and in connection with the other parts of the same instrument, in which he begins by saying that he has made a new and useful invention in the sewing-machine. Now, gentlemen, although a caveat is understood to be, and in this instance is, filed in order to allow the party to perfect his machine, yet if, in point of fact, the invention had been perfected in the eye of the law, as I have explained to you, then, if you are satisfied of that from the evidence, you may deem it, for the purposes of this trial, as perfected. Or it may happen that a person may choose to file a caveat while he is going on and making improvements upon an invention which he has already completed, so as to be of practical utility. Therefore, gentlemen, I would say to you

that you will take into consideration the declaration of the plaintiff himself in the application, that he had made a new and useful improvement in sewing-machines, and the further declaration that he is making experiments in order to perfect his invention, and the subsequent declaration that he has made a new and useful improvement, and the other evidence in relation to the case, — that is, what is described in the caveat and the model made in 1848, — and see if that exhibits to you a perfected machine; and then such further evidence as you have as of the actual operation of the machine that will be before you.

“Now, gentlemen, if he had perfected it, then he had a right to embrace it in a patent that he should afterwards take out. If he had not perfected it, then another question will arise, and that is, had he invented the feeding mechanism at that time, and did he use due diligence to perfect that and put it into a perfect machine so as to make it of some practical utility. . . . If the invention was perfected, as I have already said, or, if not perfected, if Mr. Johnson used reasonable diligence to perfect it, then he had a right to have it incorporated into his patent, and to supersede those that had intervened between his first discovery and his subsequent taking out of the patent. If he had not perfected it, and did not use due diligence to carry it into effect, and in the mean time, before he got his patent, some one else had invented and used and incorporated into a practical, useful machine that mode of feeding, then he could not, by subsequent patent, appropriate to himself what was embraced in the former machine, between his caveat and the obtaining of his patent.”

THE PETITION, OATH, PAYMENT OF FEES, ETC.

§ 271. The act of 1836, § 6, requires an inventor who desires to obtain a patent to “*make application in writing* to the Commissioner of Patents,” &c. This application in writing has, from the origin of the government, been by way of petition, generally with the specification annexed and referred to, or accompanied by the specification, filed at the same time. The form of the petition is not material, provided it set forth the facts to which the applicant is required to make oath. When filed, it is to be presumed to adopt the specification, or schedule, filed at the same time, and to ask for a patent for the invention therein described.¹

¹ *Hogg v. Emerson*, 6 How. 437, 480. The rules of the Patent Office give a form of petition which it is advisable to adopt in all cases. See Appendix.

If a party chooses to withdraw his application for a patent and pay the forfeit, intending at the time of such withdrawal to file a new petition, and he accordingly does so, the two petitions are to be considered as parts of the same transaction and as constituting a continuous application, within the meaning of the law. The question of the continuity of the application should be submitted to the jury.¹ Where an inventor, having made application for a patent for certain improvements, afterwards, with his claim still on file, makes application for another but distinct improvement in the same branch of art, describing therein the former application, but not claiming it as original, such description and non-claim is not to be considered a dedication of the prior invention.²

§ 272. The applicant is also required to make oath or affirmation that he does verily believe that he is "the original and first inventor," &c., "and that he does not know or believe that the same was ever before known or used," and also of what country he is a citizen; which oath or affirmation may be made before any person authorized by law to administer oaths.³

§ 273. The applicant is required to make oath or affirmation, not that he is the original and first inventor or discoverer, but that he believes himself to be so. He cannot know absolutely whether he first invented or discovered the thing for which he claims a patent, but he may believe that he did; and it is only when he is willing to make oath that he so believes, that the law grants him the patent. A subsequent section of the same statute provides for one case in which a patent shall still be valid, if issued to an applicant who believed himself to be the first inventor or discoverer, although he was not so, in point of fact. This case is where the invention or discovery had been previously known or used in a foreign country, but had not been patented or described in any public work, and the patentee was ignorant of that fact. If the patentee, before making his application, had learned that the thing had been known or used in a foreign country, although not patented or described in any foreign work, he cannot have believed

¹ *Godfrey v. Eames*, 1 Wallace, 317.

² *Suffolk Co. v. Hayden*, 3 Wallace, 315.

³ Act of July 4, 1836, § 6. The oath extends to all described in the schedule filed with the petition, as well as to the title or description of the invention contained in the petition itself. *Hogg v. Emerson*, 6 How. 437, 482.

himself to be the first inventor or discoverer. But if he learn the fact after he has taken the oath, it will not invalidate his patent.¹

§ 274. An irregularity in the form of the oath will be cured by the issuing of the patent, and it seems that a patent would be valid, when issued, although the oath might not have been taken at all. It has been held that the taking of the oath is only a prerequisite to the granting of the patent, and in no degree essential to its validity; so that if the proper authorities, from inadvertence or any other cause, should grant a patent, where the applicant had not made oath according to the requisitions of the statute, the patent would still be valid. But where the oath has been taken and is recited in the patent, it is the foundation of the *onus probandi* thrown on the party who alleges that the patentee was not the original and first inventor.²

§ 275. The ninth section of the statute provides, that before any application for a patent shall be considered by the commissioner, the applicant shall pay into the treasury of the United States, or into any of the deposit banks to the credit of the Treasury, if he be a citizen of the United States, or an alien, and shall have been resident in the United States for one year next preceding, and shall have made oath of his intention to become a citizen thereof, the sum of thirty dollars; if a subject of the King of Great Britain, the sum of five hundred dollars.³

These provisions have been superseded by the fee-bill contained in the Act of Mar. 2, 1861, § 10. *And be it further enacted*, That all laws now in force fixing the rates of the Patent Office fees to be paid, and discriminating between the inhabitants of the United States and those of other countries, which shall not discriminate against the inhabitants of the United States, are hereby repealed, and in their stead the following rates are established: —

On filing each caveat, ten dollars.

On filing each original application for a patent, except for a design, fifteen dollars.

On issuing each original patent, twenty dollars.

On every appeal from the examiner in chief to the commissioner, twenty dollars.

¹ Act 4th July, 1836, § 15.

² *Alden v. Dewey*, 1 Story's R. 336, 341.

³ Act 4th July, 1836, § 9.

On every application for the reissue of a patent, thirty dollars.

On every application for the extension of a patent, fifty dollars ; and fifty dollars in addition, on the granting of every extension.

On filing each disclaimer, ten dollars.

For certified copies of patents and other papers, ten cents per hundred words.

For recording every assignment, agreement, power of attorney, and other papers of three hundred words or under, one dollar.

For recording every assignment and other papers over three hundred and under one thousand words, two dollars.

For recording every assignment or other writing, if over one thousand words, three dollars.

For copies of drawings, the reasonable cost of making the same.

SIGNATURES OF THE SECRETARY OF THE INTERIOR AND OF THE
COMMISSIONER OF PATENTS.

§ 276. The act of July 4, 1836, ch. 357, § 5, provides that patents shall be issued from the Patent Office "in the name of the United States, and under the seal of said office, and be signed by the Secretary of State, and countersigned by the commissioner of said office."

But now, according to act of 1849, ch. 108, § 2, "The Secretary of the Interior shall exercise and perform all the acts of supervision and appeal in regard to the office of Commissioner of Patents, now exercised by the Secretary of State."

§ 277. It has been held that the sanction of the Secretary of State (now of the Interior) to a correction of a clerical mistake in letters-patent, may be given in writing afterwards ; and that he need not re-sign the letters themselves. But the commissioner, if he be the same officer who countersigned the letters originally, may make the correction without re-signing or re-sealing. If the mistake occurs in the copy of the patent, and not in the record or enrolment, it may be corrected by the commissioner and made to conform to the original. If the mistake in the enrolled patent be a material one, the letters cannot operate except on cases arising after the correction is made ; but if the correction be of a clerical mistake only, it operates back to the original date of the letters,

unless, perhaps, as to third persons, who have acquired intervening rights to be affected by the alteration.¹

§ 278. It has also been held, that a signature to the patent, and a certificate of copies by a person calling himself "acting commissioner," is sufficient on its face in controversies between the patentee and third persons, as the law recognizes an acting commissioner.²

REISSUE OR AMENDMENT OF A PATENT.

§ 279. The act of July 4, 1836, § 13, makes the following provision in case of a defective or insufficient specification, or of the subsequent invention of something which the patentee wishes to add to his specification.

§ 280. "And be it further enacted: That whenever any patent which has heretofore been granted, or which shall hereafter be granted, shall be inoperative or invalid, by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had or shall have a right to claim as new; if the error has or shall have arisen by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it shall be lawful for the commissioner, upon the surrender to him of such patent, and the payment of the further duty of fifteen dollars, to cause a new patent to be issued to the said inventor, for the same invention, for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification. And in case of his death, or any assignment by him made of the original patent, a similar right shall vest in his executors, administrators, or assignees. And the patent so reissued, together with the corrected description and specification, shall have the same effect and operation in law, on the trial of all actions hereafter commenced for causes subsequently accruing, as though the same had been originally filed in such corrected

¹ *Woodworth v. Hall*, 1 Woodb. & M. 248; s. c. *Ibid.* 389.

² *Woodworth v. Hall*, 1 Woodb. & M. 248. Where evidence is offered to prove that the "acting commissioner" who signs a patent was not appointed by the President, it is doubtful whether it is competent in controversies where he is not a party. s. c. 1 Woodb. & M. 389.

form, before the issuing out of the original patent. [And whenever the original patentee shall be desirous of adding the description and specification of any new improvement of the original invention or discovery which shall have been invented or discovered by him subsequent to the date of his patent, he may, like proceedings being had in all respects as in the case of original applications, and on the payment of fifteen dollars, as hereinbefore provided, have the same annexed to the original description and specification; and the commissioner shall certify, on the margin of such annexed description and specification, the time of its being annexed and recorded; and the same shall thereafter have the same effect in law, to all intents and purposes, as though it had been embraced in the original description and specification." ¹]

That provision of the section in brackets has been abolished by the act of 1861, ch. 88, § 9, which provides "that so much of the thirteenth section of the act of Congress, approved July 4, 1836, as authorizes the annexing to letters-patent of the description and specification of additional improvements is hereby repealed. And in all cases where additional improvements would now be admissible, independent patents must be applied for."

§ 281. The object of conferring this power of surrender and re-issue is to enable patentees to remedy accidental mistakes. In a very recent case the court took the opportunity of pointedly condemning a practice which had sprung up of late, and which consists in surrendering valid patents and obtaining reissues for the purpose of inserting therein expanded and equivocal claims.²

¹ The act of March 3, 1837, § 8, makes a further provision on this subject: —

"And be it further enacted, That, [whenever application shall be made to the commissioner for any addition of a newly discovered improvement to be made to an existing patent, or] whenever a patent shall be returned for correction and reissue, the specification of claim annexed to every such patent shall be subject to revision and restriction, in the same manner as are original applications for patents; the commissioner shall not [add any such improvement to the patent in the one case, nor] grant the reissue in the other case, until the applicant shall have entered a disclaimer, or altered his specification of claim in accordance with the decision of the commissioner; and in all such cases the applicant, if dissatisfied with such decision, shall have the same remedy and be entitled to the benefit of the same privileges and proceedings as are provided by law in the case of original applications for patents." The parts in brackets are repealed by act of 1861, ch. 88, § 9.

² *Burr v. Duryee*, 1 Wallace, 531. "Since the date of this act, not only the Patent Office but the bar can furnish gentlemen fully competent to the task of

Inasmuch as it is the duty of the Commissioner of Patents to see that a reissue does not cover more than the original, the reissue is to be presumed to be for the same invention until the contrary be shown. Variations in the two patents do not necessarily imply that the subsequent one is for a different discovery. The right to surrender the old patent and receive another in its place was given for the purpose of enabling the patentee to give a more perfect description of his invention, when any mistake or oversight was committed in the first. If a separate invention is covered by one of the claims in a surrendered patent, and that claim, as there made, is void, the patentee may take a distinct patent therefor.¹

Whether the defect be in the specification or the claim, the patentee may surrender his patent, and, by an amended specification, cure the defect. A substantially new and different invention cannot be claimed; but where the specification or claim is made so vaguely as to be inoperative or invalid, yet an amendment may give to it validity. The patentee has a right to restrict or enlarge his claim so as to give it validity and effectuate his invention.²

drawing up proper specifications, and but little liable to commit blunders from inadvertency. Specifications now seldom issue from the Patent Office to which such an imputation can be made. Nevertheless, this privilege of surrender and reissue is resorted to more frequently than ever. Formerly, when in course of investigation in a court of justice it was discovered that a patent was invalid, for any of the reasons mentioned in the act, it was resorted to. Now, after a patent has been declared to be valid, the specification without defect, and the claim for nothing more than the invention, after it has undergone examination for many years, and courts and juries have decided that the patent is *not* invalid through inadvertency, accident, or mistake, the assignees come forward and make oath that the inventor's original patent is 'unavailable' for some purpose unnecessary to be divulged. In the present case, the purpose is transparent. The specification of this reissued patent, instead of describing first the *machine* and the several devices which exhibit its peculiar mode of operation in order to produce the desired effect, and stating what the patentee claims as his peculiar invention, commences by describing 'a *mode of operation*' as the thing intended to be patented, and uses these words: The said *mode of operation* invented by the said Henry A. Wells, is embodied in the following description of the mode of application. The claim is for the mode of operation substantially as herein described.

"We have no leisure for a further development of this novel form of patent, or how, by the use of general and abstract terms, the specification is made so elastic that it may be construed to claim only the machine, or so expanded as to include all previous or future inventions for the same purpose."

¹ O'Reilly *v.* Morse, 15 How. 62.

² Battin *v.* Taggart, 17 How. 74. Reversing the same case in 2 Wallace, C. C. R. 101.

A patent which is extended by a special act of Congress becomes thereby a patent for the period of twenty-eight years from its original date, and a surrender and reissue thereof after such extension stand on the same footing as if they had been made in the case of a patent for twenty-one years.¹

§ 282. The question has been raised, how far the decision of the Commissioner of Patents upon the existence of a defect in the specification, arising from inadvertence, accident, or mistake, is re-examinable elsewhere. It becomes important when, in an action under the reissued patent, the defence is set up that the reissue is for a different invention for that described in the surrendered patent. Inasmuch as the descriptions in the two patents necessarily differ, it follows that if the commissioner's decision is open to re-examination, so that the fact of the existence of defects in the former patent can be inquired into, the defendant is at liberty to show that the reissued patent is not for the same invention as that covered by the surrendered one. But if, on the other hand, the commissioner's action in the matter of surrender and reissue is conclusive, then the granting of a new patent, as provided by statute, precludes all inquiry into the fact whether it was or was not rightly granted, and makes the new patent of necessity applicable to the same invention as the old.

Under the act of 1832 the Supreme Court held that the reissue of a patent by the commissioner was *primâ facie* evidence that the proofs of defect required by the statute had been regularly furnished and were satisfactory.² Subsequently, under the act of 1836, the same court appears to have considered the granting of the renewed patent as so far conclusive upon the question of the existence of error in the original patent arising from inadvertency, accident, or mistake, that nothing remained open but the fairness of the transaction; that the question of fraud might be raised, and that this was for the jury; but that, unless the surrender and renewal were impeached by showing fraud, the reissue must be deemed conclusive proof that the case provided for by the statute existed.³

This view is also taken in *Woodworth v. Stone*, *Allen v. Blunt*,

¹ *Gibson v. Harris*, 1 Blatch. 167. (1846.)

² *The Philadelphia and Trenton R. R. Co. v. Stimpson*, 14 Pet. 448.

³ *Stimpson v. Westchester R. R. Co.* 4 How. 380.

incidentally affirmed in *O'Reilly v. Morse*, and expressly affirmed in *Potter v. Holland*.¹

¹ *Woodworth v. Stone*, 3 Story's R. 749, 753. In this case, which was in equity, the learned judge said: "But the most material objection taken is, that the new patent is not for the same invention as that which has been surrendered. And certainly, if this be correct, there is a fatal objection to the prolongation of the injunction. But is the objection well founded, in point of fact? It is said, that the present patent is for a combination only, and that the old patent was for a combination and something more, or different. But I apprehend that, upon the face of the present patent, the question is scarcely open for the consideration of the court; and, at all events, certainly not open in this stage of the cause. I have already, in another cause, had occasion to decide, that where the Commissioner of Patents accepts a surrender of an old patent and grants a new one, under the act of 1836, ch. 357, his decision, being an act expressly confided to him by law, and dependent upon his judgment, is not re-examinable elsewhere; and that the court must take it to be a lawful exercise of his authority, unless it is apparent, upon the very face of the patent, that he has exceeded his authority, and there is a clear repugnancy between the old and the new patent, or the new one has been obtained by collusion between the commissioner and the patentee. Now, upon the face of it, the new patent, in the present case, purports to be for the same invention and none other, that is contained in the old patent. The avowed difference between the new and the old is, that the specification in the old is defective, and that the defect is intended to be remedied in the new patent. It is upon this very ground that the old patent was surrendered and the new patent was granted. The claim in the new patent is not of any new invention, but of the old invention more perfectly described and ascertained. It is manifest that, in the first instance, the commissioner was the proper judge whether the invention was the same or not, and whether there was any deficit in the specification or not, by inadvertence, accident, or mistake; and consequently, he must have decided that the combination of machinery claimed in the old patent was, in substance, the same combination and invention claimed and described in the new. My impression is, that at the former trial of the old patent before me, I held the claim substantially (although obscurely worded) to be a claim for the invention of a particular combination of machinery, for planing, tonguing, and grooving, and dressing boards, &c.; or, in other words, that it was the claim of an invention of a planing-machine or planing apparatus such as he had described in his specification.

"It appears to me, therefore, that *primâ facie*, and at all events in this stage of the cause, it must be taken to be true, that the new patent is for the same invention as the old patent; and that the only difference is, not in the invention itself, but in the specification of it. In the old, it was defectively described and claimed. In the new, the defects are intended to be remedied. Whether they are effectually remedied is a point not now properly before the court. But as the commissioner of patents has granted the new patent as for the same invention as the old, it does not appear to me that this court is now at liberty to reverse his judgment, or to say that he has been guilty of an excess of authority, at least (as has been already suggested) not in this stage of the cause; for that would be for the court

§ 283. Mr. Justice Story has held that the statutes which authorize the reissue of a patent because of a defective or re- of itself to assume to decide many matters of fact as to the specification and the combination of machinery in both patents, without any adequate means of knowledge or of guarding itself from gross error. For the purpose of the injunction, if for nothing else, I must take the invention to be the same in both patents, after the Commissioner of Patents has so decided, by granting the new patent."

In *Allen v. Blunt*, 3 Story's R. 742, 743, which was an action at law, the same Judge observed: "The thirteenth section of the Patent Act of 1836, ch. 357, enacts, that whenever any patent shall be inoperative or invalid, by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had, or shall have a right to claim as new, if the error has or shall have arisen by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it shall be lawful for the commissioner, upon the surrender to him of such patent, and the payment of the further duty of fifteen dollars, to cause a new patent to be issued for the same invention for the residue of the term then unexpired, for which the original patent was granted, in accordance with the patentee's corrected description and specification. Now, the specification may be defective or insufficient, either by a mistake of law, as to what is required to be stated therein in respect to the claim of the inventor, or by a mistake of fact, in omitting things which are indispensable to the completeness and exactness of the description of the invention, or of the mode of constructing, or making, or using the same. Whether the invention claimed in the original patent, and that claimed in the new amended patent, is substantially the same, is and must be in many cases a matter of great nicety and difficulty to decide. It may involve consideration of fact as well as of law. Who is to decide the question? The true answer is, the Commissioner of Patents; for the law intrusts him with the authority, not only to accept the surrender, but to grant the new amended patent. He is bound, therefore, by the very nature of his duties to inquire into and ascertain whether the specification is sufficient or insufficient, in point of law or fact, and whether the inventor has claimed more than he has invented, and in such case, whether the error has arisen from inadvertency, accident, or mistake, or with a fraudulent or deceptive intention. No one can well doubt, that in the first instance, therefore, he is bound to decide the whole law and facts arising under the application for the new patent. *Primâ facie*, therefore, it must be presumed that the new amended patent has been properly and rightfully granted by him. I very much doubt whether his decision is or can be re-examinable in any other place, or in any other tribunal, at least, unless his decision is impeached on account of gross fraud or connivance between him and the patentee; or unless his excess of authority is manifest upon the very face of the papers; as, for example, if the original patent were for a chemical combination, and the new amended patent were for a machine. In other cases, it seems to me, that the law, having entrusted him with authority to ascertain the facts, and to grant the patent, his decision, *bonâ fide* made, is conclusive. It is like many other cases, where the law has referred the decision of a matter to the sound discretion of a public officer, whose adjudication becomes conclusive. Suppose the Secretary of the Treasury should remit a penalty or forfeiture incurred

dundant specification, without fraud or for the purpose of adding thereto an improvement, do not require the patentee to claim in his renewed patent all things which were claimed in his original patent, but give him the privilege of retaining whatever he deems proper.¹

by a breach of the laws of the United States, would his decision be re-examinable in any court of law upon a suit for the penalty or forfeiture? The President of the United States is by law invested with authority to call forth the militia to suppress insurrections, to repel invasions, and to execute the laws of the Union; and it has been held by the Supreme Court of the United States, that his decision as to the occurrence of the exigency is conclusive. *Martin v. Mott*, 12 Wheat. R. 19. In short, it may be laid down as a general rule, that, where a particular authority is confided to a public officer, to be exercised by him in his discretion upon the examination of facts, of which he is made the appropriate judge, his decision upon these facts is, in the absence of any controlling provisions, absolutely conclusive as to the existence of those facts. My opinion, therefore, is, that the grant of the present amended patent by the Commissioner of Patents is conclusive as to the existence of all the facts, which were by law necessary to entitle him to issue it; at least, unless it was apparent on the very face of the patent itself, without any auxiliary evidence, that he was guilty of a clear excess of authority, or that the patent was procured by a fraud between him and the patentee, which is not pretended in the present case."

Potter et al. v. Holland. "The power and duty of granting a new patent for the original invention, when a lawful surrender of the old patent has been made, are by law expressly confided to the commissioner. The decision made by him in this case is that the reissued patents are for the same invention originally discovered and intended by the patentee to be secured by the original patent. That decision the law has confided to his judgment. The court must take that decision as a lawful exercise of his authority. It is not re-examinable here, unless it is apparent upon the face of the patent that the commissioner has exceeded his authority, or unless there is a clear repugnancy between the old and the new patents, or unless the new one has been obtained by collusion between the commissioner and the patentee. *Woodworth v. Stone*, 3 Story, 749. It is not apparent upon the face of either of the reissued patents that the commissioner, in granting the same, has exceeded his authority; neither does there appear to be any clear repugnancy between the old and the new patents; nor is there any satisfactory evidence to show that either of the new patents was obtained by collusion between the commissioner and patentee. The exception, therefore, taken by the defendant, that the invention secured by the reissued patents was not the invention of the patentee when the original patent was granted, and was not intended by him to be secured by that patent, must fail." MS.

¹ *Carver v. The Braintree Manuf. Co.* 2 Story, 438. "The next objection is, that the patentee has omitted some things in his renewed patent which he claimed in his original patent as a part of his invention, viz., the knob, the ridge, and the flaring of the lateral surface of the rib above the saw, and that he claims in his renewed patent the combination of the thickness and the slope of the front

§ 284. When a patent is thus reissued, it is granted for the unexpired term, commencing from the date of the original patent, and back surfaces of the rib. Now by § 13 of act 1836, ch. 357, it is provided, that whenever any patent which is granted 'shall be inoperative or invalid by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had or shall have a right to claim as new, if the error shall have arisen by inadvertency, mistake, or accident, and without any fraudulent or deceptive intention, it shall be lawful for the commissioner, upon the surrender to him of such patent, and the payment of the further sum of fifteen dollars, to cause a new patent to be issued to the inventor for the same invention for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification.' And it is afterwards added, that, 'whenever the original patentee shall be desirous of adding the description of any new improvement of the original invention or discovery which shall have been invented or discovered by him subsequent to the date of his patent, he may, like proceedings being had in all respects as in the case of original applications, and on the payment of fifteen dollars, as hereinbefore provided, have the same annexed to the original description and specification.' Abrogated by act 1861, ch. 88, § 9. The act of 1837, ch. 45, § 8, further provides, 'that whenever any application shall be made to the commissioner for any addition of a newly discovered improvement to be made to an existing patent, or whenever a patent shall be returned for correction and reissue, the specification annexed to every such patent shall be subject to revision and restriction in the same manner as original applications for patents; the commissioner shall not add any such improvements to the patent in the one case, nor grant the reissue in the other case, until the applicant shall have entered a disclaimer, or altered his specification of claim, in accordance with the decision of the commissioner. Act 1836, ch. 357, § 15.

"Now I see nothing in these provisions which, upon a reissue of a patent, requires the patentee to claim all things in the renewed patent which were claimed as his original invention or part of his invention in his original patent. On the contrary, if his original patent claimed too much, or if the commissioner deemed it right to restrict the specification, and the patentee acquiesced therein, it seems to me that in each case the renewed patent, if it claimed less than the original, would be equally valid. A specification may be invalid and unmaintainable under the Patent Act, as well by an excess of claim as by a defect in the mode of stating it. How can the court, in this case, judicially know whether the patentee left out the knob and ridge and flaring of the lateral surface of the rib, in the renewed patent, because he thought they might have a tendency to mislead the public by introducing what, upon further reflection, he deemed immaterial or unessential, and that the patent would thus contain more than was necessary to produce the described effect, and be open to an objection which might be fatal to his right, if it was done to deceive the public. Act 1836, ch. 357, § 15. Or, how can the court judicially know that the commissioner did not positively require this very omission? It is certain that he might have given it his sanction. But I incline very strongly to hold a much broader opinion; and that is, that an in-

which is surrendered. Consequently, it operates from the commencement of the original, and will enure to the benefit of assignees who became such before the reissue, although no assignment is made to them after the reissue.¹

inventor is always at liberty in a renewed patent to omit a part of his original invention, if he deems it expedient, and to retain that part only of his original invention which he deems fit to retain. No harm is done to the public by giving up a part of what he has actually invented, for the public may then use it; and there is nothing in the policy or terms of the Patent Act which prohibits such a restriction.

“The other part of the objection seems to me equally untenable. If the description of the combination of the thickness and the slope of the front and back surfaces of the rib were a part of the plaintiff’s original invention (as the objection itself supposes), and were not fully stated in the original specification, that is exactly such a defect as the Patent Acts allow to be remedied. A specification may be defective, not only in omitting to give a full description of the mode of constructing a machine, but also in omitting to describe fully in the claim the nature and extent and character of the invention itself. Indeed, this latter is the common defect, for which most renewed patents are granted.”

¹ *Woodworth v. Stone*, 3 Story, 749; *Woodworth v. Hall*, 1 Woodb. & Minot, 248. Both of these cases related to the same patent. In the first, Mr. Justice Story said: “If the present case had stood merely upon the original bill, it appears to me clear, that the motion to dissolve the injunction granted upon that bill, ought to prevail, because, by the surrender of the patent, upon which that bill is founded, the right to maintain the same would be entirely gone. I agree that it is not in the power of the patentee, by a surrender of his patent, to affect the rights of third persons, to whom he has previously, by assignment, passed his interest in the whole or a part of the patent, without the consent of such assignees. But here the supplemental bill admits that the assignees, who are parties to the original and supplemental bill, have consented to such a surrender. They have, therefore, adopted it; and it became theirs in the same manner as if it had been their personal act, and done by their authority.

“The question, then, is precisely the same as if the suit were now solely in behalf of the patentee. In order to understand with clearness and accuracy some of the objections to the continuance of the injunction, it may be necessary to state, that the original patent to William Woodworth (the inventor), who is since deceased, was granted on the 27th of December, 1828. Subsequently, under the eighteenth section of the act of 1836, ch. 357, the Commissioner of Patents, on the 16th of November, 1842, recorded the patent in favor of William W. Woodworth, the administrator of William Woodworth (the inventor), for seven years, from the 27th of December, 1842. Congress, by an act passed at the last session (act of 26th of February, ch. 27), extended the time of the patent for seven years, from and after the 27th of December, 1849 (to which time the renewed patent extended); and the Commissioner of Patents was directed to make a certificate of such extension in the name of the administrator of William Woodworth (the inventor), and to append an authenticated copy thereof to the original letters-patent, when-

When a patentee is about to apply for a renewal of his patent, and agrees with another person that, in case of success, he will ever the same shall be requested by the said administrator or his assigns. The Commissioner of Patents, accordingly, on the 3d of March, 1845, at the request of the administrator, made such certificate on the original patent. On the 8th day of July, 1845, the administrator surrendered the renewed patent granted to him, 'on account of a defect in the specification.' The surrender was accepted, and a new patent was granted on the same day to the administrator, reciting the preceding facts, and that the surrender was 'on account of a defective specification,' and declaring that the new patent was extended for fourteen years, from the 27th December, 1828, 'in trust for the heirs at law of the said W. Woodworth (the inventor), their heirs, administrators, or assigns.'

"Now, one of the objections taken to the new patent is, that it is for the term of fourteen years, and not for the term of seven years, or for two successive terms of seven years. But it appears to me that this objection is not well founded, and stands *inter Apices juris*; for the new patent should be granted for the whole term of fourteen years, from the 27th of December, and the legal effect is the same as it would be if the patent was specifically renewed for two successive terms of seven years. The new patent is granted for the unexpired term only, from the date of the grant, viz., for the unexpired period existing on the 8th of July, 1845, by reference to the original grant in December, 1828. It is also suggested, that the patent ought not to have been in trust for the heirs at law of the said W. Woodworth, their heirs, administrators, or assigns. But this is, at most, a mere verbal error, if indeed it has any validity whatsoever; for the new patent will, by operation of law, enure to the sole benefit of the parties in whose favor the law designed it should operate, and not otherwise. It seems to me that the case is directly within the purview of the tenth and thirteenth sections of the act of 1836, ch. 357, taking into consideration their true intent and objects.

"Another objection urged against the continuation of the injunction is, that the breach of the patent assigned in the original bill can have no application to the new patent, and there is no ground to suggest, that, since the injunction was granted, there has been any new breach of the old patent, or any breach of the new patent. But it is by no means necessary that any such new breach should exist. The case is not like that of an action at law for the breach of a patent, to support which it is indispensable to establish a breach before the suit was brought. But in a suit in equity the doctrine is far otherwise. A bill will lie for an injunction, if the patent right is admitted, or has been established upon well-grounded proof of an apprehended intention of the defendant to violate the patent right. A bill, *quia timet*, is an ordinary remedial process in equity. Now, the injunction already granted (supposing both patents to be for the same invention) is *primâ facie* evidence of an intended violation, if not of an actual violation."

In the last case, Mr. Justice Woodbury said: "The original patent for fourteen years, given in December, 1828, expired in 1842, and though it was extended by the board for seven years more, which would last till 1849, and by Congress for seven more, which would not expire till 1856, yet all of these patents were surrendered July 8th, 1845, and a new one taken out for the whole twenty-eight years from December, 1828. This was done, also, with some small amendments"

assign to him the renewed patent; and the patent is renewed, such an agreement is valid, and conveys to the assignee an equitable title, which can be converted into a legal title by paying or offering to pay the stipulated consideration.¹

§ 285. The Supreme Court of the United States have decided, upon great consideration, that the Commissioner of Patents can lawfully receive a surrender of letters-patent for a defective specification, and issue new letters-patent upon an amended specification, after the expiration of the term for which the original term was granted, and pending the existence of an extended term of seven years. Such surrender and renewal may be made at any time during such extended term.²

§ 286. Specifications may also be amended by another process, that of filing a disclaimer, whenever through inadvertency, accident, or mistake, the original claim was too broad, claiming more than or corrections in the old specification of 1828. After these new letters-patent for the whole term, no assignment having been made to Washburn and Brown, but only one previously on the 2d of January, 1843, the plaintiffs contend that all the previous letters being surrendered, and a new specification filed, and new letters issued, any conveyance of any interest under the old letters is inoperative and void under the new ones; and hence that Washburn and Brown possess no interest in these last, and are improperly joined in the bill.

“But my impression, as at present advised, is, that when a patent has been surrendered, and new letters are taken out with an amended specification, the patent has been always considered to operate, except as to suits for violations committed before the amendment, from the commencement of the original term. The amendment is not because the former patent or specification was utterly void, as seems to be the argument, but was defective or doubtful in some particular, which it was expedient to make more clear. But it is still a patent for the same invention. It can by law include no new one, and it covers only the same term of time which the former patent and its extensions did.

“In the present case, these are conceded to have been the facts; and it is an error to suppose that on such facts the new letters ought to operate only from their date. By the very words of those letters, no less than by the reasons of the case as just explained, they relate back to the commencement of the original term, and for many purposes should operate from that time.”

¹ Hartshorn *et al.* v. Day, 19 How. 211.

² Wilson v. Rousseau, 4 How. 646. See also Gibson v. Harris, 1 Blatch. 167; Woodworth v. Edwards, 3 Woodb. & Minot, 120. If a new patent, issued on surrender of an old one, be void for any cause connected with the acts of public officers, it is questionable whether the original patent must not be considered in force till its term had expired. Woodworth v. Hall, 1 Woodb. & Minot, 389.

that of which the patentee was the original or first inventor, provided some material and substantial part of the thing patented is justly and truly his own. Such a disclaimer may be filed in the Patent Office by the patentee, his administrators, executors, and assigns, whether of the whole or of a sectional interest in the patent; and it will thereafter be taken and considered as part of the original specification, to the extent of the interest of the disclaimant in the patent, and by those claiming by or under him, subsequent to the record thereof.¹

§ 287. Patents are sometimes extended by special acts of Congress, passed upon the application of the patentees. By the act of July 4, 1836, ch. 357, § 18, the Secretary of State, the Commissioner of the Patent Office, and the Solicitor of the Treasury were constituted a board of commissioners to hear evidence for and against the extension prayed for, and to decide whether, having due regard to the public interest therein, it is just and proper that the term of the patent should be extended, because the patentee has failed to obtain a reasonable remuneration. The commissioners being satisfied that the patent ought to be renewed, it was made the duty of the Commissioner of Patents to make a certificate on the original patent, showing that it is extended for a further term of seven years from the expiration of the first term.

By the act of 1848, ch. 47, § 1, this power was vested solely in the Commissioner of Patents, who was thereby required to refer the application to the principal examiner, having charge of the class of inventions to which the case belongs, and, upon his report, to grant or refuse the patent, upon the same principles and rules that had governed the board provided by the former act.

But the act of 1861, ch. 88, § 16, enacts, "That all patents *hereafter* granted shall remain in force for the term of *seventeen* years from the date of issue; and all extension of such patents is hereby prohibited." The operation of the statute is that all patents granted after the passage of the act of 1861 are incapable of being extended, except by special act of Congress, while patents granted

¹ Act of 1837, ch. 45, § 7. As to the effect of a disclaimer, see chapter on Action at Law.

"A disclaimer cannot work in favor of an assignee, without his having joined in it, in any suit, either at law or in equity." Per Story, J., in *Wyeth v. Stone*, 1 Story, 273.

before that date may still be extended on application to the commissioner. It therefore remains of importance to ascertain the construction passed by the courts upon the action of the commissioner in granting an extension, whether and to what extent the same is examinable elsewhere.

Upon this point Judge Curtis, in *Clum v. Brewer*, ruled as follows: "Of all matters necessary to an extension there is not only a strong presumption arising from the act of extension, but in respect to the entire merits of the patentee, and the existence of the legal grounds for an extension, the law makes the commissioner the judge, and in the absence of fraud his adjudication is conclusive."¹ Similar language is employed by Judge Nelson in his decision in the case of *Colt v. Young*.² In an earlier case it was held that the decision of the Board of Commissioners of Extension, while conclusive as to the matter of expense, the payment of the money required, and the notice, was not conclusive as to the question of law, whether or not an administrator had a right under the act of 1836 to apply for an extension.³

¹ *Clum v. Brewer*, 2 Curtis, C. C. 306.

² *Colt v. Young*, 2 Blatch. 471.

³ *Brooks et al. v. Bicknell et al.* 3 M'Lean, 250.

CHAPTER VIII.

INFRINGEMENT.

§ 288. THE statute grants to the patentee, for a term not exceeding fourteen years, “the full and exclusive right and liberty of making, using, and vending to others to be used, the invention or discovery”;¹ and it gives a right of action for damages, in case of “making, using, or selling” the thing patented.² No definition of what is to constitute an infringement is given in the statute; but, of course, there is an infringement of the right, when one “makes, uses, or sells a thing” which another has the exclusive right of “making, using, and vending to others to be used.” But what constitutes making, using, and selling, with reference to the various things that may be the subjects of patents, so as to interfere with the exclusive right of the patentee, is left by the statute for judicial interpretation.

§ 289. An infringement takes place whenever a party avails himself of the invention of the patentee, without such variation as will constitute a new discovery;³ or, as it has also been stated,

¹ Act of July 4, 1836, ch. 357, § 5.

² *Ibid*, § 14.

³ In *Walton v. Potter*, *Webs. Pat. Cas.* 585, 586, Sir N. C. Tindall, C. J., said to the jury: “Now, according to the general rule upon this subject, that is a mere question of fact, and peculiarity for the consideration of a jury, and it will be for you to say, under the circumstances that have been brought in review before you, whether that which has been done by the defendants amounts to such an infringement or not. Where a party has obtained a patent for a new invention or a discovery he has made by his own ingenuity, it is not in the power of any other person, simply by varying in form or in immaterial circumstances the nature or subject-matter of that discovery, to obtain either a patent for it himself, or to use it without the leave of the patentee, because that would be in effect and in substance an invasion of the right; and therefore, what you have to look at upon the present occasion, is not simply whether, in form or in circumstances that may be more or less immaterial, that which has been done by the defendants varies from the specification of the plaintiff’s patent, but to see whether in reality, in substance, and in effect, the defendants have availed themselves of the plaintiff’s invention in order to make that fabric, or to make that article which they have sold in the way of their trade; whether, in order to make that, they have availed themselves of the invention of the plaintiff. The course which the evidence has

an infringement is a copy made after and agreeing with the principle laid down in the specification.¹ There will be therefore different modes in which patents may be infringed, according to their subject-matter. Our statute has made use of the phrases "making, using, and vending to others to be used," to comprehend the exclusive right of the patentee; and consequently the making, using, or selling are the modes in which that right may be infringed, according to the nature of the subject-matter. We are now, therefore, to consider the meaning of these phrases, as applied to the infringement of the several classes of things which may be the subjects of letters-patent.

In a recent case it was held, after an elaborate discussion, "That the rights of property and exclusive use granted to a patentee do not extend to a foreign vessel lawfully entering one of our ports; and that the use of such improvement in the construction, fitting out, or equipment of such vessel, while she is coming into or going out of a port of the United States, is not an infringement of the rights of an American patentee, provided it was placed upon her in a foreign port and authorized by the laws of the country to which she belongs."²

taken has made it not an immaterial. but, on the contrary, a very necessary inquiry for you upon this first head of investigation, to determine whether the defendant's patent, which they have taken out, is in effect borrowed from the plaintiff's or not, because there can be no doubt whatever that all the defendants have done they have endeavored to clothe themselves with the right of doing by taking out the subsequent patent of 1839. The only evidence of infringement we have had before us is the purchase at the manufactory of the defendants of that little piece of card which was marked with the initials S. G., and there can be no doubt but that that fabric, which was so produced in evidence before us, is made on the plan and according to the specification of their own patent, and therefore it will be not immaterial to call to your attention upon this first head of inquiry the specification of the plaintiff's, and next that of the defendant's patent, in order that we may compare them together, and see whether there really is that variation in substance so as to give the denomination of a new discovery to what the defendants have done, or whether they are not following out the invention of the plaintiff, with some variation in the description, which may not allow it the name of a new discovery."

¹ *Galloway v. Bleaden*, Webs. Pat. Cas. 523.

² *Browne v. Duchesne*, 19 How. 183, per Taney, C. J.; affirming the previous opinion of Curtis, J., in same case, 2 Curtis, C. C. 371. This opinion is directly opposed to that laid down in the English case of *Caldwell v. Van Vliessingen*, 9 E. L. & Eq. 51, which however, according to Taney, C. J., turned upon the construction given to 32 Hen. VIII. ch. 16, § 9.

§ 290. 1. *As to a Machine.* — When a machine is the subject of a patent, the patent covers both the machine itself, the thing invented, and the mode or process of making it. The statute vests in the patentee the exclusive right of making it, the exclusive right of using it, and the exclusive right of vending it to others to be used. It is, therefore, an infringement to make a patented machine, for use or for sale, though in fact it is neither used nor sold;¹ it is an infringement to use it, though made by another; and it is an infringement to sell it, whether made by

¹ *Whittemore v. Cutter*, 1 Gallis. 429, 433. In this case, Mr. Justice Story said: "Another objection is to the direction that the making of a machine fit for use, and with a design to use it for profit, was an infringement of the patent right, for which an action was given by the statute. This limitation of the making was certainly favorable to the defendant, and it was adopted by the court, from the consideration that it never could have been the intention of the legislature to punish a man who constructed such a machine merely for philosophical experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its described effects. It is now contended by the defendant's counsel, that the making of a machine is, under no circumstances, an infringement of the patent. The first section of the act of 1793 expressly gives to the patentee, &c., 'the full and exclusive right and liberty of making, constructing, using, and vending to others to be used,' the invention or discovery. The fifth section of the same act gives an action against any person who 'shall make, devise, and use or sell,' the same. From some doubt whether the language of the section did not couple the making and *using* together to constitute an offence, so that making without using, or using without making, was not an infringement, the legislature saw fit to repeal that section; and by the third section of the act of 17th April, 1800, ch. 25, gave the action against any person who should "make, devise, use, or sell" the invention. We are not called upon to examine the correctness of the original doubt, but the very change in the structure of the sentence affords a strong presumption that the legislature intended to make every one of the enumerated acts a substantive ground of action. It is argued, however, that the words are to be construed distributively, and that 'making' is meant to be applied to the case of a *composition* of matter, and not to the case of a machine. That it is clear that the use of certain compositions (as patented pills) could not be an infringement, and unless making were so, there would be no remedy in such cases. We cannot feel the force of this distinction. The word 'making' is equally as applicable to machines as to compositions of matter; and we see no difficulty in holding that the using or vending of a patented composition is a violation of the right of the proprietor. It is further argued, that the making of a machine cannot be an offence, because no action lies, except for *actual damage*, and there can be no actual damages, or even a rule for damages, for an infringement by making a machine. We are, however, of opinion, that where the law gives an action for a particular act, the doing of that act imports of itself a damage to the party. Every violation of a right imports some damage, and if none other be proved, the law allows a nominal damage."

one's self or by another ; because the statute vests the exclusive right of doing all these things in the patentee.

A mere workman, however, employed by one who is not the patentee to make parts of the patented machine, is not liable for damages.¹

§ 291. The doctrine suggested by Mr. Justice Story, that the making of a machine for philosophical experiment, or for the purpose of ascertaining its sufficiency to produce the described effect, would not be an infringement, is founded in the supposition that such a making is not injurious to the patentee. It is true, that the making for the purpose of using becomes directly injurious to the patentee, because it deprives him of a purchaser of that which he alone is authorized to construct and sell ; and it is also true, that when the machine is made by one not the patentee, for the mere purpose of experimenting on the sufficiency of the specification, no profits are taken away from the patentee. There is therefore a difference, undoubtedly, in the tendency of the two acts ; but it is not quite clear, that the legislature meant to recognize this difference, or that they used the words "make, use," &c., in any other than their ordinary sense. The prohibition is express, that no other person shall "make" ; and that no other person shall "use" ; and Mr. Justice Washington held that the motive of testing the practical utility of a machine was no answer to a charge of infringement by having "used" it.² But it was held by Mr. Justice Story that the making of a patented machine is an infringement only when it is made for use or for sale, and the doctrine seems to be the same in England.³ The test is, whether the party made the machine with an intent to infringe the patent right, and deprive the owner of the lawful rewards of his discovery.⁴

§ 292. It is said that there may be a constructive using of a

¹ *Delano v. Scott*, 1 Gilpin, 489.

² *Watson v. Bladen*, 4 Wash. 583.

³ In *Jones v. Pearce*, Webs. Pat. Cas. 125, Patteson, J., said, in reply to a question by the jury whether there was any evidence of the defendant having used or sold the wheels : "The terms of the patent are, 'without leave or license make,' &c. Now if he did actually make these wheels, his making them would be a sufficient infringement of the patent, unless he merely made them for his own amusement, or as a model."

⁴ *Sawin v. Guild*, 1 Gallis. 485, 487.

patented machine: as, if a person were to make a machine, in violation of the right of the patentee, or purchase it of one who had so made it, and then hire it out to another person for use, he might, under some circumstances, be held responsible for using it. There is a case, where the plaintiff was the patentee of a machine for making watch-chains, and it appeared that the defendant had made an agreement with one C to purchase of him all the watch-chains, not exceeding five gross a week, which C might be able to manufacture within six months, and C had agreed to devote his whole time and attention to the manufacture of watch-chains, and not to sell or dispose of any of them, so as to interfere with the exclusive privilege secured to the defendant of purchasing the whole quantity which it might be practicable for C to make; and it was proved that the machine used by C, with the knowledge and consent of the defendant, in the manufacture, was the same with that invented by the plaintiff, and that all the watch-chains thus made by C were delivered to the defendant according to the contract; the Supreme Court of the United States held, that if the contract were real and not colorable, and if the defendant had no other connection with C than that which grew out of the contract, it did not amount to a “using” by him of the plaintiff’s machine; but that such a contract, connected with evidence from which the jury might legally infer, either that the machine which was to be employed in the manufacture of the patented article was owned wholly or in part by the defendant, or that it was hired by the defendant for six months, under color of a sale of the articles to be manufactured with it, and with intent to invade the plaintiff’s patent right, would amount to a breach of his right.¹

¹ *Keplinger v. De Young*, 10 Wheaton, 358, 363. Washington, J., delivering the judgment of the court, said: “The only question which is presented by the bill of exceptions to the consideration of this court, is, whether the court below erred in the instruction given to the jury; and this must depend upon the correct construction of the third section of the act of Congress, of the 17th of April, 1800, ch. 179, which enacts, ‘that where any patent shall be granted, pursuant to the act of the 21st of February, 1793, ch. 156, by person without the consent of the patentee, his executors, &c., first obtained in writing, shall make, devise, use, or sell the thing whereof the exclusive right is secured to the said patentee, by such patent, such person so offending shall forfeit and pay to the said patentee a sum equal to three times the actual damage sustained by such patentee,’ &c.

“The contract, taken in connection with the whole of the evidence stated in the bill of exceptions, if the same were believed by the jury, formed most certainly a strong case against the defendant, sufficient to have warranted the jury in in-

§ 293. It seems to be in accordance with the doctrine of this case, to consider that a using of a machine is to be taken as proved,

ferring, either that the machine which was to be employed in the manufacture of watch-chains was owned in whole or in part by the defendant, or that it was hired to the defendant for six months under color of a sale of the articles which might be manufactured with it, and with intent to invade the plaintiff's patent right. Whether the contract, taken in connection with the whole of the evidence, does or does not amount to a hiring by the defendant of the machine, or the use of it for six months, is a point which is not to be considered as being decided either way by the court. The bill of exceptions does not call for an opinion upon it.

“ But the contract taken by itself amounted to no more than an agreement by the defendant to purchase at a fixed price all the watch-chains, not exceeding five gross a week, which Hatch and Kirkner might be able to manufacture in the course of six months, with any machine they might choose to employ; and an agreement on the part of Hatch and Kirkner, to devote their whole time and attention to the manufacture of the chains, and not to sell or dispose of any of them, so as to interfere with the exclusive privilege secured to the defendant, of purchasing the whole quantity which it might be practicable for them to make.

“ If this contract was real, and not colorable, which is the obvious meaning of the instruction, and the defendant had no other connection with H. & K. in regard to these chains than what grew out of it, it would, in the opinion of the court, be an extravagant construction of the patent law, to pronounce that it amounted to a breach of the plaintiff's patent right, by fixing upon the defendant the charge of having used the plaintiff's machine. Such a construction would be highly inconvenient and unjust to the rest of the community, since it might subject any man who might innocently contract with a manufacturer to purchase all the articles which he might be able to make within a limited period, to the heavy penalty inflicted by the act, although he might have been ignorant of the plaintiff's patent, or that a violation of it would be the necessary consequence of the contract. It might possibly extend further, and affect contracts express or implied, though of a more limited character, but equally innocent, as to which, however, it is not the intention of the court to express any opinion, as this case does not call for it.

“ This cause was argued by the plaintiff's counsel, as if the opinion of the court below had been given upon the whole of the evidence. But this was not the case. No instruction was asked for but by the defendant's counsel, and that was confined to a single part of the case, the connection between the defendant and H. & K., in regard to the watch-chains which the latter bound themselves, by their contract, to manufacture and deliver to the former. If the jury had been of opinion, upon the whole of the evidence, that the contract was not a real one, or that that instrument did not constitute the sole connection between those parties, or that the transaction was merely colorable, with a view to evade the law, the jury were not precluded by the instruction from considering the plaintiff's patent right as violated, and finding a verdict accordingly.

either when the party charged has used it himself or has employed others to use it for him, or has profited by the use of it.¹

“Had the plaintiff’s counsel thought proper to call upon the court for an opinion and instruction to the jury, upon any points arising out of the whole or any part of the evidence, it would have been their duty to give an opinion upon such points, leaving the conclusion of fact from the evidence to be drawn by the jury. But this course not having been pursued, this court can take no notice of the evidence, although spread upon the record, except so far as it is connected with the single point upon which the opinion, which is excepted to, was given. As to the residue of that opinion, that ‘the legal aspect of the case would not be changed, although the defendant might, on any occasion, have supplied, at the cost of H. & K., the wire from which the chains so manufactured were made,’ it is quite as free from objection as the preceding part of it, since it stands on precisely the same principle.”

¹ *Woodworth v. Hall*, 1 Woodb. & M. 248, 251. In this case Mr. Justice Woodbury said: “There has been no evidence whatever offered in this case of any use of the planing-machine by Isaac Hall since his license expired, except what is contained in the affidavit of Aaron Pratt. This witness did not see him use it; but made a bargain with him, about the 15th of July, 1845, to plane for the witness certain boards at the ordinary price, intending to set off the amount against rent due from said Isaac.

“Clement Hall, however, was present, and said, ‘we can plane them for you,’ and the work was done; but the witness does not say by whom, nor whether in fact the compensation for it was made to Isaac.

“Against this is the answer of Isaac, responsive to the bill, and sworn to, denying that he had ever used the machine since his license expired; and this agrees with Clement’s assertion in his answer, that the machine was used by him alone. The facts testified by Pratt might, standing alone, be sufficient to justify an inference that Isaac had planed the boards and used the machine.

“In such cases it may be that any workman on the machine, though not interested in it, is liable to be restrained in order to prevent evasions, by treating all as principals who are aiding.

“It is a common case, also, that if one does not in person perform the work, but procures another to do it for his advantage on a machine owned by himself, he can still be restrained, and is estopped from denying, *qui facit per alium, facit per se*. Possibly, too, if one hires another to do work on such a machine, he may be restrained. 4 Mann. & Gran. 179. But it is not necessary to give a decisive opinion on this, after comparing the evidence with the denial in Isaac’s sworn answer.

“After that answer thus testified to as true, the probability is, and it is a construction not inconsistent with the veracity of both Pratt and Isaac, that the boards were planed by Clement alone, and on his own contract, or his own assent to the arrangement, and for his own profit. It would seem also very easy to produce further evidence of the fact of Isaac’s using the machine, or receiving the profits from it, if such was the truth. Until it is produced, the fairest construction of the affidavits and answer are, that Isaac did not work the machine or profit by it. If this construction were not the most reasonable, and did not reconcile what is

§ 294. As to the sale of a patented machine, in order to be an infringement of the right, it must be something more than a sale of the materials, either separate or combined; it must be a sale of a complete machine, for use as a machine, which is patented, in order to render the vendor liable for an infringement of the patent by a "sale."¹

sworn to in the affidavit and answers, the court would still be compelled to refuse to issue an injunction against Isaac, on the affidavit of Pratt alone, for the want of evidence in it to overcome Isaac's answer. Because something more must be produced than the evidence of a single witness to overcome an answer under oath, and responsive to the bill. *Carpenter v. Prov. Wash. Ins. Co.* 4 How. 185. Certainly something more than the evidence of one witness, and he not testifying explicitly that Isaac either owned or worked the machine, or received any of its profits.

"But in respect to the liability of Clement to an injunction, the testimony is very different; and notwithstanding the several ingenious objections that have been urged, I have come to the conclusion that one ought to be issued against him."

¹ A sale of the materials of a patented machine by a sheriff, on execution, is not an infringement. *Sawin v. Guild*, 1 Gallis. 485. In this case, Mr. Justice Story said: "This is an action on the case for the infringement of a patent right of the plaintiffs, obtained in February, 1811, for a machine for cutting brad nails. From the statement of facts agreed by the parties, it appears that defendant is a deputy-sheriff of the county of *Norfolk*, and having an execution in his hands against the plaintiffs for the sum of \$ 567.27 debt, and costs, by virtue of his office seized and sold on said execution the *materials* of three of said patented machines, which were at the time complete and fit for operation, and belonged to the plaintiffs. The purchaser, at the sheriff's sale, has not, at any time since, put either of the said machines in operation; and the whole infringement of the patent consists in the seizure and sale by the defendant as aforesaid. The question submitted to the court is, whether the complete materials, of which a patented machine is composed, can, while such machine is in operation by the legal owner, be seized and sold on an execution against him?"

"The plaintiffs contend that it cannot be so seized and sold, and they rely on the language of the third section of the act of the 17th of April, 1800, ch. 25, which declares that if 'any person, without the consent of the patentee, his or her executors, &c., first obtained in writing, shall make, devise, use, or *sell* the thing, whereof the exclusive right is secured to the said patentee, such person, so offending, shall forfeit,' &c.

"It is a sound rule of law, that every statute is to have a sensible construction; and its language is not to be interpreted so as to introduce public mischiefs, or manifest incongruities, unless the conclusion be unavoidable. If the plaintiffs are right in their construction of the section above stated, it is practicable for a party to lock up his whole property, however great, from the grasp of his creditors, by investing it in profitable patented machines. This would undoubtedly be a great public mischief, and against the whole policy of the law, as to the levy of personal

§ 295. The sale of the articles produced by a patented machine, or by a process which is patented, is not an infringement.¹

property in execution. And upon the same construction this consequence would follow, that every part of the materials of the machine might, when separated, be seized in execution, and yet the whole could not be, when united; for the exemption from seizure is claimed only when the whole is combined and in actual operation under the patent.

“We should not incline to adopt such a construction unless we could give no other reasonable meaning to the statute. By the laws of *Massachusetts*, property like this is not exempted from seizure in execution; and an officer, who neglected to seize, would expose himself to an action for damages, unless some statute of the *United States* should contain a clear exception. No such express exception can be found; and it is inferred to exist only by supposing that the officer would, by *the sale*, make himself a wrong-doer, within the clause of the statute above recited. But, within the very words of that clause, it would be no offence to *seize* the machine in execution. The whole offence must consist in a *sale*. It would therefore follow, that the officer might lawfully seize; and if so, it would be somewhat strange if he could not proceed to do those acts which alone by law could make his seizure effectual.

“This court has already had occasion to consider the clause in question, and upon mature deliberation it has held, that *the making* of a patented machine, to be an offence within the purview of it, must be the making with an intent to use for profit, and not for the mere purpose of philosophical experiment, or to ascertain the verity and exactness of the specification. *Whittemore v. Cutter*, 1 Gallis. p. 429. In other words, that the making must be with an intent to infringe the patent right, and deprive the owner of the lawful rewards of his discovery.

“In the present case, we think that a sale of a patented machine, within the prohibitions of the same clause, must be a sale, not of the materials of a machine, either separate or combined, but of a complete machine, with the right, express or implied, of using the same in the manner secured by the patent. It must be a tortious sale, not for the purpose merely of depriving the owner of the materials, but of the use and benefit of his patent. There is no pretence, in the case before us, that the officer had either sold or guaranteed a right to use the machine in the manner pointed out in the patent right. He sold the *materials* as such, to be applied by the purchaser as he should by law have a right to apply them. The purchaser must therefore act at his own peril, but in no respect can the officer be responsible for his conduct.”

¹ *Boyd v. Brown*, 3 McLean's R. 295. “The complainant filed his bill, representing that he is the legal owner of a certain patent right, within the county of Hamilton, in Ohio, for making bedsteads of a particular construction, which is of great value to him; that the defendant, professing to have a right under the same patent, to make and vend bedsteads in Dearborn County, Indiana, which the complainant does not admit, but denies; that the defendant sends the bedsteads he manufactures to Hamilton County to sell, in violation of the complainant's patent; and he prays that the defendant may be enjoined from manufacturing the article, and vending it within Hamilton County, &c.

But where the specification, although clumsily worded, still contains in substance and intendment a claim for both process and product, the sale or use of the manufactured article will constitute *per se* an infringement. Thus it was held by Mr. Justice Grier, that "The sale or use of the product of a patented machine is no violation of the exclusive right to use, construct, or sell the machine itself; and the patent for a discovery of a new and improved

"The defendant sets up in his answer a right duly assigned to him to make and vend the article in Indiana, and that he is also possessed of an improvement on the same; and he denies that the sales in Hamilton County, complained of by the complainant, are made at his instance or for his benefit. A motion is now made for an injunction, before the case is prepared for a final hearing.

"On the part of the complainant, it is contended that, by his purchase of the right to make and vend the article within Hamilton County, he has an exclusive right to vend as well as to make, and that his right is infringed by the sales complained of; that his right is notorious, and is not only known to the defendant, but to all those who are engaged in the sales stated. If the defendant, who manufactures the bedsteads in Indiana, be actually engaged in the sale of them in Hamilton County, it might be necessary to inquire whether this is a violation of the complainant's right. But, as this fact is denied in the defendant's answer, for the purposes of this motion, the answer must be taken as true, and that question is not necessarily involved.

"The point for consideration is, whether the right of the complainant is infringed by a sale of the article within the limits of the territory claimed by the complainant. It is not difficult to answer this question. We think that the article may be sold at any and every place, by any one who has purchased it for speculation or otherwise.

"There can be no doubt that the original patentee, in selling rights for counties or states, might, by a special covenant, prohibit the assignee from vending the article beyond the limits of his own exclusive right. But in such a case, the remedy would be on contract, and not under the patent law. For that law protects the thing patented, and not the product. The exclusive right to make and use the instruments for the construction of this bedstead in Hamilton County is what the law secures, under his assignment, to the complainant. Any one violates this right who either makes, uses, or sells these instruments within the above limits. But the bedstead, which is the product, so soon as it is sold, mingles with the common mass of property, and is only subject to the general laws of property.

"An individual has a patent right for constructing and using a certain flouring-mill. Now, his exclusive right consists in the construction and use of the mill; the same as the right of the complainant to construct and use the instruments in Hamilton County, by which the bedstead is made. But can the patentee of the mill prohibit others from selling flour in his district? Certainly he could not. The advantage derived from his right is, or may be, the superior quality of the flour, and the facility with which it is manufactured. And this sufficiently illustrates the principle involved in this motion." See further, *Simpson v. Wilson*, 4 Howard, 709.

process, by which any product or manufacture before known in commerce may be made in a better and cheaper manner, grants nothing but the exclusive right to use the process. Where a known manufacture or product is in the market, purchasers are not bound to inquire whether it was made on a patented machine or by a patented process. But if the patentee be the inventor or discoverer of a "new manufacture or composition of matter not known or used by others before his discovery or invention," it is clear that his franchise or sole right to use and vend to others to be used, is the new composition or substance itself. The product and the process constitute one discovery, the exclusive right to vend which, for a limited term, is secured to the inventor or discoverer. Now, what is this India-rubber, cured substantially as described in Mr. Goodyear's description? It is clearly not merely an improved method or process of producing an old and well-known composition or material, but it is a new product, fabric, manufacture, or composition of matter, having qualities possessed by no other known material. This is what is described and claimed in the patent, — a new product as well as a new process. The product and process being both new and proper subjects of a patent, the patentee has a right to prohibit the sale or use of the composition, unless when purchased from persons licensed by him to use the process and vend the product."¹

§ 296. But if the person who sells is connected with the use of the machine, he is responsible as for an infringement; and if a court of equity have jurisdiction of the person, such a vendor may be enjoined, although the machine may be used beyond the jurisdiction of the court.²

¹ *Goodyear v. R. Rand*, 2 Wallace, Circ. C. R. 356. As to the specification in question, and its construction, see *supra*, Chapter on Specification. With regard to the matter of infringement of the process claimed in this patent, see *infra*.

² *Boyd v. McAlpin*, 3 McLean, 427, 429. In this case the same learned judge said: "It is insisted that the sale of the thing manufactured by the patented machine is a violation of the patent. But this position is wholly unsustainable. The patent gives 'the exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement.' A sale of the product of the machine is no violation of the exclusive right to use, construct, or sell the machine itself. If, therefore, the defendant has done nothing more than purchase the bedsteads from Brown, who may manufacture them by an unjustifiable use of the patented machine, still the person who may make the purchase from him

§ 297. The Supreme Court of the United States have decided that an assignment of an exclusive right to use a machine, and to vend the same to others for use, within a specified territory, authorizes the assignee to vend elsewhere, out of that territory, articles manufactured by such machine.¹

Also, that one who is in the lawful use and enjoyment of a patented machine at the time of the expiration of letters-patent, may lawfully continue to use that identical machine, although the term of the letters-patent has been still further extended by a *special*

has a right to sell. The product cannot be reached, except in the hands of one who is in some manner connected with the use of the patented machine.

“There are several patents of mills for the manufacture of flour. Now, to construct a mill patented, or to use one, would be an infringement of the patent. But to sell a barrel of flour manufactured at such mill, by one who had purchased it at the mill, could be no infringement of the patent. And the same may be said of a patented stove, used for baking bread. The purchaser of the bread is guilty of no infringement; but the person who constructed the stove, or who uses it, may be enjoined, and is liable to damages. These cases show that it is not the product, but the thing patented, which may not be constructed, sold, or used. This doctrine is laid down in *Keplinger v. De Young*, 10 Wheat. 358. In that case watch-chains were manufactured by the use of a patented machine, in violation of the right of the patentee; the defendant, by contract, purchased all the chains so manufactured, and the court held, that, as the defendant was only the purchaser of the manufactured article, and had no connection in the use of the machine, that he had not infringed the right of the patentee.

“But in the case under consideration, the bill charges that the defendant, in connection with Brown, constructed the machine patented; and that they use the same in making the bedsteads which the defendant is now selling in the city of Cincinnati. If this allegation of the bill be true, the defendant is so connected with the machine in its construction and use as to make him responsible to the plaintiff. The structure and use of the machine are charged as being done beyond the jurisdiction of the court; but having jurisdiction of the person of the defendant, the court may restrain him from using the machine and selling the product. When the sale of the product is thus connected with the illegal use of the machine patented, the individual is responsible in damages, and the amount of his sales will, in a considerable degree, regulate the extent of his liability.

“Whether, if the defendant acts as a mere agent of Brown, who constructed the patented machine, and uses it in Indiana, in making bedsteads, is responsible in damages for an infringement of the patent and may be enjoined, is a question which need not now be determined. Such a rule would undoubtedly be for the benefit of Brown, who, according to the bill, had openly and continually violated the patent in the construction and use of the machine. There are strong reasons why the interest of the principal should, by an action at law, and also by a bill in chancery, be reached through his agent. Injunction allowed.”

¹ *Simpson v. Wilson*, 4 How. 709.

act of Congress, there being nothing in the act to deprive him of that right.¹ Where a patent is extended under the *general provisions* of the act of 1836, ch. 357, § 18, the assignees and grantees of the right *to use the thing patented* have, by the terms of that act, the right to continue such use to the extent of their respective interests therein.² The assignee of a right to use a patented planing-machine, having the right to continue the use of a particular machine after an extension of the letters-patent, may repair the same, e. g. by replacing the knives when worn out, without destroying the identity of the particular machine and infringing the patentee's right.³ If a license to use be conditioned on the payment of money, the use without such payment will be an infringement of the patent, giving the United States courts jurisdiction, and may be enjoined.⁴

§ 298. 2. *As to a Manufacture or Composition of Matter.* — Assuming that the word is used in our statute to describe the vendible and tangible product of any branch of industry, a patent for a "manufacture" will be infringed by the same acts as a patent for a composition of matter, that is, by making, using, or selling the thing itself, or by importing it from a foreign country where it has been made.⁵

§ 299. In cases of this kind, however, some difficulty may arise as to what constitutes a using. When the subject-matter is the thing produced, the patent will generally also cover the process of making it; as in the case of a paint, a medicine, a stove, or a fabric of cloth. In these cases, a using of the invention would, in one sense, consist in putting it in practice. But the statute vests the exclusive right to use the thing itself in the patentee, because it is the thing produced which is the subject of the patent. Strictly speaking, therefore, the use of the thing at all, in any form of consumption or application, would be an infringement. But as the purpose of the law is to prevent acts injurious to the

¹ *Bloomer v. McQuewan*, 14 How. 539, per Tancy, C. J.; reasserted in *Bloomer v. Millinger*, 1 Wall. 340; *McLean and Nelson, JJ.*, strongly dissenting.

² Cf. *Wilson v. Rousseau*, 4 How. 646.

³ *Wilson v. Simpson*, 9 How. 109.

⁴ *Brooks v. Stolley*, 3 McLean, 523.

⁵ *Walton v. Lavater*, 8 Com. Ben. N. S. 162.

patentee, with as little restraint on the public as possible,¹ it may be necessary to consider whether the word "using" is employed in a limited or an unlimited sense.

§ 300. Whether the dictum of Mr. Justice Story that "the using or vending of a patented composition is a violation of the right of the proprietor,"² can be considered to extend to every form of use, so as to give the proprietor a right to maintain an action, is worthy of consideration. If a patented medicine is made by one not authorized to make it, and is sold to a person who consumes it, it would be a somewhat inconvenient restraint upon the public to hold that the latter is to be considered as using the invention in the sense of the statute. He cannot know that the article is not made by the true proprietor; the probability is that he intends to purchase the genuine composition, and that he is deceived into supposing that he does purchase it. Still, in strictness, he may be held liable to an action for using the thing itself by consuming it.

The sale of a patented article to an agent of the patentee employed to make the purchase on account of the patentee, is not in itself an infringement; but, when accompanied by other circumstances, may be submitted to the jury as evidence of infringement.³ In a recent English case, where the plaintiff claimed, under a patent for "treating chemically the collected contents of sewers and drains in cities, towns, and villages, so that the same may be applied to agricultural and other purposes," by precipitating the animal and vegetable matter in sewage water by hydrate of lime, it was held that the defendants, the Board of Health, had not infringed by applying the process to the deodorization of sewage water, where some precipitate of animal and vegetable matter was produced, which, however, was not used as an article of value, but *bona fide* rejected as an accidental product.⁴

§ 301. It would seem, in regard to all those classes of things which perish in the using, that the use by which they are consumed may be regarded as a violation of the patent right; and

¹ Per Coleridge, J., in *Minter v. Williams*, Webs. Pat. Cas. 135, 138.

² *Whittemore v. Cutter*, 1 Gallis. 429.

³ *Byam v. Bullard*, 1 Curtis, C. C. 100.

⁴ *Higgs v. Goodwin*, 1 Ell., Blackb. & Ell., 529.

that the party may be held responsible for using, who sells, or gives to others to be consumed, the article that is the subject of the patent; because both make use of the invention to the injury of the patentee. In such cases, it matters not whether the party makes the article himself, in violation of a patented process, or procures it to be made by others.¹

§ 302. Where the subject of the patent is a machine, the using it is altogether prohibited by the statute, because it intends to vest in the patentee the full enjoyment of the fruits of his invention, both in the practice of making the machine, and of producing the effect or result intended to be produced by it.

§ 303. Where an order was given to the defendants by a third person to manufacture a patented article, on a model furnished by him, and the order was executed, it was held that the defendants were guilty of an infringement, although, when they began to execute the order, they had no knowledge of the plaintiff's patent.²

§ 304. 3. *An Art.* — Where an art is the subject-matter of a patent, the patent will be infringed by exercising or practising the same art, which will constitute a "using" of the invention or discovery.

It may, however, be doubted whether the mere using of the art or process, especially for a different purpose, and with rejection of the valuable result of that process, is to be considered as an infringement. Thus, in a recent English case, the patent stated that the invention consisted in the use and application of a cer-

¹ *Gibson v. Brand*, 4 Man. & Gr. 179, 196. Tindal, C. J.: "The breach alleged in the declaration is, that the defendant had 'directly and indirectly made, used, and put in practice the said invention, and every part thereof, and counterfeited, imitated, and resembled the same.' The proof in support of the breach was, that an order had been given by the defendant, in England, for the making of silk by the same process as the plaintiffs; which order had been executed in England; and that is enough to satisfy the allegation in the declaration, that the defendant made, used, and put in practice the plaintiff's invention, though the silk was, in fact, made by the agency of others." For the converse of this case, where the defendant infringes by executing an order for another person, see §§ 292, 303.

² *Bryce v. Dorr*, 3 McLean, 582. Two of the articles were made after notice of the patent.

tain chemical agent for the purpose of precipitating the solid animal and vegetable matter contained in sewage water. The Board of Health used the process for the purpose of disinfected and deodorizing sewage water, whereby some precipitate of animal and vegetable matter appeared, which, however, was not used, but rejected as an accidental result. The Queen's Bench held that there was no evidence of an infringement.¹

§ 305. But the great question that arises when an infringement is charged to have taken place, is, whether the two things, one of which is said to be an infringement upon the other, are the same, or different. If they are the same, there is an infringement. If they are different, there is not. But what kind and what degree of resemblance constitute the identity which the patent law designates as an infringement, and what kind and what degree of difference will relieve from this charge, are the difficult and metaphysical questions to be determined in each particular case.²

§ 306. Learned judges have often laid it down that where two things are the same in principle, the one is an infringement upon the other. This mode of stating the general doctrine on which the fact of infringement depends is not quite satisfactory, because that which constitutes the principle of an invention is very likely to be regarded differently by different minds. Still, there is a sense in which the principle of an invention is undoubtedly to be considered in determining whether an infringement has taken place; because we cannot determine whether there is a substantial identity between two things, without first observing the dis-

¹ *Higgs v. Goodwin*, 1 Ell., Bl. & Ell., 529.

² There is a very great dearth of reported cases in our own books, giving with any detail the facts brought out at the trial, on which the infringement depended. The reporters of the Circuit Courts of the United States seem to have acted on the idea that there is nothing to be reported in a patent cause, unless some question of law is raised on motion for a new trial, or for arrest of judgment, &c.; and then we get the facts, only so far as it is convenient for the court to state them, in deciding the questions raised. This is a great mistake. A careful summary of the evidence given on every important trial for infringement of a patent, including the professional characters and qualifications of the witnesses, together with an accurate description of the plaintiff's and defendant's inventions, the rulings of the court in the progress of the trial, and the charge to the jury, would be of great value.

tinguishing characteristics of the one which is taken as the subject of comparison. But I propose, without rejecting the light of any of the cases in which this language is employed, to inquire whether the fact of an infringement may not be tried by a test more definite, precise, and practical.¹

¹ The meaning to be ascribed to the term *principle* of an *invention* or *discovery* has been thus commented on by different judges. Mr. Justice Washington, in *Treadwell v. Bladen*, 4 Wash. 706, said: "What constitutes form, and what principle, is often a nice question to decide; and upon none are the witnesses who are examined in patent causes, even those who are skilled in the particular art, more apt to disagree. It seems to me that the safest guide to accuracy in making the distinction is, first, to ascertain what is the result to be obtained by the discovery; and whatever is essential to that object, independent of the mere form and proportions of the thing used for the purpose, may generally, if not universally, be considered as the principles of the invention."

In *Whittemore v. Cutter*, 1 Gallis. 478, 480, Mr. Justice Story said: "By the principle of a machine (as these words are used in the statute) is not meant the original elementary principles of motion, which philosophy and science have discovered, but the *modus operandi*, the peculiar device or manner of producing any given effect. The expansive powers of steam, and the mechanical powers of wheels, have been understood for many ages; yet a machine may well employ either the one or the other, and yet be so entirely new, in its mode of applying these elements, as to entitle the party to a patent for his whole combination. The intrinsic difficulty is to ascertain, in complicated cases like the present, the exact boundaries between what was known and used before, and what is new, in the *mode of operation*." In *Barrett v. Hall*, 1 Mas. 447, 470, the same learned judge said: "As to the opinion of skilful witnesses, whether the principles of two machines are the same, no person doubts that it is competent evidence to be introduced into a patent cause. But care should be taken to distinguish what is meant by a principle. In the minds of some men a principle means an elementary truth, or power, so that, in the view of such men, all machines which perform their appropriate functions by motion, in whatever way produced, are alike in principle, since motion is the element employed. No one, however, in the least acquainted with law would for a moment contend that a principle in this sense is the subject of a patent; and if it were otherwise, it would put an end to all patents for all machines which employed motion, for this has been known as a principle or elementary power from the beginning of time. The true legal meaning of the principle of a machine, with reference to the Patent Act, is the peculiar structure or constituent parts of such machine. And in this view the question may be very properly asked, in cases of doubt and complexity, of skilful persons, whether the principles of two machines be the same or different. Now the principles of two machines may be the same, although the form or proportions may be different. They may substantially employ the same power in the same way, though the external mechanism be apparently different. On the other hand, the principles of two machines may be very different, although their external structure may have great similarity in many respects. It would be exceedingly difficult to contend,

§ 307. An infringement involves substantial identity, whether that identity is described by the terms, "same principle," "same *modus operandi*," or any other. It is a copy of the thing described in the specification of the patentee, either without variation, or with only such variations as are consistent with its being in substance the same thing.¹ What will amount to such a substantial identity cannot be stated in general terms; we can only look to individual cases for illustrations and applications of the general doctrine.

Thus, in *Aiken v. Bemis*,² Woodbury, J., uses the following language: "The present was a case of the former character, for a combination, and the difference in the patent from the instrument here consists in this, that the hammer of the saw-set was all made of steel by Bemis, and that all but the point was made of wrought-iron in the patent. This looks, at first blush, as not a very material difference, and one rather colorable or accidental than designed. But when we advert to the evidence in the case, it appears that the use of wrought-iron was found by experiment to be much better than steel, and was hence patented, and this without making the specification in terms broad enough to cover steel also. It is a matter of doubt, therefore, whether the use of an inferior material for the hammer of the saw-set, when the patent covers only a superior one, is a legal violation of it. Why should the plaintiff complain of what he had tried, but deemed too useless that a machine, which raised water by a lever, was the same in principle with a machine which raised it by a screw, a pulley, or a wedge, whatever, in other respects, might be the similarity of the apparatus." See note on the "Principle of an Invention," at the end of this chapter.

¹ In *Walton v. Potter*, Webs. Pat. Cas. 586, Sir N. C. Tindal, Ch. J., said: "Where a party has obtained a patent for a new invention or a discovery he has made by his own ingenuity, it is not in the power of any other person, simply by varying in form or in immaterial circumstances, the nature or subject-matter of that discovery, to obtain either a patent for it himself, or to use it without the leave of the patentee, because that would be in effect and in substance an invasion of the right; and, therefore, what you have to look at upon the present occasion, is not simply whether in form or in circumstances, that may be more or less immaterial, that which has been done by the defendants varies from the specification of the plaintiff's patent, but to see whether, in reality, in substance, and in effect, the defendants have availed themselves of the plaintiff's invention in order to make that fabric, or to make that article which they have sold in the way of their trade; whether, in order to make that, they have availed themselves of the invention of the plaintiff."

² 3 Woodb. & Minot, 348.

or valueless to be adopted? Had the patent extended only to the form or parts of the saw-set, combined as set out and made of any kind of materials, or saying nothing of the materials, the right would be violated by a machine of like form, as the form would be the sole matter patented. But when the patentee chooses to go further, and cover, with his patent, the material of which a part of his machine is composed, he entirely endangers his right to prosecute when a different and inferior material is employed, especially one which he himself, after repeated experiments, had rejected."

§ 308. If the invention of the patentee be a machine, it will be infringed by a machine which incorporates in its structure and operation the substance of the invention; that is, by an arrangement of mechanism which performs the same service or produces the same effect in the same way, or substantially the same way. But perhaps the only method of satisfactorily explaining what is meant by operating in the same or substantially the same way, is to cite from the instructions of the courts on this question in several of the leading patent cases. Thus, in *Wyeth v. Stone*,¹ Mr. Justice Story charged as follows: "It (the defendant's machine) is substantially, in its mode of operation, the same as Wyeth's machine; and it copies his entire cutter; the only important difference seems to be that Wyeth's machine has a double series of cutters on parallel planes, and the machine of the defendant's has a single series of chisels in one plane. Both machines have a succession of chisels, each of which is progressively below the other, with a proper guide placed at such a distance as the party may choose, to regulate the movement; and in this succession of chisels, one below the other, on one plate or frame, consists the substance of Wyeth's invention. The guide in Wyeth's machine is the duplicate of his chisel plate or frame; the guide in the defendant's machine is simply a smooth iron on a level with the cutting-chisel frame or plate. Each performs the same service substantially in the same way." In *Odiorne v. Winkley*,² the same learned judge said: "It is often a point of intrinsic difficulty to decide whether one machine operates upon the same principles as another. In the present improved state of mechanics, the same elements of motion and the same powers must be

¹ *Wyeth v. Stone*, 1 Story's R. 273.

² *Odiorne v. Winkley*, 2 Gallison, 51.

employed in almost all machines. The lever, the wheel, and the screw are powers well known ; and if no person could be entitled to a patent who used them in his machine, it would be in vain to seek for a patent. The material question, therefore, is not whether the same elements of motion or the same component parts are used, but whether the given effect is produced substantially by the same mode of operation and the same combination of powers in both machines. Mere colorable differences or slight improvements cannot shake the right of the original inventor. To illustrate these positions, suppose a watch was first invented by a person so as to mark the *hours* only, and a second person added the work to mark the *minutes*, and a third the *seconds* ; each of them using the same combinations and mode of operation to mark the hours as the first. In such a case the inventor of the second-hand could not have entitled himself to a patent embracing the inventions of the other parties. Each inventor would undoubtedly be entitled to his own invention and no more. In the machines before the court, there are three great stages in the operation, each producing a given and distinct effect : (1.) The cutting of the nail for the head ; (2.) The gripping of the nail ; (3.) The heading of the nail. If one person had invented the cutting, a second the gripping, and a third the heading, it is clear that neither could entitle himself to a patent for the whole of a machine which embraced the inventions of the other two, and by the same mode of operation produced the same effect ; and if he did, his patent would be void. Some machines are too simple to be thus separately considered ; others, again, are so complex, as to be invented by a succession of improvements, each added to the other. And on the whole, in the present case, the question for the jury is, whether, taking Reed's machine and Perkins's machine together, and considering them in their various combinations, they are machines constructed substantially upon the same principles and upon the same mode of operation."

One machine is the same in substance as another, if the principle be the same in effect, though the form of the machine be different. Thus in *Boville v. Moore*,¹ Gibbs, C. J., said : " I remember that was the expedient used by a man in Cornwall, who endeavored to pirate the steam-engine. He produced an engine which, on the first view of it, had not the least resemblance to Boulton and Watt's engine ; where you looked for the head you found the feet,

¹ *Boville v. Moore*, Dav. Pat. Cas. 361, 405.

and where you looked for the feet you found the head ; but it turned out that he had taken the principle of Boulton and Watt's ; it acted as well one way as the other ; but if you set it upright, it was exactly Boulton and Watt's engine. So here I make the same observation, because I observe it is stated that one acts upwards and the other downwards ; one commences from the bottom and produces the lace by an upward operation, the other acts from above and produces it by an operation downwards ; but that, if the principle be the same, must be considered as the same in point of invention."¹

In *McCormick v. Seymour*,² Nelson, J., gave the following instructions: "The next objection taken by the defendants is that, assuming the divider of the plaintiff to be new and useful and patentable, and that he is entitled to the enjoyment of it free from any interference, still he is not entitled to recover, because the defendants have not used his separator, but a different contrivance. In order to take the separator of the defendants out of the charge of infringement, it is necessary that they should satisfy you that it is substantially and materially different from the plaintiff's ; in other words, that it involves some new idea in its construction not to be found in the plaintiff's. If it is found there, of course it is an appropriation of his invention. If not, then it is an independent improvement and no violation of the plaintiff's right. It is proper to observe, in respect to this particular question, that whether the separator of the defendants be or be not an interference with that of the patentee, will depend upon this, whether the plan which the defendants have employed, in constructing their separator and dividing the grain, is or is not in substance the same as the plaintiff's, and whether or not the differences that have been introduced by the defendants in their form of construction and in accomplishing the design which all these separators seek to accomplish, are merely differences in things not material or important ; in other words, whether their plan is, in substance and effect, a colorable evasion of the plaintiff's contrivance, or whether it is new, and substantially a different thing. If the defendants have taken the same general plan and applied it for the same purpose, although they may have varied the mode of construction, it will still be, substantially and in the eye of the patent law, the same thing. Otherwise it will not."

¹ Compare *Buck v. Hermance*, 2 Blatchf. 398.

² *McCormick v. Seymour*, 2 Blatchf. 240.

To the same effect, in *Blanchard v. Beers*,¹ the same judge said: "It is material, at this stage of the case, to recall your attention to a principle already stated, namely, that whether or not the one machine is an infringement of the other, does not necessarily depend upon whether their mechanical structures are different. But the question is, whether (whatever may be the mechanical construction) the later machine contains the means or combination found in the previous machine, — whether, taking the structure as you find it, you see the new idea embodied in it. If the combination of Blanchard is found substantially incorporated in the defendant's machine, then its mechanical construction, whatever it may be, is, as matter of law, but an equivalent for the mechanical construction of Blanchard's machine. No man can appropriate the benefit of the new ideas which another has originated and put into practical use, because he may have been enabled by superior mechanical skill to embody them in a form different in appearance or different in reality. For although he may not have preserved the exterior appearance of the previous machine, he may have appropriated the ideas which gave to it all its value. . . . It is unfair, when the question is between Blanchard's machine thus organized and a machine organized for one particular purpose and to produce one particular result of Blanchard's machine, such as the wagon-spoke, to hold that, because the machine organized for that specific purpose is differently constructed and dissimilar in appearance, and can produce the particular thing more rapidly, it therefore necessarily fails to embody the same idea or combination. We know that any machine constructed to accomplish a particular object or purpose may be often materially changed from the original construction, and yet do the work very well. There are mechanical equivalents, by the use of which the whole features may be changed, and a great departure made from the apparent principle and combination of the machine, and yet it may operate well. In view of this consideration, it should be particularly noticed, in this case, that the defendant's machine has been constructed for one object, — for the purpose of turning wagon-spokes of slight irregularity of form, and therefore, as is obvious, may admit of very material changes from the original machine. It

¹ *Blanchard v. Beers*, 2 Blatchf. 418. Compare *McCormick v. Talcott*, 20 How. 402; *Winans v. Denmead*, 15 How. 332; *Sickels v. Borden*, 3 Blatchf. 535; *Dobbs v. Penn*, 3 Well. Hurls. & Gord. 427.

will be proper, therefore, for you to look into these two machines and see whether or not the change in the organization of the defendant's machine from the plaintiff's might not have been the production of the skill of a mechanic examining and studying the Blanchard machine with a view to reorganize it and adapt it to the performance of one of its functions, namely, producing an axe-handle or a wagon-spoke. Because, whenever a defendant sets up that he has substantially departed from the existing machine, so as to avoid the consequences of an infringement, it is necessary that he should satisfy the court and jury that his departure has been such as involves invention, and not mere mechanical skill, in order to entitle him to a patent for the discovery. There must be mind and inventive genius involved in it, and not the mere skill of the workman. . . .

“These views present all that I mean to trouble you with upon the main question in the case. As to the fact that the defendant's machine can cut a greater number of spokes in a given time than the plaintiff's, the law is as stated by the counsel on both sides. That fact may be taken into consideration in examining into the question whether or not the principle or combination of the two machines is substantially the same. If it is, then, without regard to the result, and although a greater number of spokes can be made by the defendant's machine in a given time, that machine would still be an infringement. This superiority is sometimes produced by a superior construction of the machine; or it may, in this case, be the result of making one adapted exclusively to the accomplishment of one of the purposes of Blanchard's; or, it may be the result of an improvement on his; but this will not entitle its author to use the principle or combination of Blanchard's.”

To the same effect are the instructions of Sprague, J., in *Howe v. Morton and Howe v. Williams*, MS.: “We find, then, to look at the Williams machine, in the first place, that it has two holding surfaces, between which the cloth is fed by mechanism, — a piece of metal taking hold of the cloth and carrying it along between these two surfaces. That is the sub-combination of Howe's, so far. And that is one material part of the defendant's machine, and found in no machine prior to Howe's; the presser-foot is divided into two parts, operating alternately, one of which is always upon the cloth and pressing it down upon the table; one part presses the

cloth down upon the roughened feeding surface below ; the feeding is done by advancing the roughened surface and then withdrawing it in the same plane ; one part of the presser-foot being raised, that it may not press the cloth down while the roughened surface is retreating ; the other part, in the mean time, being down, holds the cloth in position while the first is up ; these opposing surfaces are holding the cloth all the time between them for the operation of tightening the stitch and for resisting the thrust and retraction of the needle, and keeping the cloth in place while it is fed along. We find, in the next place, that it has two threads, and forms the stitch by the interlocking of these two threads ; and so far, — without speaking of the minor mechanism by which this is accomplished, — so far it is like Howe's ; and Howe's was not anticipated in that respect by any machine prior to his. These sub-combinations are like Howe's. The general combination and arrangement are like Howe's. It is testified by the experts that they are identical ; and I see no reason to doubt that statement.

“ We find, then, that the Williams machine has adopted the general combination and arrangement of Howe's, and some at least of the sub-combinations of Howe's, in which that machine differs from others. Without undertaking, therefore, to go into the minutiae of the mechanism, the Williams machine, in my judgment, contains so much of Howe's sub-combinations and of his general combination and arrangement, that it is an infringement of his patent.

“ The Sloat machine differs not substantially or scarcely at all from Howe's, in the holding apparatus. It has two surfaces, the table, and the presser-foot. The foot presses on the material which is between that and the table, and which is there fed along by the four-motion-feed, as it is sometimes called, not requiring the presser-foot to rise to enable the roughened surface to return. And the same remark applies here as to the Williams machine, that it has these surfaces holding the material for the same operations, — the tightening of the stitch, resisting the thrust and retraction of the needle, and keeping the cloth in its proper place when it is fed.

“ As regards the formation of the stitch, the Sloat machine also uses two threads and makes the interlocking stitch. The shuttle is not carried between the needle and its thread, but the thread of the needle is carried around the shuttle, thus producing the inter-

locking, — the stitch being substantially the same as Howe's and produced by these instruments, — the needle and the shuttle having each its thread, one carried through the loop of the other, in the manner I have described. It is my opinion that the Sloat machine also contains so much of Howe's sub-combination or subordinate parts and of his general combination and arrangement, that it is an infringement of his patent."

§ 309. But if the difference between the two machines is not a mere difference of form, if there is a material alteration of structure, if they are substantially different combinations of mechanism, to effect the same purpose by means which are really not the same in substance, then the one will not be an infringement of the other.¹

¹ *Lowell v. Lewis*, 1 Mas. 182, 191. In this case, Mr. Justice Story said: "The manner in which Mr. *Perkins's* invention is, in his specification, proposed to be used, is in a square pump, with triangular valves, connected in the centre, and resting without any box on the sides of the pump, at such an angle as exactly to fit the four sides. The pump of Mr. *Baker*, on the other hand, is fitted only for a circular tube, with butterfly valves of an oval shape, connected in the centre, and resting, not on the sides of the pump, but on a metal rim, at a given angle, so that the rim may not be exactly in contact with the sides, but the valves may be. If from the whole evidence the jury is satisfied that these differences are mere changes of form, without any material alteration in real structure, then the plaintiff is entitled to recover; if they are substantially different combinations of mechanical parts to effect the same purposes, then the defendant is entitled to a verdict. This is a question of fact, which I leave entirely to the sound judgment of the jury."

In *Gray v. James*, Peters's Circ. C. R. 394, 397, Mr. Justice Washington said: "What constitutes a difference in principle between two machines, is frequently a question of difficulty, more especially if the difference in form is considerable, and the machinery complicated. But we think it may safely be laid down, as a general rule, that where the machines are substantially the same, and operate in the same manner, to produce the same result, they must be in principle the same. I say *substantially*, in order to exclude all formal differences; and when I speak of the same result, I must be understood as meaning *the same kind of result, though it may differ in extent. So that the result is the same, according to this definition, whether the one produce more nails, for instance, in a given space of time, than the other, if the operation is to make nails.*"

The American Pin Co. v. The Oakville Co. 3 Blatch. 190. "Neither of these operations can be found, either in form or in substance, in the Crosby machine (defendants'). There is no hopper in Crosby's machine, unless the inclined channel-way in which the pins hang by their heads in a vertical position, may be considered a hopper. That, if it be considered as a hopper, does not move. It is stationary. Of course it neither slides nor passes over anything. From the lower

Thus, in a recent English case, the *plaintiff's* invention consisted in the application of ventilating vanes or screws at the centre of the stones for supplying the air between the grinding surfaces; a portable ventilating machine, blowing by a screw vane which caused a current of air parallel to the axis of the vane, being attached externally to the eye of the upper mill-stone, and thus the screw vane being set in rapid motion, the air was compelled to pass through the eye into the centre of the stones and so find its way out again; the *defendant's* plan was to remove from the centre of both stones a large circular portion of each, and in this space, opposite to the opening between the two stones to place a fan or blower, by the rapid rotation of which a centrifugal motion was given to the air, and it was driven between the stones. It was held that the one invention was not an infringement of the other, but that each was a new method of accomplishing a well-known object, on the common principle of obtaining a current of air by means of a rotating-vane.¹

extremity of the channel-way, the pins are taken, one by one, by the thread of a screw, while it is revolving and while the pin is vertical, and, by force of mechanical power, the pin is carried in the thread of the screw to the other end of the screw, and is there deposited by the screw, in a horizontal position, in a groove channel. The screw, while operating, has no motion but a revolving motion. During the whole time it remains in the same space. It neither moves forward nor back. There is, then, nothing in the machine which, either in form or in substance, has any resemblance to a sliding hopper, sliding or passing over recesses in a plate to receive the pins as they drop from a hopper, or to recesses for receiving pins sliding or passing under a hopper. In Slocum's machine, one of these processes must take place; and, without one of them, a machine for this purpose cannot be a Slocum machine. In the Slocum machine, the recess in the plate which receives the pin from the hopper must be of the exact size of the barrel of the pin. In the Crosby machine, the recess in the thread of the screw which receives the pin, and by which it is transported to the other end of the screw, and which, it is claimed, is a mechanical equivalent for the recess in the plate with grooves in Slocum's machine, need not be of the exact depth or breadth of the barrel of the pin. It may be of any size, provided it is not sufficiently large to permit the head of the pin to fall through. The essential means used in Crosby's machine to bring about the result, to wit, a separation of the pins from the pile or column, are, therefore, substantially different from the means used in Slocum's machine to produce the same result. In this respect the two machines operate differently and depend upon distinct organizations. The same substantial means are not used in each." Per Ingersoll, J.

¹ *Bovill v. Pimm*, 36 E. L. & Eq. 441. Compare also *Seed v. Higgings*, 8 Ell. & Blackb. 755.

§ 310. But, in cases where the patent is not for a combination, if the principle is applied in the same way as the patentee has applied it, then the absence of two or three things in the defendant's machine, which are mentioned in the specification, will not prevent the patentee from recovering for an infringement.¹ It is in rela-

¹ *Jones v. Pearce*, Webs. Pat. Cas. 122, 124. And if the imitation be so nearly exact as to satisfy the jury that the imitator attempted to copy the model, and to make some almost imperceptible variation, for the purpose of evading the right of the patentee, it may be considered a fraud upon the law, and such slight variation will be disregarded. *Davis v. Palmer*, 2 Brock. 298, 309.

Winans v. Denmead, 15 How. 330. In this case, the claim of the patentee was in the following words: "What I claim as my invention and desire to secure by letters-patent, is, making the body of a car for the transportation of coal, &c., in the form of a frustrum of a cone, substantially as herein described, whereby the force exerted by the weight of the load presses equally in all directions, and does not tend to change the form thereof, so that every part resists its equal proportion, and by which also the lower part is so reduced as to pass down within the truck-frame and between the axles, to lower the centre of gravity of the load without diminishing the capacity of the car as described. I also claim extending the body of the car below the connecting piece of the truck-frame and the line of draft, by passing the connecting bars of the truck-frame and the draft-bar through the body of the car, substantially as described."

The testimony showed that the defendants had made cars similar to the plaintiffs', except that the form was octagonal instead of circular. There was evidence tending to prove that, considered in reference to the practical uses of such a car, the octagonal car was substantially the same as the circular. Among others, James Millholland, called by the defendants, testified, "that the advantage of a reduced bottom of the car was obtained, whether the car was octagonal or conical; that the strengthening of the bottom due to the adoption of a conical form, was the same when the octagonal form was adopted or the circular; that the circular form was the best to resist the pressure, as e. g. in a steam-boiler, and an octagonal one better than the square form; that the octagonal car was not better than the conical; that for practical purposes one was as good as the other; that a polygon of many sides would be equivalent to a circle; that the octagon car, practically, was as good as the conical one; and that, substantially, the witness saw no difference between the two." Curtis, J., in reversing the charge of the circuit judge, said: "Undoubtedly there may be cases in which the letters-patent do include only the particular form described and claimed. *Davis v. Palmer*, 2 Brock. 309, seems to have been one of those cases. But they are in entire accordance with what is above stated. The reason why such a patent covers only one geometrical form, is not that the patentee has described and claimed that form only; it is because that form only is capable of embodying his invention; and consequently, if the form is not copied, the invention is not used. Where form and substance are inseparable, it is enough to look at the form only. Where they are separable, where the whole substance of the invention may be copied in a different form, it is the duty of courts and juries to look through the form for the

tion to this question of substantial identity, that the doctrine of mechanical equivalents becomes practically applicable. This doctrine depends upon the truth that the identity of purpose, and not of form or name, is the true criterion in judging of the similarity or dissimilarity of two pieces of mechanism. The question whether one thing is a mechanical equivalent for another, is a question of fact for the jury, on the testimony of experts, or an inspection of the machines; and it is an inference to be drawn from all the circumstances of the case, by attending to the consideration, whether the contrivance used by the defendant is used for the same purpose, performs the same duties, or is applicable to the same object, as the contrivance used by the patentee.¹ Hence, two things

substance, — for that which entitled the inventor to his patent, and which the patent was designed to secure. Where that is found, there is an infringement; and it is not a defence that it is embodied in a form not described and in terms claimed by the patentee. Patentees sometimes add to their claims an express declaration to the effect that the claim extends to the thing patented, however its form or proportions may be varied. But this is unnecessary. The law so interprets the claim without the addition of these words. The exclusive right to the thing patented is not secured if the public are at liberty to make substantial copies of it, varying its form or proportions. . . . How is a question of infringement of this patent to be tried? It may safely be assumed, that neither the patentee nor any other constructor has made or will make a car exactly circular. In practice deviations from a true circle will always occur. How near to a circle, then, must a car be to a circle, in order to infringe? May it be slightly elliptical or otherwise depart from a true circle, and if so, how far? In our judgment, the only answer that can be given to these questions is, that it must be so near a true circle as substantially to embody the patentee's mode of operation, and thereby attain the same kind of result as was reached by his invention. It is not necessary that the defendant's car should employ the plaintiff's invention to as good advantage as he employed it, or that the result should be precisely the same in degree. It must be the same in kind, and effected by his mode of operation in substance." See also dissenting opinion of Campbell, J.

¹ In *Morgan v. Seaward*, Webs. Pat. Cas. 170, Alderson, B., instructed the jury as follows: "The first defence is, that they did not infringe the patent. That is a question of fact, with regard to which I do not think it is at all material to recapitulate the evidence, for I understand from an intimation you have thrown out, that you entertain no doubt of it, that is, that the one is an infringement of the other. Upon that subject, the question would be, simply, whether the defendants' machine was only colorably different, that is, whether it differed merely in the substitution of what are called mechanical equivalents for the contrivances which are resorted to by the patentee. I think, when you are told what the invention of the plaintiffs' really is, you will see that those differences which Mr. Donkin and others point out as existing between the one machine and the other, are in truth differences which do not affect the principle of the invention. Therefore,

may be mechanical equivalents for each other under some circumstances, which would not be so under different circumstances. Hence, also, the names as well as the forms of things are of comparatively little importance. The question to be determined is, whether, under a variation of form, or by the use of a thing which bears a different name, the defendant accomplishes in his machine the same purpose, object, or effect as that accomplished by the patentee ; or whether there is a real change of structure and purpose.¹

the two machines are alike in principle, one man was the first inventor of the principle, and the other has adopted it ; and though he may have carried it into effect, by substituting one mechanical equivalent for another, still you are to look to the substance, and not to the mere form, and if it is in substance an infringement, you ought to find that it is so. If in principle it is not the same, but really different, then the defendants cannot be said to have infringed the patent. You will, however, when you are considering that subject, remember, that when the model of Mr. Stevens's paddles was put into the hands of Mr. Donkin, he said, at first sight, that it was exactly like the plaintiffs' ; and so like was it as to induce him to say that it was precisely the same in principle, till I pointed out to him a material difference in it, and then it appeared, that though there was a similarity of execution, there was a real difference in principle, therefore it was not similar to the plaintiffs' wheel, though at first sight it had the appearance of being similar. So you see you ought to look always to the substance, and not to the form." In *Webster v. Lowther*, before Lord Tenterden, the jury, upon the evidence of *sportsmen* that the lock with a sliding bolt was more readily used in the field, particularly in wet weather, than the screw and washer, found that the alteration was a material and useful improvement ; and upon evidence *by mechanics*, that a spring in a bolt was the same thing as a bolt sliding in a groove, they found that the defendant had infringed the patent of the plaintiff. Godson on Patents, 232, 233. Here an important advantage was gained, but it was gained by the use of a mechanical equivalent, and consequently the new advantage did not prevent the defendants' lock being an infringement on the plaintiffs'.

¹ Thus, in the old mode of making chains, the different parts of the chain were held together by one branch of the chain being linked within another, or else the different branches were connected together by holes perforated through each, and connected by a pin or screw. Subsequently, a party united these two modes, by inserting one link within the other, and perforating both by a pin. A second inventor then made a chain which united both these principles of support, but in a different manner, by using a piece of metal, *called* a pin, for a totally different purpose, not performing the same duties, or applicable to the same object ; and it was held that he was well entitled to a patent for his invention. In the matter of Cutler's patent, Caveat at the Great Seal, Webs. Pat. Cas. 418, 430. In *Morgan v. Seward*, Webs. Pat. Cas. 167, Sir L. Shadwell, V. C. said : " The question in the case is simply whether the eccentric motion is produced by the adoption of the same combination of machinery by the defendants as the plaintiffs are entitled exclusively to use. Upon reading the specification, it appears that a par-

Thus, the substitution by defendants of a cylinder having a domed or spherical top, for the cone or the cone with the conoidal ticular combination, insisted on, is described under the item rods, bent rods, disk, and crank. If Mr. Galloway had been asked, at the time he gave this description, whether he meant the disk should revolve on a crank only, or that it should be made to revolve by any other suitable means, his reply might have been general; but as he has thought proper to specify a crank, the question to determine is, whether the eccentric axis, with a collar in the defendants' contrivance, is the same as a crank in that of the plaintiffs'. The term "crank" is a relative term, and might have reference to some particular piece of machinery. The arrangement adopted by the defendants is a most important variation from the invention; for instead of weakening the action of the paddle wheel, that is preserved entire, unbroken, and unincumbered. That perpetual vibration or destroying power, as it might be termed, on the outer part of the frame work that supports the wheel, is entirely avoided, and the vibration at the centre of the disk within the wheel is transferred from a part of the machinery least able to bear it to the side of the vessel, that is made strong for the purpose; and although it might be said the action of the rods on one side of the float boards might distort them a little, that inconvenience might be more than counterbalanced by other advantages. The alteration is, therefore, not merely colorable, but *primâ facie* a decided improvement by the introduction into a combination of three things of that which is not noticed at all in the specification."

In *Gray v. Osgood*, Peters's Circ. C. R. 394, 398, may be found a clear illustration of the doctrine of mechanical equivalents. Washington, J., said: "In the former [the plaintiff's machine] we find the two jaws of a vice, the one fixed, and the one movable on a pivot at the top, which connects them together. In each of these jaws is fixed a cutter, the use of which is to cut off from the bar of iron as much as will be necessary to form the nail, which, being separated, falls by its own gravity into a die, which holds it by a firm gripe until the head is formed, by what is called the set, or heading die. The power which produces this double operation, is a lever of the first order, acting upon a toggle-joint, which compresses the two jaws, and consequently the cutters together, and also the set in such a manner as to head the nail. But the whole is performed by the same movement of the lever.

"It is impossible to describe the parts of the defendant's machine, and its operation, without using the same expressions, except that his is inverted, the pivot of the vice being below, and a lever of the second order embracing the jaws with a friction-roller, acting on an inclined plane made on the moving jaw of the vice, instead of the lever of the first order, and the toggle-joint. But it is in full proof that these differences as to the lever and the friction-roller are the necessary consequences of the machine being inverted. After having made this comparison, and ascertained the mode of operation by each machine, connected with the result of each, the jury can find little difficulty in deciding whether they are the same in principle or not.

"The witnesses have differed in opinion as to the comparative merit of the toggle-joint in Perkins's machine, and the friction-roller in Read's. If their operation is precisely the same, the difference in form does not amount to an invention of any kind.

open in the plaintiff's apparatus, — both the defendant's and the plaintiff's apparatus being used for the same purpose and in very nearly the same way, — was held to be strong evidence of infringement.¹

§ 311. If the change introduced by the defendant constitutes a mechanical equivalent, in reference to the means used by the patentee, and, besides being such an equivalent, it accomplishes some other advantage beyond the effect or purpose accomplished by the patentee, it will still be an infringement, as respects what is covered by the patent, although the further advantage may be a patentable subject as an improvement upon the former invention.

Thus, in *Electric Telegraph Co. v. Brest*,² where the patentee's invention was described as an invention of "improvements in giving signals and sounding alarms in distant places, by means of electric currents transmitted through *metallic circuits*; and the defendant's plan was to use the *earth* as a return circuit by plunging the two ends of the wire into it, it was held that such a circuit would, if used in connection with the machinery for signals, be an

"If the friction-roller is better than the toggle-joint, which seems to be the opinion of some of the defendant's witnesses, then Read has the merit of having discovered an improvement on Perkins's machine, and no more.

"If the jury should be of opinion that the parts of the two machines which I have noticed are the same in principle, and that each will by the same operation cut and head nails; then it would follow, that the forcing-slide, the proximity of the cutters and dies to each other, the balance wheel, and some other additional parts in Read's machine, which give it a great and acknowledged preference over Perkins's, are merely improvements, but do not change the principle of the machine. If improvements only, what is the legal consequence? Most clearly this, and no more: that Perkins, and those claiming under his patent, have no right to use those improvements, without a license from the inventor. But on the other hand, neither Read nor any other person can lawfully use the discovery of Perkins of the principal machine without a license from him. The law, wisely and with justice, discriminates between them, and rewards the merit of each by granting an exclusive property to each in his discovery, but prevents either from invading the rights of the other. If then the jury should be of opinion that the two machines are the same in principle, it is no defence for the defendant's, for using Perkins's discovery, that they have improved it, no matter to what extent." So, too, it is wholly immaterial that the defendant's invention is better than that of the plaintiff, unless there is a substantial difference in principle. *Alden v. Dewy*, 1 Story's R. 336, 337.

¹ *In re Newall and Elliot*, 4 Com. Ben. N. s. 269.

² 10 Com. Ben. 838 (a fuller report than that contained in 4 E. L. & Eq. 348).

infringement. In other words, the earth was, as far as the alarm-machinery was concerned, a mere equivalent for the former return wire. Such a circuit might of itself constitute an improvement in telegraphing, which would warrant a separate patent, but no one could use even this or any other circuit in connection with the patented machinery for giving signals, without infringing the same. In this particular case the discovery that the earth would form a return circuit was made after the patentees had obtained their letters-patent.

§ 312. Where the subject-matter of the patent is a manufacture, the same test of substantial identity is to be applied. In many cases of this kind, it will not be by varying in form, or in immaterial circumstances, the nature of the article, or the process by which it is produced, that a party can escape the penalties of infringement. The question will be, whether in reality and in substance the defendant has availed himself of the invention of the patentee, in order to make the fabric or article which he has made. If he has taken the same plan and applied it to the same purpose, notwithstanding he may have varied the process of the application, his manufacture will be substantially identical with that of the patentee.¹

¹ *Walton v. Potter*, Webs. Pat. Cas. 585, 607. In this case Erskine, J., said: "Then there remains the first plea, by which it is denied that the defendants had infringed the patent of the plaintiff, and that depends upon whether the plan which the defendants have employed is in substance the same as the plaintiff's, and whether all the differences which have been introduced by them in the manner of making their cards are not merely differences in circumstances not material, and whether it is not in substance and effect a mere colorable evasion of the plaintiff's patent. The jury, it appears to me, have come to the right conclusion, that this was in effect and substance the same as the plan of the plaintiff. The plaintiff's plan is, the insertion of the teeth through India-rubber, giving to the teeth the additional elasticity of the India-rubber, beyond what the wire had of itself. The defendant's plan is for the same purpose. The only difference is, that the plaintiff, in employing the India-rubber, takes a slice either from the original block, as it is imported into this country, or from the improved block, as it is used after it has been compressed, and places it upon a piece of holland, for the purpose of keeping the teeth more firmly in their places, and then afterwards placing it on the engine, by nailing that holland on the engine, or taking away the holland, and cementing the India-rubber to the cylinder, giving an elasticity to the teeth of the card by the India-rubber, which is next to them. The defendant's plan is to saturate a piece of cloth with India-rubber dissolved, and then to lay upon the surface a further layer of India-rubber on both sides, and then to insert

§ 313. But in regard to another class of cases, it not infrequently happens, that the sole evidence of infringement consists in the similarity of the articles, without any direct evidence of their having been made by the same process. Similarity in appearance and structure will not of itself always establish an infringement; because the patent, though it covers the manufactured article itself, may be for the process of the manufacture. In such cases, the inference that the same process was used must be drawn from the evidence; and the rule was laid down by Lord Ellenborough, that the similarity of structure of two things is presumptive evidence of their being made in the same way.¹

the teeth through the substance of the cloth and the India-rubber. But what is the principle upon which this becomes useful to the card, and the person who employs those cards in the carding of wool? Why it is, that there is upon the surface and the substance of the cloth the elasticity of the India-rubber; that the India-rubber is there in its natural state, having been brought back into its natural state by the evaporation of the material in which it had been first dissolved, for the purpose of first laying it on. The only difference, therefore, is in the mode of laying on the India-rubber for the purpose of having it pierced by the teeth. That appears to me not to be a difference in principle, or a matter which so varies the plan of the defendants from the plan of the plaintiff as to entitle them to call it a new invention, or different from the plaintiff's. It seems to me a mere difference in circumstances not material, and therefore it is an infringement of the plaintiff's right, and the verdict of the jury ought to stand."

Goodyear v. The R. R. 2 Wallace, C. C. 356. "Even assuming this patent to be merely for a process and not for a product or fabric, still, in a question of infringement, the inquiry is, what is the essential or substantial agent in the patentee's process or discovery? The specification affirms it to be a high degree of artificial heat, and that no commixture or combination of substances with caoutchouc will give it these qualities, unless the composition be exposed for a length of time to such high degree of heat. It is clear that the plaintiff claims the vulcanization of rubber and sulphur by artificial heat however produced. The modes of producing heat are very numerous and extremely different. But the result is the same. Heat is heat, however produced, or by whatsoever agent. The method of communicating heat is not the thing patented; and even if it were the thing, and steam were a patented invention or discovery, made since the patent of Goodyear, while Goodyear could not use it, still the defendant could not, by applying this new form of heat to the curing of India-rubber, go on and destroy all Goodyear's patent rights. But steam is not patented by Goodyear nor by anybody to cure rubber. On the contrary, it is curing rubber by artificial heat that is patented. Steam is indeed an effect of heat on water, but it is also heat itself. We have therefore no doubt that the use of steam in place of heated air, in the manufacture of India-rubber, is an infringement of the patent of Goodyear."

¹ *Huddart v. Grimshaw*, Webs. Pat. Cas. 85, 91. This is a very instructive case. The plaintiff's patent was for "a new mode of making great cables and

§ 314. In such cases, where the object to be accomplished is open to the public, notwithstanding the patent, provided it can be accomplished in several modes, which, as processes, are substantially different, an infringement must be in respect of the process used by the patentee. But unless it appears that the article itself could be produced by another process, constituting an independent discovery, then an infringement may be proved by the making of the article. The burden of proof is always on the plaintiff, to show that his process has been infringed; and in the absence of direct evidence, the similarity of the effect produced will generally be sufficient to establish an infringement, and if this is aided by evidence of the use of similar apparatus, the presumption of a use of the same process will be still stronger.¹ Or, to state this in other words, where the invention, or subject-matter of the patent, is an entirely new manufacture, it is immaterial by what process it is produced, since the infringement must consist in making the same thing, whether by one process or another. But where the invention or subject-matter is the process of making a particular thing, which may be made by more than one process, the inquiry will be whether it has been made by the use of the process covered by the patent. In such cases, the identity of the manufactured article is, with all the other circumstances, competent evidence,

other cordage, so as to attain a greater degree of strength therein, by a more equal distribution of the strain upon the yarns." Pieces of cordage made by the defendant were put into the hands of the plaintiff's witnesses, and from the fact that the same effect was produced in them, and from the similarity of structure, they gave the opinion that they were made by the same process as the plaintiff's. This was the question at issue, on the point of infringement. The object to be accomplished, the making a stronger rope, was clearly open to the public. Lord Ellenborough said that it had happened to him in the same morning, to give, as far as he was concerned, his consent to the granting of three different patents for the same thing; but the modes of attaining it were all different. But it did not follow that the plaintiff's *method of attaining the object* was open to the public; and therefore the question for the jury was, whether the defendant had used the plaintiff's method, or some other.

¹ See the preceding note and the case there cited. See also the more recent case of *Hall v. Boot*, Webs. Pat. Cas. 100, 102. Hall's patent was for a new method of singeing off the superfluous fibres upon lace, by means of the flame of gas. The evidence to show the infringement consisted of proof that the defendant had secretly prepared a gas apparatus similar to that used by the plaintiff, and that lace left with the defendant to be dressed had been returned in the state to which it would have been brought by the plaintiff's process, and that similar lace had been offered for sale by the defendant. The plaintiff had a verdict.

from which the jury are to infer that it was made by the process of the patentee; although there may be cases, where, from the nature of the article, this proof would be less strong, according as it appeared to be possible or probable that the article could be made by more than one process. The burden of proof of the infringement is upon the plaintiff throughout; and although it does not appear that the article could be made by another process, the jury must still draw the inference, from the identity of the manufacture, if that is all the evidence, or from that and the other evidence, that it was made by the patentee's process.

However, in a subsequent case it was held, *per totam curiam*, that where the specification stated the invention to relate to "a mode of manufacturing candles by the application of two or more plaited wicks in each candle," and set out at length the mode of so placing the wicks, that in burning the ends always turned outwards, — the mere production of a candle, made at defendant's factory, in which the wicks turned outward in burning, was no evidence of infringement.¹

§ 315. But a much more difficult class of cases arises under those patents where the subject-matter is the application of a principle, by means of a process or method, in order to produce a particular effect. We have already had occasion to consider when such an invention or discovery is the proper subject-matter of a patent. We have seen that, under some circumstances, the discovery of a principle may, by application in the arts, be protected by a patent; and we have now to consider how far the proprietor of such a patent may protect himself against the use of the same principle by others; or, in other words, what will constitute an infringement of his right.

§ 316. In this inquiry, the first thing to be attended to is the subject-matter of the patent. A clear idea is to be formed of the object of the patent; and provided the specification properly points out what the claim of the patentee is, it is not material in what form his claim is presented, or whether, in form, the patent purports to be for a process or a manufacture. Wherever the real subject covered by the patent is the application of a principle, in arts or manufactures, the question, on an infringement, will be as

¹ *Palmer v. Wagstaffe*, 25 E. L. & Eq. 535.

to the substantial identity of the principle, and of the application of the principle; and consequently the means, machinery, forms, or modifications of matter made use of will be material, only so far as they affect the identity of the application.

§ 317. Thus in Forsyth's patent, the subject-matter was the use and application of detonating powder as priming, for the explosion of gunpowder; and it was held that whatever the construction of the lock by which the powder was to be discharged, the use of detonating mixture as priming was an infringement.¹ So, too, where the claim of the patentee was for "the application of a self-adjusting leverage to the back and seat of a chair, whereby the weight and the seat act as a counterbalance to the pressure against the back of such chair," it was held, that a chair made in any way upon this principle was an infringement.² In like manner, where the principle of the invention was the welding of iron tubes by pressure of the edges of the iron, when heated, without the use of a maundril, or other internal support, it was held that a variation from the plaintiff's mode of applying the pressure, the application of the principle being the same, was still an infringement.³

§ 318. Clegg's patent was for the application of a law of natural science respecting the motion of fluids and solids, and the alternate filling and discharging of a vessel of gas, by means of that application; the object being to obtain an instrument for measuring the quantity of gas supplied to the consumer. The scientific witnesses said, that the moment a practical scientific man had got that principle, he could multiply without end the forms in which it could be made to operate. The instrument used by the defendant was different in form and construction from that used by the patentee; but the application of the principle, by means of a varied apparatus, was the same in both; and it was held to be an infringement.⁴

¹ Forsyth's patent, Webs. Pat. Cas. 95; Forsyth *v.* Riviere, *Ib.* 97, note.

² Minter *v.* Wells, Webs. Pat. Cas. 127, 134.

³ Russell *v.* Cowley, Webs. Pat. Cas. 459, 462. See the extracts in the note, *ante*, § 79, p. 69.

⁴ Cited in *Jupe v. Pratt*, Webs. Pat. Cas. 146. Alderson, B., said: "It was for measuring the quantity of gas that was supplied to every individual, in order that they might not take it without being known. There never was a more instructive case than that; I remember very well the argument put by the Lord

§ 319. In Neilson's patent, the invention consisted in the application of hot air to the blowing of furnaces by heating the air between its leaving the blowing apparatus and its introduction into the furnace, in any way, in a close vessel, exposed to the action of heat. The defendant's apparatus for this purpose was confessedly superior to what would be constructed according to the directions in the plaintiff's specification; but it was held to be an infringement.¹

In a recent case, where the patentee claimed as his invention the combination of a blast and an exhaust in ventilating the grinding surfaces of mill-stones, it was held that such combination might be Chief Baron, who led that case for the plaintiff, and succeeded. There never were two things to the eye more different than the plaintiff's invention and what the defendant had done in contravention of his patent right. The plaintiff's invention was different in form, different in construction; it agreed with it only in one thing, and that was, by moving in the water, a certain point was made to open, either before or after, so as to shut up another, and the gas was made to pass through this opening. Passing through it, it was made to revolve it; the scientific men, all of them, said, the moment a practical scientific man has got that principle in his head, he can multiply without end the forms in which that principle can be made to operate. The difficulty which will press on you, and to which your attention will be called in the present case, is this; you cannot take out a patent for a principle; you may take out a patent for a principle coupled with the mode of carrying the principle into effect, provided you have not only discovered the principle, but invented some mode of carrying it into effect. But then you must start with having invented some mode of carrying the principle into effect. If you have done that, then you are entitled to protect yourself from all other modes of carrying the same principle into effect, that being treated by the jury as piracy of your original invention. But then the difficulty that will press on you here is, that on the evidence there does not appear to have been any mode of carrying the principle into effect at all invented by you."

¹ Neilson v. Harford, Webs. Pat. Cas. 310. Parke, B., said to the jury: "If the specification is to be understood in the sense claimed by the plaintiffs, the invention of heating the air between its leaving the blowing apparatus and its introduction into the furnace, in any way, in any close vessel, which is exposed to the action of heat, there is no doubt that the defendant's machinery is an infringement of that patent, because it is the use of air which is heated much more beneficially, and a great improvement upon what would probably be the machine constructed by looking at the specification alone; but still it is the application of heated air, heated in one or more vessels between the blowing apparatus and the furnace, and, therefore, if it should turn out that the patent is good, and the specification is good, though unquestionably what the defendants have done is a great improvement upon what would be the machinery or apparatus constructed under this patent, it appears to me that it would be an infringement of it." See also the observations of the Lord Justice Clerk Hope, cited *ante*.

made the subject of a patent, although both blast and exhaust had been previously used separately, and also that it was valid independent of all claim for any particular mode of creating the blast or the exhaust. The patentee having described the upper stone as fixed and the lower as revolving, and pointed out some advantages arising from such an arrangement, it was also held, that even if he had thereby limited his claim to the combination of blast and exhaust as applied to a mill where only the lower stone revolved, still the use of the combination of draught and exhaust in a mill where the upper stone rotates would be an infringement.¹

§ 320. These cases show that when a party has invented some mode of carrying into effect a law of natural science, or a rule of practice, it is the application of that law or rule which constitutes the peculiar feature of his invention ; that he is entitled to protect himself from all other modes of making the same application ; and consequently, that every question of infringement will present the question, whether the different mode, be it better or worse, is in substance an application of the same principle. The substantial identity, therefore, that is to be looked to, in cases of this kind, respects that which constitutes the essence of the invention, viz., the application of the principle. If the mode of carrying the same principle into effect, adopted by the defendant, still shows only that the principle admits of the same application in a variety of forms, or by a variety of apparatus, the jury will be authorized to treat such mode as a piracy of the original invention. But of course where the variations adopted by the defendant show that the application of the principle is varied, that some other law or rule of science, or of practice, is made to take the place of that which the patentee claims as the essence of his invention, then there will be no infringement, but a substantial invention.²

§ 321. And this brings us to the consideration of another test of the fact of infringement, viz., that which shows on the part of

¹ *Bovill v. Keyworth*, 7 Ell. & Blackb. 725.

² In *Barber v. Grace*, 1 Wells. Hurlst. & Gord. 340, the process patented consisted in laying articles of hosiery in a box heated by steam and pressing them by means of a similar box heated by steam and applied by hydraulic pressure or by screws. It was held, that a process of finishing by means of iron rollers heated by steam, was no infringement.

the defendant a substantive invention sufficient to support a patent, as for a new thing.

§ 322. There may be many different modes of obtaining the same object; and consequently if, after a patent has been obtained for a particular thing, another party, without borrowing from that patent, has invented a new mode of accomplishing the same object, he will be entitled to a patent for his discovery.¹ The fact that a party is entitled to a patent for a substantive invention becomes a test of his infringement of a prior patent in this way. He cannot have become entitled to a patent without the invention of something material and new, that goes to the essence and substance of the subject-matter. If what he has done is only to make a variation in certain particulars, which do not affect the principle of the invention, the subject-matter remains the same, notwithstanding such variation. But if he has produced a new subject-matter, whether it be in the mode of accomplishing a common object, or in the object itself, he has not infringed upon the subject-matter of another which was materially and essentially different.

§ 323. The application of this test is seen in a striking manner in the facts of a recent English case. The plaintiff had obtained a patent for "an invention of improvements in cards, for carding wool, cotton, silk, and other fibrous substances, and for raising the pile of woollen cloths." In his specification, he stated his invention to consist in "the application and adaptation of caoutchouc or

¹ Sir N. C. Tindal, C. J. in *Walton v. Potter*, Webs. Pat. Cas. 590, thus states the general principle: "Now there can be no doubt whatever that, although one man has obtained a patent for a given object, there are many modes still open for other men of ingenuity to obtain a patent for the same object; there may be many roads leading to one place, and if a man has, by dint of his own genius and discovery, after a patent has been obtained, been able to give the public, without reference to the former one, or borrowing from the former one, a new and superior mode of arriving at the same end, there can be no objection to his taking out a patent for that purpose. But he has no right whatever to take, if I may so say, a leaf out of his neighbor's book, for he must be contented to rest upon his own skill and labor for the discovery, and he must not avail himself of that which had before been granted exclusively to another; and, therefore, the question again comes round to this, whether you are of opinion that the subject-matter of this second patent is perfectly distinct from the former, or whether it is virtually bottomed upon the former, varying only in certain circumstances, which are not material to the principle and substance of the invention."

India-rubber as a substitute for the fillets or sheets of leather that were commonly used in the construction of ordinary cards, and thus giving a superior elasticity and durability to cards"; and in describing the mode of preparing the article, he stated that "the regularity of distance and uniformity of the dents or teeth of the cards were found to be better preserved by a piece of linen commonly called brown holland, or other like cloth, well glazed and cemented on to the back of the caoutchouc or India-rubber"; that the cloth so placed rendered the action of the dents or teeth less uncertain in their elastic movements; that the cloth so cemented to the India-rubber or caoutchouc was to be affixed to the cylinder or board of the ordinary carding-engine by nails, but if it was to be affixed by cementing, (which he recommended as the best mode of applying the cards,) then it was desirable to remove the cloth"; and he then proceeded to show the ordinary mode of pricking or piercing holes for the reception of the dents or teeth, the mode of cutting the India-rubber, &c. The defendants subsequently obtained a patent also for "an improvement or improvements in cards for carding various fibrous substances, part of which improvements may be used as a substitute for leather"; and in their specification they stated their invention to consist in the manufacture of a new material or substance for receiving the wire teeth, which they described to be a woven fabric of a peculiar construction, soft and porous, saturated with a solution of India-rubber by being repeatedly passed through it, and then dried and submitted to pressure; the object being to render the fabric so dealt with "extremely elastic in the direction of the thickness of the fabric, so as to impart, as it were, elasticity to the wire teeth when set."

§ 324. The question as to the infringement was, whether the defendants had added anything material, not covered by the plaintiff's patent, which could be considered as constituting a subject-matter distinct from that of the plaintiff's. It appeared that the difference between the article manufactured under the plaintiff's patent, and that under the defendant's patent, which was complained of as an infringement, was, that in the former the caoutchouc or India-rubber was cemented in slices cut from the solid block to linen cloth, or cloth made of linen and cotton, in the manner described in the plaintiff's specification, and that the latter consisted of cloth of a peculiar fabric saturated or impregnated by

passing it through a liquid composed of caoutchouc or India-rubber dissolved in naphtha or oil of turpentine and highly rectified coal-tar oil, and afterwards drying and submitting it to pressure. The plaintiff's evidence tended to show that the article made by the defendants was a colorable imitation of that made under the plaintiff's patent; the cloth being merely placed in the centre between two strata of India-rubber or caoutchouc, instead of at the back, and the India-rubber, though applied in solution or in the form of a cement, being capable of being reproduced by evaporation of the solvent, and the principle and the result of both methods being the same, viz., the acquisition of an increased elasticity, though the modes of attaining that result were somewhat different. It was also sworn, that, for the purpose of the plaintiff's patent, caoutchouc or India-rubber might be used either in the state in which it is imported, or in a manufactured state, that is, dissolved by certain known solvents, and afterwards, by evaporation of the solvents, restored to solid blocks; but that, if free from air-holes, (in which state it was *possible* to obtain it,) it was more desirable to have it in its natural state, its elasticity being somewhat diminished by the artificial process.

§ 325. On the part of the defendants, several witnesses, as well practical as scientific, were called, who stated that the principle of the manufactures respectively described in the specifications of the plaintiff and defendants was essentially different, as well in the materials used and the mode in which they were put together, as in the operation or result of their combination; the one process being wholly mechanical, the other strictly chemical, and the effect of the former being to give *elasticity*, and of the latter to give strength and *flexibility* or *pliancy*, but imparting only a very slight additional elasticity to the card; that the proportion which the India-rubber bore to the cloth, as used by the plaintiff, was generally about three to one, whereas the proportion of India-rubber solution used by the defendants was from twenty to forty per cent only; and that India-rubber as imported was wholly unfit for the purpose described in the plaintiff's specification, never being sufficiently free from imperfection.

§ 326. Upon the issue of not guilty, the jury found a verdict for the plaintiff, thereby establishing that the defendant's card was an

infringement of the plaintiff's, both employing the elasticity of caoutchouc next the teeth, and the defendant's practising by a circuitous mode that which falls within the claim of the plaintiff's patent.¹

§ 327. But if the defendants, in this case, could have succeeded in showing that the materials of which they made their cards, and the mode in which they were put together, were different from the materials and method of construction used by the plaintiff; if they could have satisfied the jury that the difference

¹ *Walton v. Potter*, Webs. Pat. Cas. 585, 597; 4 Scott's N. R. 91. On the application for a new trial, Maule, J., said: "With respect to the issue of not guilty, in order to determine whether or not the verdict has been correctly found for the plaintiff on that issue, it is necessary to consider what is the subject of the defendant's patent; for it is quite clear that what the defendants have done they claim to do under their patent. By their specification the defendants claim to be the inventors of a new material for forming the backs of cards; and they describe the mode of preparing it thus, viz.: 'by repeatedly passing a woven fabric of a peculiar construction through, and saturating it with, a solution of caoutchouc or India-rubber, and then drying it in order to evaporate the solvents, and leave the fabric impregnated and coated with caoutchouc or India-rubber, and afterwards submitting it to pressure'; and the object they describe as being to render the fabric so dealt with 'extremely elastic in the direction of the thickness of the fabric, so as to impart, as it were, elasticity to the wire teeth when set.' That is, in effect, producing by a circuitous process a cloth with a layer of caoutchouc or India-rubber on each side of it, so as to give a great degree of elasticity to the basis of the dents or teeth of the card. The plaintiff, by his specification, claims the exclusive right of making cards with caoutchouc or India-rubber, as the fillet, or sheet, or medium in which the dents or teeth are to be set; the object being, like that of the defendants, the attainment of a superior degree of elasticity and durability; and in describing his mode of attaining that object, he states that he inserts the wire dents or teeth in a foundation or fillet of caoutchouc or India-rubber,—a slice of India-rubber in its natural state,—and that with a view to preserve the regularity of distance and uniformity of the dents or teeth, and to render their action less uncertain, he cements to the back of the caoutchouc or India-rubber a piece of brown holland or other like cloth. The plaintiff does not confine his claim to using India-rubber by means of slicing it; he claims the exclusive right of making cards, by fixing the dents or teeth in India-rubber, using for that purpose cloth, some texture of linen or cotton. In some instances, he says, the cloth may be removed. That does not, in point of fact, make it less a part of the process, by which he applies cloth for the putting the dents into the layer of India-rubber. If that be so, I think it is evident the defendants claim to do a thing falling within the generality of the plaintiff's claim. Taking that to be so, the evidence is abundant to justify the jury in finding; and it seems to me to require them to find for the plaintiff." See also the observations of Erskine, J., cited *ante*.

expressed by saying that the one process was mechanical and the other chemical, was a real and substantial, and not a colorable difference; then they would, notwithstanding the former patent of the plaintiff, and notwithstanding that the objects of both were the same, have appeared to be the authors of a substantive invention, because they would have produced a distinct subject-matter, new in all material respects, of a useful character, and therefore capable of supporting an independent patent. But it appeared that the plaintiff's patent covered the use of India-rubber combined with cloth, as a fillet or sheet, for the backs of cards, in which to insert the teeth, in order to accomplish certain purposes; and that the mode in which the defendants brought these same materials into combination, for the same purposes, was only a circuitous mode of doing what the plaintiff had done, and therefore that they had produced nothing new, material to the principle and substance of the invention.

§ 328. On the other hand, where the plaintiff had a patent for producing an effect in the manufacture of iron, said to be altogether new, by a mode or process, or series of processes unknown before, it being for a combination of processes altogether new, leading to one end; and the defendants had used the same ingredients, but in different proportions, which constituted a mode of working essentially different from that pointed out in the specification, it was held that there was no infringement. The plaintiff's invention in this case consisted in rendering available the slags or cinders produced in the manufacture of iron; and also in the use and application of lime, subsequent to the blast furnace, in order to prevent the quality called "cold short"; and his specification pointed out the proportion of slags, mine rubbish, coke, and limestone, to be used for the production of the effect. To prove the infringement, a witness in the employ of the defendants was called, who stated that he had seen the plaintiff's specification; that since the date of the patent the defendants preserved cinders, which they had not done before, and produced pig-iron, by mixing them with mine rubbish, and that in the subsequent processes they applied quicklime to prevent the iron from being "cold short." But he stated that the defendants did not work by the plaintiff's specification, but used very different proportions, viz., lime in the refinery furnace in about the proportion of one

hundred and twentieth part of the whole charge of pig-iron, and that they used none in the puddling furnace, and that the defendants had used slags in the puddling furnace for years before the date of the patent. He also proved that the proportions of mine rubbish, as laid down in the specification, were not essential to the success of the process ; that the defendants had been in the habit of varying those proportions ; and that they once entirely omitted mine rubbish, when the result was most successful.¹

§ 329. Now this patent was one of that class in which proportions or degrees when specified as the mode in which a particular effect is to be produced, make a part of the essence of the invention. A discovery may consist in the effect produced by the union of certain ingredients or agents ; but if a particular proportion is supposed to be necessary to the effect, and is claimed as entering into the production of that effect, the subject-matter of the patent will be the use of the particular ingredients in that particular proportion ; and if the same ingredients in different proportions, or a part of the same ingredients in other proportions, are used by another person to produce a similar beneficial effect, more or less advantageous, that person will have discovered a new subject-matter, and consequently will not have infringed the right of a patentee, whose invention depends on the proportions which he has specified. Accordingly it was held in this case that the defendants' mode of working being essentially different from the specification of the plaintiff, they had not infringed his patent ; and if we apply to the reasoning of the court, the test of a sufficiency of invention on the part of the defendants to support a patent, as for a new discovery, it will be seen that the same facts will lead to that result, which show that the plaintiff's patent had not been infringed.²

¹ Hill v. Thompson, Webs. Pat. Cas. 225, 232, 233.

² Dallas, J., delivering the judgment of the court, said : " To prove the infringement, one witness only was called ; and this part of the case depends, therefore, entirely upon his testimony. And, before adverting to the evidence in question, it will be necessary to look to the patent, as far as it relates to this part of the subject. It has not been contended that it is a patent introducing into use any one of the articles mentioned, singly and separately taken ; nor could it be so contended, for the patent itself shows the controversy ; and if it had been a patent of such a description, it would have been impossible to support it ; for slags had undoubtedly been made use of previously to the patent, so had mine rubbish,

§ 330. The superior utility of one thing over another will sometimes furnish an important test upon this question of identity. It and so had lime. But it is said, it is a patent for combinations and proportions, producing an effect altogether new, by a mode and process, or series of processes, unknown before ; or, to adopt the language made use of at the bar, it is a patent for a combination of processes altogether new, leading to one end ; and this being the nature of the alleged discovery, any use made of any of the ingredients singly, or any use made of such ingredients in partial combination, some of them being omitted, or any use of all or some of such ingredients, in proportions essentially different from those specified, and yet producing a result equally beneficial (if not more so) with the result obtained by the proportions specified, will not constitute an infringement of the patent.

“ It is scarcely necessary here to observe, that a slight departure from the specification, for the purpose of evasion only, would of course be a fraud upon the patent, and therefore the question will be, whether the mode of working by the defendant has or has not been essentially or substantially different. For this we must look to the evidence of E. Forman ; and he being the single witness to the point, by his testimony this part of the case must stand or fall. It may be difficult entirely to reconcile different parts of his evidence with each other, if his answers to the several questions be taken separately and detached ; but looking to the result, it seems to be clear. On the part of the plaintiff he proves, that, before the patent was taken out, the defendants were not in the habit of making use of slags, and that his attention being called to the subject by the patentee in the first instance, and then by the patent itself, he has made use of them uniformly since ; he has since also, at times, used mine rubbish, and also lime, which last, he also admits, was used to prevent the ‘ cold short,’ which defect he allows was and is thereby prevented. So far, therefore, he proves separate use and occasional combination. He is next asked as to the proportions mentioned in the patent : ‘ Did you apply the lime in these proportions ? ’ His answer is, ‘ I say no, to that.’ ‘ Have you worked by the specification ? ’ ‘ No, we did not.’ He then explains in what respects they departed from the specification. This is his evidence on the examination in chief. On the cross-examination he says, that the proportions used were very materially different, and that the proportions in the patent are not essential ; that it would make no difference to him if he were to be restrained from using these proportions, and that the result would be better obtained by materially departing from them ; indeed, by almost losing sight of them altogether. With respect to slags, on reconsideration, he states that the defendant had used slags previously to the patent, in the puddling furnace, for months together. As to mine rubbish, he says, we varied the proportions, and we found, in experience, that the use of it was best without reference to the preparations and restrictions pointed out in the specification, and when omitted, the result was best of all. It is true, he afterwards states, that this omission took place when he was absent from home, and that, on his return, he ordered the mine rubbish to be restored ; and in this respect, and going to this single point, there appears to be an inconsistency. But still, as the case stands on his single evidence, if, in substance and result, it proves a mode of working essentially different from the specification, the foundation of the plaintiff’s case is altogether gone. And the rule is, in

is not always true that one machine, for instance, is not an infringement upon another, because it is better than the other; for it may contain the whole substance of that other machine, and something in addition which makes it better; or the patent may have been taken for an entire machine, substantially new in its structure, and the machine complained of may contain some substantial operating part of the machine patented, and so infringe. But where the patent is for some one operating part of a machine, designed to effect a particular end, and the machine complained of effects that end materially better, by the use of means which are in point of fact different, then the two modes of operation are not the same under the patent law. In other words, when the means employed are, in point of fact, not the same, or a known mechanical equivalent, and the question to be determined is, whether they are, under the patent law, the same in substance, or, as it is usually called, the same in principle, superior utility settles that question. Two things are not the same under the patent law, when one is practically substantially better than the other, and this improvement is not gained by the use of known mechanical equivalents.

this respect, strict, as stated by Mr. Justice Buller, in the case of *Turner v. Winter* (Webs. Pat. Cas. 77). In that case, the learned judge expressed himself in these words: 'Whenever the patentee brings an action on his patent, if the novelty or effect of the invention be disputed, he must show in what his invention consists, and that he procured the effect proposed, in the manner specified (Webs. Pat. Cas. 81)'; and in another part of the same case, he adds: 'Slight defects in the specification will be sufficient to vacate the patent (Webs. Pat. Cas. 82)'; and speaking of degree and proportion, he says: 'The specification should have shown by what degree of heat the effect was to be produced.' In that case, as in a great variety of others, instances may be found to show the strictness of the law, as bearing upon this point, either in regard of omission or of superfluous addition, or of uncertainty or insufficiency in quantities proposed. But, further, the evidence so applied does not confine itself to this point only; for it disproves also utility, as far as it depends on combination and proportion, leading and conducing to a specific result. Neither can it be justly said, that the use of the separate ingredients, or some of them partially combined, is a use made of the invention in part, so as to support the counts adapted to such partial use; because, as it has been already observed, and will more particularly be adverted to hereafter, each of the ingredients had before been separately used, and had been used, more or less, in partial combination.

"On the whole, our opinion is, as to this part of the case, that, considering the evidence of *Forman*, in its substance and result, and with reference to the peculiar nature of the patent, an infringement of the patent is not thereby proved." *Hill v. Thompson*, Webs. Pat. Cas. 242, 245, 246.

§ 331. This view of the patent law relieves it in a great degree from the uncertainties which have arisen from the loose and indeterminate sense in which the word "principle" has been employed; and, at the same time, it is in exact accordance with the great purposes, as well as with the particular provisions, of that system of law. Its leading purpose was to encourage *useful* inventions. Practical utility was its object; and it would be strange, if, with such object in view, it should consider two things as substantially the same, which, practically and in reference to their respective utility, are substantially different. And although this test has not seldom been lost sight of in the trial of patent causes, yet there is nowhere any authority opposed to it, and there is certainly much in its favor.¹

§ 332. Every patent stands upon its subject-matter, and accord-

¹ Thus, in *Davis v. Palmer*, 2 Brock. 310; Mr. Chief Justice Marshall states the principle clearly. He was commenting on the clause in the old patent law, that "simply changing the form or the proportion of any machine shall not be deemed a discovery"; and he says, "In construing this provision, the word 'simply' has, we think, great influence; it is not every change of form and proportion which is declared to be no discovery, but that which is simply a change of form and proportion, and nothing more. If by changing the form and proportion a *new effect* is produced, there is not simply a change of form and proportion, but a *change of principle also*." To the same effect are the following cases: *Earle v. Sawyer*, 4 Mas. 1, where the substitution of a circular saw, in place of a reciprocating saw, in a shingle machine, was held to be a patentable improvement. — *Davol v. Brown*, 1 Woodb. & M. 53, where the arrangement of bowed fliers, in a fly-frame, in two rows, was held to be patentable, although open-bottomed fliers had previously been arranged in two rows, and geared in the same way, and bowed-fliers had been arranged in the one row with like gearing. — *Russell v. Cowley*, Webs. Pat. Cas. 464, where it was held, that tubes having been welded by grooved rollers on a maundril, it was a patentable improvement to weld them by grooved rollers without a maundril; and Lord Lyndhurst puts the case of welding them by *fixed dies* instead of *rollers*. See also *Kneass v. The Bank*, 4 Wash. 9; *Crane v. Price*, 1 Webs. Pat. Cas. 409; 1 Webs. Pat. Cas. 95.

In these cases the principle is necessarily involved, and in some of them distinctly announced, that any change in the instruments employed, by which a new result is produced, or an old result produced in a more economical or beneficial manner, is the subject of a patent. It is the invention of a *new* thing under the patent law. The same test is proposed by Mr. Webster in his very able dissertation on the Subject-Matter of Patents. He says, in substance, that the question is, whether the change be colorable and formal, or substantial and essential, that is, whether it be such as would of itself support a patent. The jury must find whether what is new is essential or useless, and a colorable evasion; whether, by reason of the change, the thing has acquired a new and distinct character.

ingly the question of infringement depends upon the use of that which is covered by the patent. Where a patent is for the combination alone, it is no infringement to use any of the parts or things which go to make up the combination, provided the combination itself be not used.¹ In a recent English case, however, it has been decided that a valid patent for an entire combination for a process gives protection to each part thereof that is new and material to that process, without any express claim of particular parts, and notwithstanding that some parts of the combination are old.²

In *Smith v. London & N. W. R. W.*,³ Lord Campbell observed: "The patent was for an improved wheel for carriages of different descriptions, and the patentee stated in his specification that 'the said improved wheel is manufactured wholly of bar-iron, by welding wrought-iron bars together into the form of a wheel, whereof the nave and spokes and rim, when finished, will consist of one solid piece of malleable iron, and the mode whereby the said bars of malleable iron are fashioned and united into the shape of a wheel is as follows.' The specification then showed, by the aid of drawings, how the nave and spokes and rim were formed and afterwards welded so as to make a wheel of one piece of malleable iron. In the claim, the patentee stated that the new invention consisted in the circumstance of the centre boss or nave, arms, and rim of the wheel being wholly composed of wrought or malleable iron welded into one solid mass in manner hereinbefore described. The evidence showed a clear imitation and infringement of the manner of forming the boss or nave into one piece of malleable iron with the rest of the wheel, but it was stated that the mode which the defendants had used of forming and welding the spokes and rim did not amount to any infringement.

Mr. Atherton (defendant's counsel) contended that the words of the claim restricted the patent to the invention of a wheel made in every respect "in the manner aforesaid," and that as the defendants had not used the same mode with regard to the spokes and rim as the patentee had specified, there could be no infringement of the patent. My brother Martin, who tried the cause, intimated

¹ *Barrett v. Hall*, 1 Mas. 447. See observations of Mr. Justice Story cited from this case, *ante*. *Evans v. Eaton*, 1 Pet. C. C. 343.

² *Lister v. Leather*, 8 Ell. & Blackb. 1004; *Bovill v. Keyworth*, 7 Ell. & Blackb. 725; *Smith v. London & N. W. R. W.*, 20 E. L. & Eq. 94.

³ *Smith v. London & N. W. R. W.*, 20 E. L. & Eq. 94.

his opinion that the claim was for the invention of a wheel as described in the claim, but that if the defendants had imitated or pirated the mode of welding the nave, and that were a material part of the invention, there was an infringement of part of the patent for which the action was maintainable.

“ We are of opinion that this ruling was quite correct, and that there was ample evidence to support the action. Where a patent is for the combination of two, three, or more old inventions, a user of any of them would not be an infringement of the patent; but where there is an invention consisting of several parts, the imitation or pirating of any part of the invention is an infringement of the patent. Suppose that a man invents a machine consisting of three parts, of which one is a very useful invention, and the two others are found to be of less practical use, surely it could not be said that it was free to any person to use the useful part so long as he took care to substitute some other mode of carrying out the less useful parts of the invention. We should be sorry to throw any doubt upon the question of an infringement of a material part of such an invention, being an infringement upon which an action is maintainable, by granting a rule to show cause upon such a point.”

In *Prouty v. Ruggles*,¹ Mr. Chief Justice Taney said: “ The patent is for a combination, and the improvement consists in arranging different portions of the plough, and combining them together in the manner stated in the specification, for the purpose of producing a certain effect. None of the parts referred to are new and none are claimed as new; nor is any portion of the combination, less than the whole, claimed as new, or stated to produce any given result. The end in view is proposed to be accomplished by the union of all, arranged and combined together in the manner described. And this combination, composed of all the parts mentioned in the specification, and arranged with reference to each other and to other parts of the plough in the manner therein described, is stated to be the improvement, and is the thing patented. The use of any two of these parts only, or of two combined with a third, which is substantially different in form or in the manner of its arrangement and connection with the others, is therefore not the thing patented. It is not the same combination if it substantially differs from it in any of its parts.

¹ *Prouty v. Ruggles*, 16 Peters, 336.

The jogging of the standard into the beam, and its extension backward from the bolt, are both treated by the plaintiffs as essential parts of their combination for the purpose of brace and draft. Consequently, the use of either alone, by the defendants, would not be the same improvement nor infringe the patent of the plaintiffs."

But in order to determine in those cases where the patent is for the combination alone whether the combination is used or whether there is an infringement, it may be necessary to inquire whether the defendant has employed a mechanical equivalent as a substitute for some material element of the plaintiff's combination. If so, it will be an infringement. Thus, in the specification of a patent for "improvements in looms for weaving," the plaintiff declared that his improvement applied to that class of machinery called power-looms, and consisted "in a novel arrangement of mechanism, designed for the purpose of instantly stopping the whole of the working parts of the loom whenever the shuttle stops in the shed." After describing the manner in which that was done in ordinary looms, the specification proceeded thus: "The principal defect in this arrangement, and which my improvement is intended to obviate, is the frequent breakage of the different parts of the loom, occasioned by the shock of the lathe or sley striking against the 'frog,' which is fixed to the framing. In my improved arrangement, the loom is stopped in the following manner: I make use of the 'swell' and the 'stop-rod finger' as usual. The construction of the latter, however, is somewhat modified, being of one piece with the small lever which bears against the 'swell'; but instead of striking a stop or 'frog' fixed to the framing of the loom, it strikes against a stop or notch upon the upper end of a vertical lever vibrating upon a pin or shed. The lever is furnished with a small roller or bowl, which acts against a projection on a horizontal lever, causing it to vibrate upon its centre and throw a clutch-box (which connects the main driving pulley to the driving shaft) out of gear, and allows the main driving pulley to revolve loosely upon the driving shaft, at the same time that a projection on the lever strikes against the 'spring handle' and shifts the strap; simultaneously with these two movements, the lower end of the vertical beam causes a break to be brought in contact with the fly-wheel of the loom, thus instantaneously stopping every motion of the loom without the slightest

shock." After the date of the plaintiff's patent, the defendant obtained a patent for "improvements in, and applicable to, looms for weaving," and amongst them he claimed a novel arrangement of apparatus for throwing the loom out of gear when the shuttle failed to complete its course. In the defendant's apparatus the "clutch-box" was not used, but instead of it the "stop-rod finger" acted on a loose piece or sliding frog; but, instead of a rigid vertical lever, as in the plaintiff's machine, the defendant used an elastic horizontal lever, and, by reason of the pin travelling on an inclined plane, the brake was applied to the wheel gradually and not simultaneously. The jury found that the plaintiff's arrangement of machinery for stopping looms, by means of the action of the "clutch-box" in combination with the action of the brake, was new and useful; and that the defendant's arrangement of machinery for the latter purpose was substantially the same as the plaintiff's: held, upon these findings, that the specification was good; secondly, that the defendant had infringed the patent. A rule was entered for a new trial on the ground of misdirection, but was discharged. Pollock, C. B., in tendering the decision of the court, observed: "The second question is, whether the patent has been infringed. It was argued that there can be no infringement of a patent for a combination, unless the defendant has used the whole combination. But that is not so, for there may be an infringement by using so much of a combination as is material, and it would be a question for the jury, whether that used was not substantially the same thing. I recollect a patent for an invention, a part of which, supposed at first to be useful, turned out to be prejudicial, and was afterwards omitted, but the patent was nevertheless sustained. If that had been a combination of matters, each of them old, but entirely new as a combination, and the jury had found that the substantial parts of the combination were used, that, I think, would have been an infringement of the patent. Looking at this patent fairly, what is it for? It is for a mode to separate the machine from the source of power, and at the same time to stop the momentum which has already accumulated, and to do this by one and the same operation; in fact, to make the machinery itself do it. Whenever the shuttle remains among the sheds, and does not arrive at the shuttle-box, the machine is so constructed that, by one operation, it is thrown out of gear, and at the same time a brake is applied to the fly-

wheel so as to stop the momentum. The defendant has substituted for the clutch-box the old plan of the frog, and instead of separating the power and the machine by a clutch-box, and so throwing the machine out of gear, he has used the old method of throwing off the strap, but he has adopted the brake, which the jury have found is, in itself, an arrangement of machinery new and useful. We are not now to decide what would have been the plaintiff's right if the clutch-box had been entirely new, and the plaintiff had complained of its use; but I think it may be laid down as a general proposition, (if a general proposition can be laid down on a subject applicable to such a variety of matters, indeed incommensurable with each other, for the same doctrine would scarcely apply to a new medicine and a new material or new metal,) that, if a portion of a patent for a new arrangement of machinery is in itself new and useful, and another person, for the purpose of producing the same effect, uses that portion of the arrangement, and substitutes for the other matters combined with it another mechanical equivalent, that would be an infringement. It appears to me, therefore, with reference to the facts found by the jury, that the specification is good, and that the defendant has infringed the patent."¹

Mr. Justice Curtis has held that the doctrine of mechanical equivalents, in connection with such a use of a material part of a combination, is not confined by the patent law to those elements which are strictly known as such in the science of mechanics, but that it embraces those substitutions, which, as a matter of judgment in construction, may be employed to accomplish the same end.²

¹ *Sellers v. Dickinson*, 6 E. L. & Eq. 544.

² *Foster v. Moore*, 1 Curtis, C. C. 279. Compare *Newton v. Grand Junction R. W.* 6 E. L. & Eq. 557. Also *Johnson v. Root*, MS. per Sprague, J. "The term 'equivalent,' gentlemen, has two meanings, as used in this class of cases. The one relates to the results that are produced, and the other in the mechanism by which those results are produced. Two things may be equivalent, that is, the one equivalent to the other, as producing the same result, when they are not the same mechanical means. Mechanical equivalents are spoken of as different from equivalents that merely produce the same result. A mechanical equivalent, I suppose, as generally understood, is where the one may be adopted instead of the other, by a person skilled in the art, from his knowledge of the art. Thus an instrumentality is used as a mechanism: you wish to produce a pressure downward; well, it can be done by a spring, or it can be done by a weight. A machine is presented to a person conversant with machines. He sees that the force applied downward in the one before him, is by a weight; from a knowledge of his art he

§ 333. But, on the other hand, where the patent is for several distinct improvements or things, and does not stand upon the combination of such things, then the use of any one of them will be an infringement.¹ But in order to succeed in an action for the infringement of any one of such improvements, it was formerly necessary among us, as in England, that the whole of the improvements claimed as such should be new; and if the novelty of any one of them failed, though it might not be the one used by the defendant, the action could not be sustained. The reason for this was, not that the right of the patentee would not have been in-

can pass at once to another force, the spring, to press it downward; and these are mechanical equivalents. But, gentlemen, there may be equivalents as producing the same results, each of which is an independent matter of invention, and in that sense they are not mechanical equivalents. To illustrate my meaning, suppose, in early days, the problem was to get water from a well to the surface of the earth. One man takes a rope made of grass and draws up a pail of water; another would see that, as a mechanical equivalent, a rope of hemp would accomplish the same result. But suppose another person comes, and for the first time invents a pump. That is equivalent in the result of bringing the water to the surface of the ground; in that respect it is equivalent, as producing that result, to hauling it up by a rope; but it is not mechanically equivalent; it brings into operation, as you know, very different powers and forces, and would require invention to introduce it.

“Now, gentlemen, however the appearances of a thing may be altered, if the aspect, the form, the appearances presented are changed only by the use of mechanical equivalents, then it is substantially the same thing, I suppose. That is to say, if a person has an invention, in which he is called upon, by the patent law, to make a full and clear description of the thing he has invented, if another person, looking at that, can from his knowledge of the subject pass to the other thing that is used, without any invention, then the one is substantially the same as the other. It is not that every unskilled person shall see how they pass; but what is required is, that it shall be so described that those skilled and competent in the art, those who understand it, shall be able, (not that an ingenious man can, seeing the new machine, sit down and find something else afterwards, perhaps aided in some degree by that in inventing something that is not there, but whether, with a competent knowledge of his art, he will be able,) by looking at that with care, and examining it, to see that it may be done in a different mode, in a different manner, and it is done in that different mode or different manner by the knowledge which he has in the art. That would not be a new invention, or substantially differing from the original. But if he is obliged to go to invention, then he has a right to the benefits of whatever he thus invents; and if his invention is a substitution for the original invention, then it is not substantially the same, and he does not use it. But if he merely invents something to be added to it, then he cannot take the original invention, because he has made something distinct to add to it as a new improvement.”

¹ *Moody v. Fiske*, 2 Mas. 115; *Emerson v. Hogg*, 2 Blatchf. 1; *Hogg v. Emerson*, 6 How. 437; *Ibid.* 11 How. 587.

fringed if he had had a valid patent, but that his patent was void, on account of a partial failure of the whole consideration on which it was granted; the consideration on which a patent was granted being the novelty of all the things represented to be new, regarded as an entirety; and the consideration being entire, if it failed in part, it failed as to the whole. The government was, in such a case, deceived in its grant; the whole patent was therefore inoperative, and no action could be maintained upon it.¹

¹ In *Moody v. Fiske*, 2 Mas. 112, 115, Mr. Justice Story hinted at this doctrine, when he said that, "In such a case, the patent goes for the whole of the improvements, and if each be new and be claimed distinctly in the patent, there does not seem to be any good reason why the party who pirates any part of the invention should not be liable in damages." The subsequent cases in England, of *Hill v. Thompson*, 8 Taunt. 382; 2 B. Moore, 433; *Webs. Pat. Cas.* 239; *Brunton v. Hawkes*, 4 B. & Ald. 541; and *Morgan v. Seaward*, 2 M. & W. 544; *Webs.* 187; have fully established this doctrine. In the last of these cases, Mr. Baron Parke, delivering the judgment of the court, said: "This brings me to the question whether this patent, which suggests that certain inventions are improvements, is avoided if there be one which is not so; and upon the authorities we feel obliged to hold that the patent is void, upon the ground of fraud on the crown, without entering into the question whether the utility of each and every part of the invention is essential to a patent, where such utility is not suggested in the patent itself as the ground of the grant. That a false suggestion of the grantee avoids an ordinary grant of lands and tenements from the crown, is a maxim of the common law, and such a grant is void, not against the crown merely, but in a suit against a third person. It is on the same principle that a patent for two or more inventions, when one is not new, is void altogether, as was held in *Hill v. Thompson*, 2 Moore, 421; 8 Taunt. 375; and *Brunton v. Hawkes*, 4 B. & Ald. 542. For although the statute invalidates a patent for want of novelty, and consequently, by force of the statute the patent would be void so far as related to that which was old, yet the principle on which the patent has been held to be void altogether is, that the consideration for the grant is the novelty of all, and the consideration failing, or, in other words, the crown being deceived in its grant, the patent is void, and no action maintainable upon it. We cannot help seeing, on the face of this patent, as set out in the record, that an improvement in steam-engines is suggested by the patentee, and is part of the consideration for the grant; and we must reluctantly hold that the patent is void, for the falsity of that suggestion. In the case of *Lewis v. Marling* (10 B. & C. 22; 5 M. & Ry. 66), this view of the case, that the patent was void for a false suggestion, does not appear by the report to have been pressed on the attention of the court, or been considered by it. The decision went upon the ground that the brush was not an essential part of the machine, and that want of utility did not vitiate the patent; and, besides, the improvement by the introduction of the brush is not recited in the patent itself as one of the subjects of it, which may make a difference. We are, therefore, of opinion, that the defendants are entitled to our judgment on the third issue." See also the elaborate judgments in *Brunton v. Hawkes*.

§ 334. The statute of July 4, 1836, § 15, recognizes this doctrine, by establishing as a defence that the patentee was not the first inventor of the thing patented, "or of a substantial and material part thereof claimed as new." But a more recent statute has provided that the patent shall be deemed good and valid for so much of the invention or discovery as shall be truly and *bonâ fide* the invention or discovery of the patentee, if it is a material and substantial part of the thing patented, and is definitely distinguishable from the other parts which the patentee had no right to claim, notwithstanding the specification may be too broad, if it was so made by mistake, accident, or inadvertence, and without any wilful default or intent to defraud or mislead the public."¹ This leaves the former doctrine, by which a failure of novelty in any part vitiated the whole patent, still applicable to cases where the claim was made too broad, wilfully and knowingly, or with intent to defraud or deceive the public.

§ 335. The effect of a failure, in point of utility, of one or more of several parts or things claimed as distinct inventions, is held in England to be the same as a failure in point of novelty. If any thing claimed as essential turn out to be useless, the patent is voidable, provided it was known to the patentee, at the time of enrolling his specification, to be useless, because he misleads the public by representing it to be useful; but if it was subsequently discovered not to be useful, material, or necessary, it forms no ground of objection to the patent.² A patent for an entire machine or other subject which is, taken altogether, useful, though a part or parts may be useless, will be valid, provided there is no false suggestion.³ So, too, a finding of the jury, that the invention is useful on the whole, but fails or is not useful in some cases, is not a ground of nonsuit.⁴ But these cases are entirely distinguished

¹ Act of 1837, § 9.

² *Lewis v. Marling*, 10 B. & C. 22; 4 Car. & P. 57; Webs. Pat. Cas. 493.

³ *Morgan v. Seaward*, Webs. Pat. Cas. 187.

⁴ *Haworth v. Hardcastle*, Webs. Pat. Cas. 480, 483. In this case, Sir N. C. Tindal, C. J., said: "The motion for entering a nonsuit was grounded on two points: first, that the jury had, by their special finding, negatived the usefulness of the invention to the full extent of what the patent and specification had held out to the public; secondly, that the patentee had claimed in his specification the invention of the rails or staves over which the cloths were hung, or, at all events, the placing them in a tier at the upper part of the drying-room. As to the find-

from those where the purpose wholly fails, and the invention described does not accomplish the effect that is claimed for it. On a patent of this description, of course, no action whatever can be maintained.¹

§ 336. The principles of our law would apparently lead to the same conclusions upon this subject; for, although it is not material whether the subject-matter of a patent is more or less useful, it must possess some utility; and if the subject-matter consists of several things, all included in one patent, but claimed as the distinct inventions of the patentee, a failure of any one of them, in point of utility, must vitiate the patent, if it was represented to be useful, when it was known not to be so, for the same reasons which

ing of the jury, it was in these words: 'The jury find the invention is new and useful upon the whole; and that the specification is sufficient for a mechanic, properly instructed, to make a machine, and that there has been an infringement of the patent; but they also find that the machine is not useful in some cases for taking off goods.' The specification must be admitted, as it appears to us, to describe the invention to be adapted to perform the operation of removing the calicoes and other cloths from off the rails or staves after they have been sufficiently dried. But we think we are not warranted in drawing so strict a conclusion from this finding of the jury as to hold that they have intended to negative, or that they have thereby negatived, that the machine was useful in the generality of the cases which occur for that purpose. After stating that the machine was useful on the whole, the expression that, 'in some cases, it is not useful to take up the cloths,' appears to us to lead rather to the inference that in the generality of cases it is found useful. And if the jury think it useful in the general, because some cases occur in which it does not answer, we think it would be much too strong a conclusion to hold the patent void. How many cases occur, what proportion they bear to those in which the machine is useful, whether the instances in which it is found not to answer are to be referred to the species of cloth hung out, to the mode of dressing the cloths, to the thickness of them, or to any other cause distinct and different from the defective structure or want of power in the machine, this finding of the jury gives us no information whatever. Upon such a finding, therefore, in a case where the jury have given their general verdict for the plaintiff, we think that we should act with great hazard and precipitation, if we were to hold that the plaintiff ought to be nonsuited upon the ground that his machine was altogether useless for one of the purposes described in his specification."

¹ *Manton v. Parker*, Dav. Pat. Cas. 327. This was a patent for "a hammer on an improved construction, for the locks of all kinds of fowling-pieces and small arms"; and a material part of the invention consisted in a means of letting out the air from the barrel, and causing a communication between the powder in the pan and in the barrel, without, at the same time, letting out the powder. The witnesses for the defendant having proved that the powder passed through the same hole as the air, the plaintiff was nonsuited.

are applicable in England. Our statute, moreover, has expressly provided, as one of the defences to an action on a patent, "that it contains more than is necessary to produce the described effect," when such addition "shall fully appear to have been made for the purpose of deceiving the public"; that is to say, when it appears that the patentee was aware that he was introducing something not useful, material, or necessary, at the time of preparing his specification.¹

§ 337. The rule of damages for the infringement of a patent is provided by statute in the following terms: "that, whenever in any action for damages for using or selling the thing whereof the exclusive right is secured by any patent heretofore granted, or which shall hereafter be granted, a verdict shall be rendered for the plaintiff in such action, it shall be in the power of the court to render judgment for any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case."² By the terms "actual damages, sustained by the plaintiff," are meant such damages as he can actually prove, and has in fact sustained, as contra-distinguished from mere imaginary or vindictive damages, which are sometimes given in personal torts.³ These damages will be trebled by the court, according to the statute.⁴

§ 338. In estimating the "actual damages" the rule is, in cases of infringement by an actual use of the plaintiff's invention, — as by making and using a patented machine, — to give the value of such use during the time of the illegal user, that is to say, the amount of profits actually received by the defendant,⁵ but not the profits which he might have made by reasonable diligence.⁶

To this, it seems, there should be added all the losses to which the plaintiff has been subjected by the piracy.⁷

¹ Act of July 4, 1836, § 15.

² Act of July 4, 1836, § 14.

³ *Whittemore v. Cutter*, 1 Gallis. 478. It seems, however, that if the defendant is sued a second time for an infringement, exemplary damages may be given. *Alden v. Dewey*, 1 Story's R. 336, 339; *Hall & Wiles*, 2 Blatch. 194.

⁴ *Lowell v. Lewis*, 1 Mas. 184, 185; *Gray v. James*, Peters's C. C. R. 394.

⁵ *Lowell v. Lewis*, 1 Mas. 184; *Whittemore v. Cutter*, 1 Gall. 429.

⁶ *Dean v. Mason*, 20 How. 198.

⁷ *Earle v. Sawyer*, 4 Mas. 1, Story, J., said: "But I wish to say a few words in

Where there is no established patent or license-fee, general evidence of the utility and superiority of the invention may be sub-
relation to the point of law which the objection suggests, and which is founded upon the decision of this court in *Whittemore v. Cutter*, 1 Gall. 479. To that decision, as founded in just principle, I still adhere, although, I confess, with subdued confidence, since I have reason to believe that it has not met the concurrence of other and abler judicial minds. It has been maintained by some learned persons, that the price of the invented machine is a proper measure of damages, in cases where there has been a piracy by making and using the machine, because, in such cases, the verdict for the plaintiff entitles the defendant to use the machine subsequently, and, in short, transfers the right to him in the fullest manner, and in the same way, that a recovery in trover or trespass, for a machine, by operation of law, transfers the right to such machine to the trespasser, for he has paid for it. If I thought such was the legal operation of a verdict for the plaintiff, in an action for making and using a machine, no objection could very forcibly occur to my mind against the rule. But my difficulty lies here. The Patent Act gives to the inventor the exclusive right of making and using his invention during the period of fourteen years. But this construction of the law enables any person to acquire that right, by a forced sale, against the patentee, and compels him to sell, as to persons or places, when it may interfere essentially with his permanent interest, and involve him in the breach of prior contracts. Thus, the right would not remain exclusive; but the very attempt to enforce it would involve the patentee in the necessity of parting with it. The rule itself, too, has no merit from its universality of application. How could it apply, when the patentee had never sold the right to any one? How, when the value of the right depended upon the circumstance of the right being confined to a few persons? Where would be the justice of its application, if the invention were of enormous value and profit, if confined to one or two persons, and of very small value if used by the public at large, for the result of the principle would be, that all the public might purchase and use it by a forced judicial sale. On the other hand, cases may occur, where the wrong done to the patentee may very far exceed the price which he would be willing to take for a limited use by a limited number of persons. These, among others, are difficulties which press on my mind against the adoption of the rule; and where the declaration goes for a user during a limited period, and afterwards the party sues for a user during another and subsequent period, I am unable to perceive how a verdict and judgment in the former case is a legal bar to a recovery in the second action. The piracy is not the same, nor is the gravamen the same. If, indeed, the plaintiff, at the trial, consents that the defendant shall have the full benefit of the machine forever, upon the ground of receiving the full price in damages, and the defendant is content with this arrangement, there may be no solid objection to it in such a case. But I do not yet perceive how the court can force the defendant to purchase, any more than the plaintiff to sell, the patent right for the whole period it has to run. The defendant may be an innocent violator of the plaintiff's right; or he may have ceased to use, or to have employment for such a machine. There are other objections alluded to in the case in 1 Gall. 484. Struck with similar difficulties in establishing any general rule to govern cases upon patents, some learned judges have refused to lay down any

mitted to the jury, who are therefrom to estimate the damages, not for the whole term of the patent, but only during the continuance of the improvement. A recovery of such damages does not vest in the infringer the right to continue the use.¹

The difference between the actual cost of making a patented machine and its sale price is not all profit; but the jury must take into account the interest on the capital, the risk of bad debts, and the expenses of selling, in order to arrive at the defendant's real profits.²

In *Pitts v. Hall*,³ the following rule has been given by Mr. Justice Nelson: "One mode of arriving at the actual damages is to ascertain the profits which the plaintiff derives from the machines

particular rule of damages, and have left the jury at large to estimate the actual damages according to the circumstances of each particular case. I rather incline to believe this to be the true course. There is a great difference between laying down a special and limited rule as a true measure of damages, and leaving the subject entirely open, upon the proofs in the cause, for the consideration of the jury. The price of the machine, the nature, actual state and extent of the use of the plaintiff's invention, and the particular losses to which he may have been subjected by the piracy, are all proper ingredients, to be weighed by the jury in estimating the damages, *valere quantum valeant*."

See also the observations of L. J. Clerk Hope, in *Househill Co. v. Neilson*, 1 Web. Pat. Cas. 697, note. In *Pierson v. Eagle Screw Co.*, 3 Story's R. 410, Story, J., again said: "But, upon the question of damages, I would upon this occasion state (what I have often ruled before), that if the plaintiff has established the validity of his patent, and that the defendants have violated it, he is entitled to such reasonable damages as shall vindicate his right and reimburse him for all such expenditures as have been necessarily incurred by him beyond what the taxable costs will repay, in order to establish that right. It might otherwise happen that he would go out of court with a verdict in his favor, and yet have received no compensation for the loss and wrong sustained by him. Indeed, he might be ruined by a succession of suits, in each of which he might, notwithstanding, be the successful party, so far as the verdict and judgment should go. My understanding of the law is that the jury are at liberty, in the exercise of a sound discretion if they see fit, (I do not say that they are positively and absolutely bound under all circumstances,) to give the plaintiff such damages, not in their nature vindictive, as shall compensate the plaintiff fully for all his actual losses and injuries occasioned by the violation of the patent by the defendants."

And yet, in *Elwood v. Christy*, 18 Com. Ben. N. S. 494, the Court of Common Pleas, sitting in Chancery (under 15 & 16 Vict.), refused to order an account to be taken of *the loss which the plaintiff had sustained by the infringement*, and substituted, on motion, an account of *the profits which had been actually made by the defendants*.

¹ *The Suffolk Co. v. Hayden*, 3 Wall. 315.

² *Wilbur v. Beecher*, 2 Blatchf. 132.

³ *Pitts v. Hall*, 2 Blatchf. 229.

which he manufactures and sells, and which have been made and sold by the defendant. Another mode is to ascertain the profits which the party infringing has derived from the use of the invention or the construction of the machine. . . . This measure of damages, however, is not controlling, and ought not to be; because a party concerned in infringing a patent stands in a different position from the patentee, not having been previously subjected to the expense and labor to which the latter is frequently exposed in the process of invention and experiment. Hence the person who enters upon the business without previous expense may very well afford to sell machines at a less profit than the patentee. . . . Profits which the party infringing might be satisfied with, and which would afford him compensation, would not afford indemnity to the patentee. If, therefore, on looking into the profits made by the defendant, the jury shall be of the opinion that they do not correspond with the fair profits which the plaintiff, if left alone, would have realized, they are not bound by the measure of the defendant's profits, but have a right to look to the profits which the patentee would have made under the circumstances, if not interfered with."

Still, where a plaintiff is allowed to recover "actual damages," he is bound to furnish evidence by which the jury may assess them. If he rest his case after merely proving an infringement, he is entitled to nominal damages, but no more. He cannot call on a jury to guess out his case without evidence. Actual damages must be calculated, not imagined, and an arithmetical calculation cannot be made without certain data.¹

Where part of an invention is not original (e. g. where the patent is for an improvement), that part cannot, in estimating the damages of an infringement, be so mixed up with those which are original, that the jury may regard the whole as a unit.²

¹ *City of New York v. Ransom*, 23 How. 487. Here it was proved, on trial, that the corporation of New York had applied the patentee's invention to fifty steam fire-engines, but no information whatever was given of the price or value of a single license. The Supreme Court, on appeal, held that the jury had had no evidence to sustain a verdict for \$20,000 damages.

² *Jones v. Moorehead*, 1 Wall. 155. In this case, the patentee's invention consisted in improving the casing of locks so as to make them double-faced. The jury at the circuit trial estimated the damages by taking the profits made by the defendants on the sale of the entire lock as thus improved. The Supreme Court set aside the verdict, with costs.

By way of conclusion, we quote *in extenso* from the decision of the Supreme Court, in *Seymour v. McCormick*,¹ as containing

¹ *Seymour v. McCormick*, 16 How. 480. "It must be apparent to the most superficial observer, that there cannot, in the nature of things, be any one rule of damages which will equally apply to all cases. The mode of ascertaining actual damages must necessarily depend on the peculiar nature of the monopoly granted. A man who invents or discovers a new composition of matter, such as vulcanized India-rubber, or a valuable medicine, may find his profit to consist in a close monopoly, forbidding any one to compete with him in the market, the patentee himself being able to supply the whole demand at his own price. If he should grant licenses to all who might desire to manufacture his composition, mutual competition might destroy the value of each license. . . . If any person could use the invention or discovery by paying what a jury might suppose to be the fair value of a license, it is plain that competition would destroy the whole value of the monopoly. In such cases the profits of the infringer may be the only criterion of the actual damage of the patentee. But one who invents some improvement in the machinery of a mill cannot claim that the profits of the whole mill should be the measure of damages. And where the profit of the patentee consists neither in the exclusive use of the thing invented or discovered, nor in the monopoly of making it for others to use, it is evident that this rule cannot apply. The case of Stimpson's patent for a turn-out in a railroad is an example. It was the interest of the patentee that all railroads should use his invention, provided that they paid him the price of his license. He could not make his profit by selling it as a complete and separate machine. An infringer of such a patent could not be liable to damages to the amount of the profits of the railroad, nor could the actual damages to the patentee be measured by any known ratio of the profits on the road. The only actual damage which the patentee has suffered is the non-payment of the price which he has put upon his license, with interest, and no more. There may be cases, as where the thing has been used but for a short time, in which the jury should find for less than that sum; and there may be cases where, from some peculiar circumstances, the patentee may show actual damages to a larger amount. Of this a jury must judge from the evidence, under instructions from the court that they can find only such damages as have been actually sustained. Where the inventor finds it profitable to exercise his monopoly by selling licenses to make or use his improvement, he has himself fixed the average of his actual damage when the invention is used without his license. If he claims anything above that amount, he is bound to substantiate his claim by clear and distinct evidence. Where he has himself established the market value of his improvement as separate and distinct from the other machinery with which it is connected, he can have no claim in justice and equity to make the profits of the whole machine the measure of his demand. It is only where, from the peculiar circumstances of the case, no other rule can be found, that the defendant's profits become the criterion of the plaintiff's loss. Actual damages must be actually proved, and cannot be assumed as a legal inference from any facts which amount not to actual proof of the fact. What a patentee 'would have made if the infringer had not interfered with his rights,' is a question of fact and not 'a judgment of law.' The question is not what speculatively he may have lost, but what he actually did lose. It is not a

the most recent enunciation of some of the principles applicable to this difficult question of estimating the damages in patent suits.

§ 339. But where merely the making of a patented machine is proved, and no actual damages have been sustained, nominal damages only should be given.¹

'judgment of law' or necessary legal inference, that if all the manufactures of locomotives and steam-engines who have built and sold engines with a patented cut-off or steam-whistle had not made such engines, that therefore all the purchasers of engines would have employed the patentee of the cut-off or whistle; and that consequently such patentee is entitled to all the profits made in the manufacture of such steam-engines by those who may have used his improvement without his license. Such a rule of damages would be better entitled to the epithets of 'speculative,' 'fanciful,' 'imaginary,' than that of 'actual.'

"If the measure of damages be the same, whether the patent be for an entire machine or for some improvement in some part of it, then it follows that each one who has patented an improvement in any portion of a steam-engine or other complex machine may recover the whole profits arising from the skill, labor, material, and capital employed in making the whole machine; and the unfortunate mechanic may be compelled to pay treble his whole profits to each of a dozen or more several inventors of some small improvement in the engine he has built. By this doctrine, even the smallest part is made equal to the whole, and 'actual damages' to the plaintiff may be converted into an unlimited series of penalties on the defendant.

"We think, therefore, that it is a very grave error to instruct a jury 'that as to the measure of damages, the same rule is to govern, whether the patent covers an entire machine or an improvement on a machine.'

"It appears, from the evidence in this case, that McCormick sold licenses to use his original patent of 1834 for twenty dollars (\$20) each. He sold licenses to the defendants to make and vend machines containing all his improvements to any extent for thirty (\$30) dollars for each machine, or at an average of ten (\$10) for each of his three patents. The defendants made and sold many hundred machines for that price, and no more. They refused to pay for the last three hundred machines, under a belief that the plaintiff was not the original inventor of this last improvement, whereby a seat for the raker was provided on the machine, so that he could ride and not be compelled to walk as before. Beyond the refusal to pay the usual license price, the plaintiff showed no actual damage. The jury gave a verdict for nearly double the amount demanded for the use of three several patents, in a suit where the defendant was charged with violating one only, and that for an improvement of small importance when compared with the whole machine. This enormous and ruinous verdict is but a corollary or necessary consequence of the instructions given in that part of the charge of the court on which we have been commenting and of the doctrines therein asserted, and to which this court cannot give their consent or concurrence." Per Grier, J. Compare *McCormick v. Seymour*, 2 Blatchf. 240, the case reversed.

¹ *Whittemore v. Cutter*, *supra*.

§ 340. Where patented articles (cast-iron water-wheels) were manufactured by the defendants on an order given by a third person, and the order was partially executed before the defendants had notice of the patent, and two wheels only were cast after notice, it was held that nominal damages only were proper.¹

§ 341. After considerable fluctuation of opinion, it has been decided by the Supreme Court, that counsel fees are not a proper element for the consideration of the jury in the estimation of damages in actions for the infringement of a patent right.²

§ 342. As to the time of the acts complained of as amounting to an infringement, it is obvious that the patent cannot be infringed by anything done when the patent did not exist; and therefore it is no infringement to make or use a machine subsequently patented, or otherwise to practise the invention which is afterwards made the subject of a patent, before the patent is obtained. But when a patent is granted, the right in the subject-matter relates back to the time of the invention, so that the party who has practised the invention between the time of the discovery and the issuing of the patent, must cease to do so. Any acts of infringement done after the issuing of the patent will be ground for the recovery of damages, although the previous acts were done at a time when it was uncertain whether there would be any patent issued.³ The same is true of acts done in violation of a patent which is surrendered and renewed on account of defects in the specification. If a party erect and put in use a patented machine, during the existence of a defective patent which is afterwards surrendered, it will be an infringement of the new and renewed patent, if he continues the use of such machine after the renewal; and it seems that no notice of the renewal is necessary; and if it is, that knowledge of the original patent will be notice of the renewed patent granted in continuation of it, according to the provisions and principles of law.⁴

¹ *Bryce v. Dorr*, 3 McLean, 582.

² *Day v. Woodworth*, 13 How. 363; *Teese v. Huntingdon*, 23 How. 2; affirming the doctrine of *Whittemore v. Cutter*, 1 Gall. 429, and *Stimpson v. The R. R.* 1 Wall. C. C. R. 164, and overruling that of *Boston Manuf. Co. v. Fiske*, 2 Mason, 119; and *Allen v. Blunt*, 3 Story, 742; Cf. *Blanchard's, &c. v. Warner*, 1 Blatch. 258, reporter's note to p. 272.

³ *Evans v. Weiss*, 2 Wash. 342; *Dixon v. Moyer*, 4 Wash. 68.

⁴ *Ames v. Howard*, 1 Sumner, 482, 488. In this case Mr. Justice Story said:

In conformity with this doctrine it has been recently held, that suits for infringement pending at the time of the surrender and reissue of letters-patent, fall with such surrender, because the foundation on which they rested no longer exists.¹

§ 343. A patentee may recover damages for an infringement during the time which intervened between the destruction of the Patent Office by fire, in 1836, and the restoration of the records under the act of March 3, 1837.²

§ 343 *a*. The topic of infringement by means of chemical equivalents has lately received in England an elaborate and almost exhaustive discussion, so elaborate, indeed, that we can hope to give in the present volume nothing more than a general outline and abstract. The reported *American* cases on the subject are but few.

In *Byam v. Farr*,³ the patentee's claim was as follows: "What I claim as my invention is the using of a paste or composition to ignite by friction, consisting of phosphorus and earthy material and a glutinous substance only, without the addition of chlorate

"The next objection is, that in point of law the plaintiff is not entitled, without some previous notice or claim, to maintain this action under his patent against the defendants, for continuing the use of the machines erected and put in use by them before the patent issued. This objection cannot prevail. I am by no means prepared to say, that any notice is, in cases of this sort, ever necessary to any party who is actually using a machine in violation of the patent right. But it is very clear, that in this case enough was established in evidence to show that the defendants had the most ample knowledge of the original patent taken out by the plaintiff in 1822, and of which the present is only a continuation, being grounded upon a surrender of the first for mere defects in the original specification. Whoever erects or uses a patented machine does it at his peril. He takes upon himself all the chances of its being originally valid; or of its being afterwards made so by a surrender of it, and the grant of a new patent, which may cure any defects, and is grantable according to the principles of law. That this new patent was so grantable is clear, as well from the decision of the Supreme Court in *Grant v. Raymond*, (6 Peters R. 218,) as from the act of Congress of the 3d of July, 1833, ch. 162. There is no pretence to say that the defendants were *bonâ fide* purchasers without any knowledge or notice of any adverse claim of the plaintiff under this original patent; and the damages were by the court expressly limited to damages which accrued to the plaintiff by the use of the machine after the new patent was granted to the plaintiff."

¹ *Moffitt v. Garr*, 1 Black. 273. See, further, same case, sub-chapter on Action at Law.

² *Hogg v. Emerson*, 6 How. 437.

³ *Byam v. Farr*, 1 Curtis, C. C. 260.

of potash, or of any highly combustible material, such as sulphuret of antimony, in addition to the phosphorus." In construing this specification, Judge Curtis says: "The old method of making friction matches was to use a composition consisting of phosphorus, chlorate of potash, sulphuret of antimony, and glue; so that the invention claimed by the plaintiff consists in rejecting two of the elements, viz., chlorate of potash and sulphuret of antimony, and substituting in their place chalk or some earthy matter. To compare the methods of the patentee and of the defendant, it may be said that the patentee has improved on the known compound, by omitting two substances previously used, and introducing one not used; while the defendants have merely omitted one substance previously used. It is insisted, however, that the sulphuret of antimony, used by the defendants, has, in point of fact, the same effect in their composition as the chalk or other earthy substance has in the plaintiff's composition; that both act mechanically only, and not chemically: the office of each being to surround the particles of phosphorus, and, aided by the glue, to retain them and protect them from the air and from the action of caloric, until the phosphorus is ignited by friction, and then to convey the heat to the sulphur, and thus cause the match to burn. In other words, that in this compound and for this manufacture, sulphuret of antimony is a mere equivalent for the earthy matter employed by the patentee; and that though it is not technically, in the nomenclature of chemistry, an earthy matter, yet that the claim is not to be limited to substances strictly so termed; because, while the specification declares chalk or Spanish white to be the best material, it also makes known that the ingredients may be varied, 'and other absorbent earths or materials may be used instead of the carbonate of lime.' And it is urged that the substance of this invention does not consist in the use of carbonate of lime in this composition, but in the use of a material suitable to surround and protect the phosphorus, and convey its heat to the sulphur when ignited, and that the defendant uses such a material. There is certainly much force in this argument; but it is encountered by difficulties which I think insuperable. To substitute in place of some one element in a composition of matter a mere known equivalent, is an infringement; because, although the patentee has not expressly mentioned such equivalent in his claim, he is understood to embrace it, and in contempla-

tion of law does embrace it, without an express mention of it. But he is not obliged to embrace equivalents in his claim. He may, if he choose, confine himself to the specific ingredients mentioned, and expressly exclude all others; or he may expressly exclude some one or other. If he does so, it cannot be maintained that what he has expressly disclaimed is in point of law claimed. Now this patentee declares, in terms, that his composition is to be without the addition of sulphuret of antimony. It is said that he meant to exclude it, because he considered it, as he says in the claim, a highly combustible substance, and that he was under a mistake, as it is not. This may be true; but the question is not what induced the patentee to exclude it, but whether he has in fact excluded it. If he made a mistake, the patent law affords means of correcting it; but until corrected, it must be taken as it stands, whatever error may have led to it.

“It is also argued that it was the intention of the patentee to exclude sulphuret of antimony only when used with chlorate of potash. But this is not consistent with the plain meaning of the words, which are, ‘without the addition of chlorate of potash, or any highly combustible material, such as sulphuret of antimony.’ And when it is borne in mind what the composition previously known was, and how the patentee has described his invention, I think it cannot be admitted that the patentee really intended to cover the composition used by the defendants. As already stated, the old method was to combine phosphorus, glue, sulphuret of antimony, and chlorate of potash. If the patentee intended to cover an improvement consisting only in the omission of the chlorate of potash, as is now said, he might reasonably have been expected so to declare. But instead of this he, in terms, declared that his invention did not extend to the use of this substance. So far as respects his own intent, there can be no question it was to make a claim which excluded the composition used by defendants; and this is decisive. It must be remembered that one object of the patent law in requiring the inventor to put on the public records a description of his invention, is to inform the public what may safely be done during the existence of the patent, without interfering with his claims; and, upon the soundest principles, the patentee must be held to be estopped from asserting a claim which is expressly waived on the record.”

In a subsequent case arising under the same patent,¹ the court

¹ *Byam v. Eddy*, 2 Blatchf. 521.

gave the following opinion: "The invention claimed in the specification is not a compound of new ingredients before unused in making matches, but simply and only a new combination of old materials before in use for that purpose. It purports to consist in a composition producing ignition and combustion by friction, formed of phosphorus with the earthy materials and the glutinous substance only, without the presence of chlorate of potash or any other like objectionable ingredient, thus avoiding the danger supposed to exist in the combination of substances of such a nature with phosphorus. This, as I understand the specification, is the 'new composition of matter,' or new combination of materials for producing ignition, claimed and patented as an improvement; and it seems quite clear that any person may use any one or all of the materials forming the composition, provided he does not use them in the combination patented. Certainly any one may lawfully use them for that purpose in combination with chlorate of potash, as they were formerly used, for that is a combination recognized as essential, different, and as being known and in use anterior to the patent. The question, therefore, is, whether the defendant, in manufacturing and dealing in friction matches, has used the plaintiff's combination, or made matches substantially according to their patent. . . . The only difference, aside from the relative proportions of the ingredients, between the composition patented and that claimed to have been used by the defendant, consists, as appears from the formula given by each, in the one being made *with* and the other *without* chlorate of potash; the question in the case is accordingly reduced to the simple inquiry, whether the matches manufactured by the defendant contain that substance as a principal ingredient, in conformity with the prescribed formula, or whether they are made without it or with so inconsiderable a portion of it as to be substantially according to plaintiff's patent." Thereupon the court decided, as a matter of fact, that the evidence was not sufficient to show that the defendants had departed from their own formula, and accordingly discharged the rule and refused an attachment.

With this may be compared the language of Grier, J., in *Good-year v. R. R.*¹ "Although partaking somewhat of the nature of an *obiter dictum*, inasmuch as the specification was decided to be a claim for both the process and the *product*, and the patentee's

¹ 2 Wallace, C. C. 356.

patent consequently to be infringed by any one using the article alone, independent of the manner in which it might have been made, still it may serve as an expression of judicial opinion.

“What forms the essence or substance of this discovery? What is the *sine qua non*, or that without which this composition of matter cannot be produced? The specification says, it is the application of a high degree of heat between 212° and 350° Fahrenheit. You may vary the proportions of sulphur or change the metallic oxides, and succeed more or less, if the exposure to heat between these points be continued for a sufficient time. But no mere changes in the combined materials will have a beneficial effect without this application of a high degree of artificial heat. Now it must be evident that any person having the benefit of plaintiff's discovery, starting from the platform erected by him, may possibly vary the process and obtain the same result. He may use *salts of zinc* for *salts of lead*, *arsenic* or *magnesia* for *sulphur*, or heat by steam instead of air; and many other variances of the relative proportions of the materials might be discovered to be as good as those patented. Yet it must be equally evident that such person is pirating the plaintiff's invention. Suppose that, before Goodyear's discovery, a manufacturer had taken to a chemist's laboratory some India-rubber, sulphur, and white lead, and asked him to make a compound, having the qualities now exhibited by the substance known as 'vulcanized rubber.' He would have received an answer denying the possibility of making such a compound by any process known to scientific men. Now suppose he had put into the same person's hand the specification of plaintiff's patent, and asked him to discover some means by which the same result might be produced in mode or proportions different from that set forth in the patent. What science was before incapable of producing by synthesis or any reasoning *a priori* can now be improved by valuable hints derived from analysis. The chemist can now immediately suggest many changes in the process which may produce equivalent or better results. He could at once suggest that a carbonate of zinc or some other metallic oxide could probably perform the office of white lead; that probably arsenic or magnesia or some other metal might be substituted for sulphur; that sulphur might perhaps be used better in a gaseous form; that the high degree of heat so necessary to the process could be as well or better applied by means

of steam than dry heated air. Yet no one whose perceptions are not perverted can fail to see that all such changes, such interposition of chemical equivalents, though possibly improvements on the original process patented, have their foundation on the patentee's first discovery, and start by appropriating or pirating it."

On turning to the *English* cases on this subject, we find, first, the discussion of the infringement of Martin's patent for artificial cement.¹ This patent has already been treated of in the chapter on Specification. In substance, it was a claim for the production of hard cement by the use of gypsum, *alkali*, and *acid*. The defendant claimed also under a patent for combining gypsum, sulphate of lime, or other calcareous substance with *borax*. Application was made to the Vice-Chancellor for an injunction, which was granted, and on appeal, affirmed by the Chancellor, Lord Cottenham, who uses the following language: "Now the defendant says, 'My invention consists in combining gypsum, sulphate of lime, or other calcareous substance with borax, and subjecting them to heat.' *Primâ facie* that may appear to be a very different thing, because, till you come to examine what borax is, it may appear that borax is some substance totally different, and not within what the plaintiff discovered; that borax is a substance of itself which is capable, by combination with gypsum, of very hard cement; and that the patentee has no right to say, I am entitled to the exclusive privilege, because I claim the invention of uniting gypsum with acid and an alkali. But then, when we find that borax itself is composed of an acid and an alkali, where is the difference? If borax is an article used in the trade found in a natural state, but used as an artificial composition composed and compounded of an alkali and an acid, is it not exactly the same thing as if the plaintiff had said, I claim my invention to be the uniting of gypsum with the acid and alkali found in borax? It is hardly a different mode of describing the same thing. He has adopted different language, but if the language conveys the same meaning, it is the same thing."

A temporary injunction was accordingly granted, with an order to have the validity of the specification tried in a court of law. First, before Pollock, C. B., and a jury, then before Pollock, C. B., Parke, Alderson; and Platt, B. B., it was held that the plaintiff's

¹ 2 Webs. Pat. Cas. 172, 178, 179.

specification was bad on account of uncertainty, inasmuch as it claimed *any* acid, while in reality there were several well-known acids of commerce which would not answer. But with regard to the alleged infringement, the jury found, in accordance with the suggestion of Pollock, C. B., that the use of borax *was* an infringement of plaintiff's patent. The Chief Baron says in his charge: "Gentlemen of the jury, the only point that I have to leave to you, is, whether you think the defendant has infringed the first patent of the plaintiff by using boracic acid and soda, that is, in the shape of borax, instead of the pearlash, which is potash and sulphuric acid, the only alkalis and only acid mentioned in the specification. . . . It has been said that this borax which the defendant uses is a chemical equivalent. I may say that I do not quite go along with the doctrine of equivalents in chemistry applied in the same way as in mechanics and those matters in which you can apply the principles of the exact sciences. . . . There you can frequently predict the results without the slightest difficulty, and with the same certainty as that with which a skilful arithmetician can tell you what will be the amount of certain numbers added together, and that a certain other set of numbers, apparently differing from them altogether will, when added together, produce the same result. With precisely the same certainty a skilful mechanic will tell you that such and such a combination will produce a result, and that such and such another combination, to the ordinary eye apparently totally different, will produce precisely the same result; but looked at with the experienced eye of a mechanic, he would say, yes, there appears to be a great difference; here is a lever instead of an inclined plane, a pully instead of two wheels to change the motion, and so on; but a skilful mechanic will say, the general expression in all these might be put down as exactly the same; so that, however different they may appear to the eye, they are to the mind precisely the same. I do not think that doctrine applies altogether to the case of chemistry, because, although you can predict with confidence in mechanics, in some instances, and in some cases where mathematics can be applied, in chemistry you almost entirely fail. You cannot — because sulphuric acid will succeed — tell at all that nitric acid will succeed, or any other acid, till it has been tried. They do not exist in any relation to each other as numbers do, or as mechanical science presents to you the different mechanical powers. You

cannot anticipate the result; it is a mere question of result upon experiment. Still there may be a probable anticipation of a result, which may be treated, and properly, by a jury as merely a servile imitation or else a colorable evasion of the patent. That may occur in chemistry; and when one of the witnesses (Mr. Redwood) stated that he thought borax was a salt that would most probably suggest itself to anybody as likely to answer where sulphate of potash had succeeded, I must own that I heard it with great surprise; but when explained, it was perfectly true and intelligible. In reply to the question, 'If you wished to make a cement similar to the plaintiff's, without using sulphuric acid and potash, what would you suggest?' he replied, 'I should give the preference to borax.' Now I could not conceive why, sulphuric acid being a very strong acid, boracic acid a very weak one, and potash and soda being very analogous as the two fixed alkalis, why any one's attention as a chemist should be directed to borax more than to any other salt. Then it is explained. He says, 'Sulphate of potash acts as a flux. Borax is a salt that also acts as a flux. This opinion I obtained, for I examined the substance with a microscope, and I observed that particles of the plaintiff's cement presented to the microscope the appearance of having melted; I therefore thought that any salt that would operate as a flux would probably answer better than any other salt, therefore I should have used borax.' But if borax is used merely as a flux, and not because it is a mixture of an alkali and an acid, I should say that really has nothing to do with the infringement of the patent, any more than if they had used some totally foreign material that might be suggested, for instance, some one of the fifty odd metals that exist; if any one of these could be used as a flux, being neither an acid nor an alkali, he might have used that flux metal and that could not be an infringement of the patent. The use of borax merely as a flux, and not as an alkali and an acid, would probably be considered no evasion of the patent. . . . Then, if sulphate of potash so used (i. e. used instead of its ingredients) would be an infringement, would borax, which is the boreate of soda, be an infringement? Why, soda is an alkali, and boracic acid is an acid, which exists in a separate form; it might be used, it has been used; and the question is, is that within the scope and compass, in point of fact, of the plaintiff's specification, assuming that the plaintiff claims acids and alkalis beyond those specifically named. The true con-