

his own error, but, "under the special circumstances of the case, it would seem to have been a duty, as the inventors were led into the error by himself."¹

In the case of *Bennet v. Fowler*,² "the invention had been originally covered by one patent, but in the reissue was separated and embodied in two reissues; and the reissue in the twofold form was held valid by the court. It is true that both reissued patents related to lifting and depositing a load of hay in the mow of a barn or in a rick or shed; but in one of the reissues the lifter was somewhat differently constructed, so as to adapt it specially to the stacking of hay. In this case the court referred to the difficulty of laying down any general rule by which to determine whether a given invention or improvements shall be embraced in one or more patents, and said, "Some discretion must necessarily be left on this subject to the head of the Patent Office. It is often a nice and perplexing question."

§ 282 e. Under the acts of 1836 and 1837, it was made the duty of the commissioner, on the filing of an application for a patent, or a reissue, and the payment of the duty required, to make or cause to be made an examination of the alleged new invention, or the amended specification and claim accompanying the application for a reissue, and to grant such patent or reissue, if all the statutory requirements had been complied with. If the commissioner refuse to receive such application, a *mandamus* will lie to compel him to do so. If the application is in proper form, and the requirements of the statute regulating applications have been complied with, the commissioner is bound to consider the case and render a decision. If, having investigated the subject, the commissioner decides that the claimant is not entitled to a patent or a reissue, such claimant has a remedy by appeal from this decision. A *mandamus*, however, will only lie in case of refusal by the commissioner to act, and cannot be made to perform the functions of a writ of error.

An important case, involving the points under consideration, was decided by the Supreme Court of the United States in 1866.³ *Whiteley*, the defendant in error, was the assignee of an exclusive sectional interest in a patent granted in 1855, for an

¹ *Morey v. Lockwood* (1868), 8 Wall. 230.

² 8 Wall. 445.

³ *Commissioner of Patents v. Whiteley*, 4 Wall. 522.

improvement in mowing-machines. In 1863, he applied to the commissioner of patents for a reissue of the patent, without joining the other assignees of interests in the same patent in the application. On the ground that the applicant was not the assignee of the whole interest in the patent, the commissioner declined to entertain the application. He also declined to allow an appeal to be taken from this decision. A writ of *mandamus* was thereupon obtained from the Supreme Court of the District of Columbia, commanding the commissioner "to refer said application to the proper examiner, or otherwise examine or cause the same to be examined according to law." A writ of error was now brought in the Supreme Court of the United States to reverse that order.

Among other things it was contended on the part of the commissioner that no application had been filed in the Patent Office. This position, however, was held by the court to be untenable, as it appeared that the application had been filed with the acting commissioner, and the requisite fees had been paid by the relator; although it further appeared that such fees had not been placed to the credit of the Patent Office, but were in the hands of the chief clerk subject to the relator's order. The court was of the opinion that the relator, by taking these steps, "had done all in his power to make his application effectual, and had a right to consider it properly before the commissioner." It was therefore the duty of the commissioner to examine into the merits of the question, and the status of the applicant. It was his duty to decide whether the applicant was an assignee at all, and, if so, whether he was an assignee with such an interest as entitled him to a reissue within the meaning of the statutory provision upon the subject. The law regulating the action of the commissioner was thus stated by Mr. Justice Swayne, who pronounced the judgment of the court: "It was his first duty to receive the application, whatever he might do subsequently. Without this initial step there could be no examination, and indeed no rightful knowledge of the subject on his part. Examination and the exercise of judgment, with their proper fruit, were to follow, and they did follow.

"The commissioner found the question, whether the assignee was such a one as the law entitled to a reissue, lying at the threshold of his duties. It required an answer before he could proceed further. His decision was against the appellant. His examination of the subject was thorough, and his conclusion is

supported by an able and elaborate argument. It was made a part of his reply to the rule, and is found in the record.

“From this decision, whether right or wrong, the relator had a right, under the statute, to appeal.

“If the *mandamus* had ordered the commissioner to allow the appeal, we should have held the order under which it was issued to be correct. But the order was that he should proceed to examine the application. That he had already done. The preliminary question which he decided was as much within the scope of his authority as any other which could arise. Having resolved it in the negative, there was no necessity for him to look further into the case. Entertaining such views, it would have been idle to do so. *The question* was vital to the application, and its resolution was fatal, so far as he was concerned. Only a reversal by the tribunal of appeal could revive it, and cast upon him the duty of further examination.”

§ 282 *f*. In the case of *Potter v. Braunsdorf*,¹ it appeared that letters-patent for an improvement in sewing-machines had been granted to John Bachelder, May 8, 1849, for fourteen years. Subsequently Singer and Clark, while owners of the original patent by assignment, surrendered it, and obtained a reissue on the 2d of November, 1858, the specification of such reissue being signed by themselves, but not by Bachelder. This reissue was not assigned to Bachelder. After such assignment and reissue, an application for the extension of the original patent was made by Bachelder, and such extension was granted to him by the commissioner of patents for the term of seven years from May 8, 1863. The original patent, so extended, was reissued to Bachelder, September 22, 1863, and was again reissued to him December 12, 1865.

On this state of facts, it was contended on the part of the defendants that the original patent ceased to exist by the surrender of November 2, 1858, and that, therefore, and until the 8th of May, 1863, only the reissue of the former date was in existence. The extension, therefore, it was asserted, was made after the term of the original patent had expired by such surrender, and was null and void under the eighteenth section of the act of 1836, which provided that “no extension of a patent shall be granted after the expiration of the term for which it was originally issued.”

¹ (1869) 7 Blatchf. 97.

This view of the law, however, was not accepted by the court, and the extension was declared to be valid. The court considered that the question had been disposed of by the decision in the case of *Potter v. Holland*.¹ After quoting from the opinion in that case, Mr. Justice Blatchford thus stated the law governing the point under consideration: "These principles and views apply, with especial force, to the case in hand. Where a patentee, having secured his invention by a patent with a specification in such form as he regards to be most proper, assigns the entire patent for the original term only, reserving his right, under the eighteenth section of the act of 1836, to apply for and obtain an extension, it ought not to be, and it is not, in the power of the assignee, by surrendering the patent and obtaining a reissue of it, on a specification not signed, assented to, or adopted by the patentee, and which perhaps the patentee may regard as rendering the reissued patent invalid, or as securing, by new and different claims, rights of little value, to affect, without his consent, the statutory right conferred on the patentee to apply for and obtain an extension of the only patent which he has ever adopted or assented to. The point taken that such right is thus affected is not made with any grace, nor is it entitled to any favor. It is not made in the interest of the assignees, Singer and Clark, who obtained the reissue. They have no interest whatever in the extended term. Their rights expired with the first term. The point is taken in the interest of the infringers, to whom it must be a matter of indifference whether the certificate of extension was made on the original patent, or on the reissue granted to Singer and Clark. As Bachelder did not choose to take advantage of the surrender and reissue, or to ratify or adopt them, he had, after such surrender and reissue, the same rights, in respect to obtaining an extension or prolongation of the original term of fourteen years, under the original patent, that he had before such surrender and reissue. The fact that his assignment to Singer and Clark was of the whole original patent, and not of an undivided part thereof, or of his interest in the same within and throughout a specified part of the United States, can make no difference. He still retained his right to apply for an extension of the original patent, as fully as he would have done if he had conveyed away less than the whole of his interest in the original term. The extended term did not come

¹ 4 Blatchf. 206.

into being until the term granted by the reissue expired, so that the apparent objection does not obtain that there were two patents in existence at the same time for one and the same invention. The inhibition, in the eighteenth section of the act of 1836, against granting an extension after the expiration of the term for which a patent was originally issued, was intended to close the door absolutely, after the fourteen years have expired, against the issuing then of a further seven years' grant. The mischief to be guarded against was, that after the fourteen years had expired, individuals who had relied on such expiration should not be surprised by a grant thereafter of a new term of seven years. In the present case, the fourteen years had not expired when the extension was granted by the certificate referred to. The case of *Moffitt v. Garr* has no application to the present case. There, the patentee himself had surrendered his patent, and the question was whether, after such surrender, he could maintain a suit at law to recover damages for an infringement of the surrendered patent."

§ 283. Mr. Justice Story has held that the statutes which authorize the reissue of a patent because of a defective or redundant 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

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 and back surfaces of the rib. Now by § 13 of act 1836, c. 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 im-

§ 284. When a patent is thus reissued, it is granted for the unexpired term, commencing from the date of the original patent,

provement 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, c. 88, § 9. The act of 1837, c. 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, c. 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 unobtainable 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, c. 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 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 speci-

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

fication, 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, 1838. Subsequently, under the eighteenth section of the act of 1836, c. 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, c. 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, whenever 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

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 new patent was extended for fourteen years, from the 27th December, 1826, '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, c. 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 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

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 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

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 Blatchf. 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.

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, c. 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, c. 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, c. 88, § 16, enacted, "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 before that date may still be extended on application to the commissioner. It therefore remains of importance to ascer-

¹ Act of 1837, c. 45, § 7; act of 1870, § 54; *Tuck v. Bramhill* (1868), 3 Fisher's Pat. Cas. 400; *Aiken v. Dolan*, *ibid.* 197. 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.

tain 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

§ 287 a. Section sixty-three of the act of 1870 provides: "That where the patentee of any invention or discovery, the patent for which was granted prior to the second day of March, eighteen hundred and sixty-one, shall desire an extension of his patent beyond the original term of its limitation, he shall make application therefor, in writing, to the commissioner, setting forth the reasons why such extension should be granted; and he shall also furnish a written statement under oath of the ascertained value of the invention or discovery, and of his receipts and expenditures on account thereof, sufficiently in detail to exhibit a true and faithful account of the loss and profit in any manner accruing to him by reason of said invention or discovery. And said application shall be filed not more than six months nor less than ninety days before the expiration of the original term of the patent, and no extension shall be granted after the expiration of said original term."

Upon the receipt of such application, and the payment of the duty required by law, it is made the duty of the commissioner to "cause to be published in one newspaper in the city of Washington, and in such other papers published in the section of the

¹ *Clum v. Brewer*, 2 Curtis, C. C. 506.

² *Colt v. Young*, 2 Blatchf. 471.

³ *Brooks et al. v. Bicknell et al.*, 3 M'Lean, 250; *Crompton v. Belknap Mills*, 3 Fisher's Pat. Cas. 536. See *supra*, § 282 a.

country most interested adversely to the extension of the patent as he may deem proper, for at least sixty days prior to the day set for hearing the case, a notice of such application, and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted.”¹

On the publication of such notice, the commissioner is required to refer the case to the principal examiner having charge of the class of inventions to which it belongs, who shall make to said commissioner a full report of the case, and particularly whether the invention or discovery was new and patentable when the original patent was granted.

It then becomes the duty of the commissioner to “hear and decide upon the evidence produced, both for and against the extension; and if it shall appear to his satisfaction that the patentee, without neglect or fault on his part, has failed to obtain from the use and sale of his invention or discovery a reasonable remuneration for the time, ingenuity, and expense bestowed upon it, and the introduction of it into use, and that it is just and proper, having due regard to the public interest, that the term of the patent should be extended, the said commissioner shall make a certificate thereon, renewing and extending the said patent for the term of seven years, from the expiration of the first term, which certificate shall be recorded in the Patent Office, and thereupon the said patent shall have the same effect in law as though it had been originally granted for twenty-one years.”

By section sixty-seven the benefit of the extension of a patent is extended to the assignees and grantees of the right to use the thing patented, to the extent of their interest therein.

In *Jordan v. Dobson*,² it was held that Congress has power to authorize, by special act, the extension of a patent, notwithstanding the fact that the original patent has previously expired, and the invention has been introduced to public use.

¹ § 64.

² 2 Abbott's U. S. Rep. § 398.

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, c. 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

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

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 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.

was placed upon her in a foreign port and authorized by the laws of the country to which she belongs.”¹

§ 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;² it is an infringement to use it, though made by

¹ *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. c. 16, § 9.

² *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, c. 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

another; and it is an infringement to sell it, whether made by 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

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."

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

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.¹

§ 292. It is said that there may be a constructive using of a 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.²

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."

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

² *Keplinger v. De Young*, 10 Wheaton, 358, 363. Washington, J., delivering the judgment of the court, said: "The only question which is pre-

§ 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

sented 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, c. 179, which enacts, 'that where any patent shall be granted, pursuant to the act of the 21st of February, 1793, c. 156, any 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 inferring 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

proved, 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

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.

“ 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.

§ 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

"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 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

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

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, c. 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 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

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

But where the specification, although clumsily worded, still contains in substance and intendment a claim for both process 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.”

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.

“ 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

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 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

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 How. 709.

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. R.*, 2 Wallace, C. 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 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 *Kep-linger 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

§ 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 act* of Congress, there being nothing in the act to deprive him of that right.² Where a patent is extended under the *general provisions* of the act of 1836, c. 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.³ 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

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.

² Bloomer v. McQuewan, 14 How. 539, per Taney, C.J.; reasserted in Bloomer v. Millinger, 1 Wall. 340; McLean and Nelson, JJ., strongly dissenting.

³ Cf. Wilson v. Rousseau, 4 How. 646.

infringing the patentee's right.¹ 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.²

§ 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.³

§ 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 patentee, with as little restraint on the public as possible,⁴ 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,”⁵ 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

¹ *Wilson v. Simpson*, 9 How. 109.

² *Brooks v. Stolley*, 3 McLean, 523.

³ *Walton v. Lavater*, 8 C. B. N. s. 162.

⁴ Per Coleridge, J., in *Minter v. Williams*, Webs. Pat. Cas. 135, 138.

⁵ *Whittemore v. Cutter*, 1 Gallis. 429.

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.¹ 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 *bonâ fide* rejected as an accidental product.²

§ 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 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.³

§ 302. Where the subject of the patent is a machine, the using

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

² *Higgs v. Goodwin*, 1 Ell., Blackb. & Ell. 529.

³ *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.

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.¹

§ 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 certain 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 disinfecting 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.²

§ 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.³

¹ *Bryce v. Dorr*, 3 McLean, 582. Two of the articles were made after notice of the patent.

² *Higgs v. Goodwin*, 1 Ell., Bl. & Ell. 529.

³ 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

§ 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 distinguishing 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

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.

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 principles 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

§ 306 *a. Designs.* — What constitutes infringement in the case of designs has been the subject of recent judicial discussion. The Circuit Court held,¹ that the proper test on the question of infringement is substantial identity, as in the case of machinery, not

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, 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 *The Gorham Manufacturing Co. v. White*, 7 Blatchf. 513.

“The same principles,” said Mr. Justice Blatchford, “which govern in determining the question of infringement in respect to a patent for an invention connected with the operation of machinery must govern in determining the question of infringement in respect to a patent for a design. A design for a configuration of an article of manufacture is embraced within the statute, as a patentable design, as well as a design for an ornament to be placed on an article of manufacture. The object of the former may solely be increased utility, while the object of the latter may solely be increased gratification to a cultivated taste, addressed through the eye. It would be as reasonable to say that equal utility should be the test of infringement in the first case, as to say that equal appreciation by the eye should be the test of infringement in the latter case. There must be a uniform test, and that test can only be,

in view of the observation of a casual observer, but of a person versed in the business of designs in the particular trade in question, and who is accustomed to compare such designs intelligently one with the other; and that the mere fact that the resemblance between two designs, which are substantially different, is such as to mislead ordinary purchasers and casual observers, and to induce them to mistake one for the other, is not sufficient to constitute an infringement.

These views, however, were not concurred in by the Supreme Court of the United States. It was the opinion of that court,¹ that the acts of Congress which authorize the grant of patents for designs were plainly intended to give encouragement to the decorative arts. "They contemplate not so much utility as ap-

as in the case of a patent in respect to machinery, substantial identity, not in view of the observation of a person whose observation is worthless, because it is casual, heedless, and unintelligent, and who sees one of the articles in question at one time and place, and the other of such articles at another time and place, but in view of the observation of a person versed in the business of designs in the particular trade in question—of a person engaged in the manufacture or sale of articles containing such designs—of a person accustomed to compare such designs one with another, and who sees and examines the articles containing them, side by side. The question is not, whether one design will be mistaken for the other by a person who examines the two so carelessly as to be sure to be deceived, but whether the two designs can be said to be substantially the same, when examined intelligently side by side. There must be such a comparison of the features which make up the two designs. As against an existing patented design, a patent for another design cannot be withheld because, to a casual observer, the general appearance of the later design is so like that of the earlier one as to lead him, without proper attention, to mistake the one for the other. The same test must be applied on the question of infringement. . . . A patent for a design, like a patent for an improvement in machinery, must be for the means of producing a certain result or appearance, and not for the result or appearance itself. The plaintiffs' patent is for their described means of producing a certain appearance in the completed handle. Even if the same appearance is produced by another design, if the means used in such other design to produce the appearance are substantially different from the means used in the prior patented design to produce such appearance, the later design is not an infringement of the patented one. It is quite clear, on a consideration of the points of difference before enumerated between the plaintiffs' design and the designs of White, that each of the latter is substantially different from the former in the means it employs to produce the appearance. Such is the undoubted weight of the evidence, and such is the judgment of the court."

¹ *Gorham Co. v. White*, 14 Wall. 511.

pearance, and that not an abstract, impression, or picture, but an aspect given to those objects mentioned in the acts." It is the appearance itself which makes the article salable, and therefore valuable to the inventor; and the object of the law is to secure for a limited time to the ingenious producer of these appearances the advantages flowing from them. "Manifestly the mode in which these appearances are produced has very little, if any thing, to do with giving increased salableness to the article. It is the appearance itself which attracts attention, and calls out favor or dislike. It is the appearance itself, therefore, no matter by what agency caused, that constitutes mainly, if not entirely, the contribution to the public which the law deems worthy of recompense. The appearance may be the result of peculiarity of configuration, or of ornament alone, or of both conjointly; but, in whatever way produced, it is the new thing, or product, which the patent law regards. . . . We do not say that, in determining whether two designs are substantially the same, differences in the lines, the configuration, or the modes by which the aspects they exhibit, are not to be considered; but we think the controlling consideration is the resultant effect."

In laying down rules governing the test of infringement, Mr. Justice Strong, who delivered the opinion of the court, said: "We are now prepared to inquire what is the true test of identity of design. Plainly, it must be sameness of appearance; and mere difference of lines in the drawing or sketch, a greater or smaller number of lines, or slight variances in configuration, if sufficient to change the effect upon the eye, will not destroy the substantial identity. An engraving which has many lines may present to the eye the same picture, and to the mind the same idea or conception, as another with much fewer lines. The design, however, would be the same. So a pattern for a carpet or a print may be made up of wreaths of flowers arranged in a particular manner. Another carpet may have similar wreaths, arranged in a like manner, so that none but very acute observers could detect a difference. Yet in the wreaths upon one there may be fewer flowers, and the wreaths may be placed at wider distances from each other. Surely in such a case the designs are alike. The same conception was in the mind of the designer, and to that conception he gave expression.

"If, then, identity of appearance, or (as expressed in *McCrea v.*

Holdsworth) sameness of effect upon the eye, is the main test of substantial identity of design, the only remaining question upon this part of the case is whether it is essential that the appearance should be the same to the eye of an expert. The court below was of opinion that the test of a patent for a design is not the eye of an ordinary observer. The learned judge thought there could be no infringement unless there was "substantial identity," in view of the observation of a person versed in designs in the particular trade in question — of a person engaged in the manufacture or sale of articles containing such designs — of a person accustomed to compare such designs one with another, and who sees and examines the articles containing them, side by side. There must, he thought, be a comparison of the features which make up the two designs. With this we cannot concur. Such a test would destroy all the protection which the act of Congress intended to give. There never could be piracy of a patented design, for human ingenuity has never yet produced a design, in all its details, exactly like another, so like that an expert could not distinguish them. No counterfeit bank-note is so identical in appearance with the true, that an experienced artist cannot discern a difference. It is said an engraver distinguishes impressions made by the same plate. Experts, therefore, are not the persons to be deceived. Much less than that which would be substantial identity in their eyes would be undistinguishable in the eyes of men generally, of observers of ordinary acuteness, bringing to the examination of the article upon which the design has been placed that degree of observation which men of ordinary intelligence give. It is persons of the latter class who are the principal purchasers of the articles to which designs have given novel appearances, and if they are misled, and induced to purchase what is not the article they supposed it to be, if, for example, they are led to purchase forks or spoons, deceived by an apparent resemblance into the belief that they bear the "cottage" design, and therefore are the production of the holders of the Gorham, Thurber, and Dexter patent, when in fact they are not, the patentees are injured, and that advantage of a market which the patent was granted to secure is destroyed. The purpose of the law must be effected if possible; but, plainly, it cannot be if, while the general appearance of the design is preserved, minor differences of detail in the manner in

which the appearance is produced, observable by experts, but not noticed by ordinary observers, by those who buy and use, are sufficient to relieve an imitating design from condemnation as an infringement.

“ We hold, therefore, that if, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other.”

Applying the above rules to the facts of the case at bar, the court held that there was an infringement, and reversed the decree of the court below. Justices Miller, Field, and Bradley dissented; but whether their dissent had reference to the principles of law enunciated by the court, or simply to the question whether there was an infringement in the case before the court, does not appear from the report.

§ 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.

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.”

Thus, in *Aiken v. Bemis*,¹ 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 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*,² 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

¹ 3 Woodb. & Minot, 348.

² *Wyeth v. Stone*, 1 Story's R. 273.

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*,¹ 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 employed in almost all machines. The level, 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 griping of the nail; (3) The heading of the nail. If one person had invented the cutting, a second the griping, and a third the heading, it is clear that neither could entitle himself to a patent for the whole

¹ *Odiorne v. Winkley*, 2 Gallis. 51.

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, 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."²

In *McCormick v. Seymour*,³ 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

¹ *Boville v. Moore*, Dav. Pat. Cas. 361, 402.

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

³ *McCormick v. Seymour*, 2 Blatchf. 240.

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."

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

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 Wels., Hurls. & Gord. 427.

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 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. The 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 interlocking,—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.”

§ 308 *a*. Where the patent was for an “improvement in springs for hoop-skirts” it was held to be an infringement to sell “an article of dress called a bustle, containing hoop-skirt wire made in substantially the same manner described in the patent, “the bustle referred to being,” in the language of the court, “substantially a hoop-skirt of a diminished size.”¹

§ 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

¹ Young v. Lippman, 9 Blatchf. 277.

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 C. 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 Blatchf. 190. “Neither of these operations can be found, either in form or in substance, in the Crosby machine (defendant’s). 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 any thing. From the lower 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

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

§ 309 a. The question of what constitutes an infringement in case of a combination has been discussed in several recent American cases. The law on this subject was thus stated by the Supreme Court of the United States in the recent case of *Seymour v. Osborne*:² “Actual inventors of a combination of two or more ingredients in a machine, secured by letters-patent in due form, are entitled, even though the ingredients are old, if the

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.

² 11 Wall. 516. The opinion of the court was delivered by Mr. Justice Clifford.

combination produces a new and useful result, to treat every one as an infringer who makes and uses or vends the machine to others to be used without their authority or license.

They cannot suppress subsequent improvements which are substantially different, whether the new improvements consist in a new combination of the same ingredients, or of the substitution of some newly discovered ingredient, or of some old one, performing some new function not known at the date of the letters-patent, as a proper substitute for the ingredient withdrawn from the combination constituting their invention. Mere formal alterations in a combination in letters-patent, however, are no defence to the charge of infringement, and the withdrawal of one ingredient from the same, and the substitution of another which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination if the ingredient substituted performs substantially the same function as the one withdrawn.

Patentees, therefore, are entitled in all cases to invoke to some extent the doctrine of equivalents, but they are never entitled to do so in any case to suppress all other substantial improvements; and the rule which disallows such pretensions, if properly understood and limited, is as applicable to the inventor of a device, or even of an entire machine, as to the inventor of a mere combination, except that the inventor of the latter cannot treat any one as an infringer whose machine does not contain all of the material ingredients of the prior combination, as in that state of the case the subsequent invention is regarded as substantially different from the former one, unless the latter machine employs as a substitute for the ingredient left out to perform the same function some other ingredient which was well known as a proper substitute for the same when the former invention was patented.

Bonâ fide inventors of a combination are as much entitled to suppress every other combination of the same ingredients to produce the same result, not substantially different from what they have invented and caused to be patented, as any other class of inventors. All alike have the right to suppress every colorable invasion of that which is secured to them by their letters-patent, and it is a mistake to suppose that this court ever intended to lay down any different rule of decision."

A patent for a combination of several elements is not infringed

by a combination which dispenses with one of the elements, and substitutes therefor another substantially different in construction and operation, but serving the same purpose.¹

§ 309 b. It has been held to be an infringement to manufacture and sell without authority some of the parts of a patented combination, provided such parts are useless without the remaining parts, and they are sold with the understanding and intention that such remaining parts shall be supplied by another, and the whole be combined for use. This question arose in the case of *Wallace v. Holmes*,² wherein the complainant's patent was for an improvement in lamps, and embraced the combination of the chimney and the burner. It appeared that the defendant had manufactured and sold the burner, which was useless without the chimney, it being necessary for purchasers, before using the burner, to obtain the chimney and use both in combination. According to the construction given by the court to the specification and claim, the complainant's patent did not claim the burner as new, but the combination of the burner with the chimney. Upon these facts the court held that there had been an infringement of the plaintiff's patent by the defendant. The grounds upon which this decision was based are thus given by Mr. Justice Woodruff, who delivered the judgment of the court: "The rule of law invoked by the defendants is this, — that, where a patent is for a combination merely, it is not infringed by one who uses one or more of the parts, but not all, to produce the same results, either by themselves or by the aid of other devices. This rule is well settled, and is not questioned on this trial. The rule is fully stated by Chief Justice Taney, in *Prouty v. Ruggles* (16 Peters, 336, 341), and in other cases cited by the counsel. (*Byam v. Farr*, 1 Curtis's C. C. R. 260, 265; *Foster v. Moore*, *ibid.* 279, 292; *Vance v. Campbell*, 1 Black, 427; *Eames v. Godfrey*, 1 Wallace, 78, 79.) But I am not satisfied that this rule will protect these defendants. If, in actual concert with a third party, with a view to the actual production of the patented improvement

¹ *Crompton v. Belknap Mills*, 3 Fisher's Pat. Cas. 536; *Eames v. Godfrey*, 1 Wall. 79; *Vance v. Campbell*, 1 Black, 427. See also *Waterbury Brass Co. v. Miller*, 9 Blatchf. 77; *Nicholson Pavement Co. v. Hatch*, 3 Fisher's Pat. Cas. 432; *Sayles v. Chicago and Northwestern R.R. Co.*, 4 Fisher's Pat. Cas. 584; *Densmore v. Schofield*, *ibid.* 148; *Carter v. Baker*, *ibid.* 404.

² 9 Blatchf. 65.

in lamps, and the sale and use thereof, they consented to manufacture the burner, and such other party to make the chimney, and, in such concert, they actually make and sell the burner, and he the chimney, each utterly useless without the other, and each intended to be used, and actually sold to be used, with the other, it cannot be doubtful that they must be deemed to be joint infringers of the complainant's patent. It cannot be that, where a useful machine is patented as a combination of parts, two or more can engage in its construction and sale, and protect themselves by showing that, though united in an effort to produce the same machine, and sell it, and bring it into extensive use, each makes and sells one part only, which is useless without the others, and still another person, in precise conformity with the purpose in view, puts them together for use. If it were so, such patents would, indeed, be of little value. In such case, all are tortfeasors, engaged in a common purpose to infringe the patent, and actually, by their concerted action, producing that result. In a suit brought against such party or parties, a question might be raised, whether all the actors in the wrong should be made parties defendant; but I apprehend that, even at law and certainly when non-joinder was not pleaded, the want of all the parties would be no defence. Each is liable for all the damages.

“Here the actual concert with others is a certain inference from the nature of the case, and the distinct efforts of the defendants to bring the burner in question into use, which can only be done by adding the chimney. The defendants have not, perhaps, made an actual prearrangement with any particular person to supply the chimney to be added to the burner; but every sale they make is a proposal to the purchaser to do this, and his purchase is a consent with the defendants that he will do it, or cause it to be done. The defendants are, therefore, active parties to the whole infringement, consenting and acting to that end, manufacturing and selling for that purpose. If the want of joinder of other parties could avail them for any purpose (which is not to be conceded), they must set it up as a defence, and point out the parties who are acting in express or implied concert with them. Nor is it any excuse that parties desiring to use the burner have all the glass manufacturers in the world from whom to procure the chimneys. The question may be novel, but, in my judgment, upon these proofs, the defendants have no protection in the rule upon

which alone they rely as a defence against the charge of infringement.”

§ 309 c. Where the patent was for a combination of three distinct devices forming an improved water-wheel, none of which was claimed as new, it was held that the use of two of the devices without the other was not an infringement. The omission of immaterial parts or the substitution of equivalents will not constitute a valid defence. The question is whether the machines are substantially the same. “But here,” says Mr. Justice Woodruff,¹ “the patentee claims to combine a wheel and a spiral conductor, neither of which he claims to have invented, with a tube (F) to carry off the water from the surface of the wheel. Now, if the defendant had substituted an equivalent device for the tube (F), he might be an infringer, but he was not, by this patent, prevented from using the other two without any such device. His using them in a location, in reference to the flume, which rendered the tube unnecessary and useless, was not substituting an equivalent device, but was only using them without any device of any kind for the purpose indicated. The case falls, therefore, within the rule stated, namely, that when a combination of known elements or devices is patented, and the combination only, the use of any of the devices less than all is no infringement. This rule is not to be construed so strictly as to conflict with the other rule above stated, and to permit the substitution of equivalent devices where the combination is substantially the same. But here the tube (F) is a distinct member of the combination for a specific useful purpose; and it cannot be rejected in determining what is, in law and fact, the subject of the patent. If the wheel had been claimed, or the combination of the wheel and the spiral conductor, the defendant could not have protected himself by dispensing with the tube (F), although the plaintiff had also patented the three in combination; but, as the case stands, I see no alternative but to hold the ruling on the trial correct.”

§ 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

¹ Rich v. Close, 8 Blatchf. 41. See also Crompton v. Belknap Mills, 3 Fisher's Pat. Cas. 536.

prevent the patentee from recovering for an infringement.¹ It is in relation to this question of substantial identity, that the doctrine

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 frustum 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 substance,—

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 may be mechanical equivalents

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

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,

- 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, 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'.

The term mechanical equivalent, or mechanical substitute, was thus defined by Mr. Justice Sawyer, in *Carter v. Baker*, 4 Fisher's Pat. Cas. 404: "When in mechanics one device does a particular thing, or accomplishes a particular result, every other device *known and used* in mechanics, which skilful and experienced workmen know will produce the same result, or do the same particular thing, is a known mechanical substitute for the first device mentioned for doing the same thing, or accomplishing the same result, although the first device may never have been detached from its work, and the second one put in its place. It is sufficient to constitute known mechanical substitutes that when a skilful mechanic sees one device doing a particular thing, that he knows the other devices, whose uses he is acquainted with, will do the same thing."

or effect as that accomplished by the patentee ; or whether there is a real change of structure and purpose.¹

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. Seaward*, 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 particular 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 C. 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

Thus, the substitution by defendants of a cylinder having a domed or spherical top, for the cone or the cone with the conoidal open in the plaintiff's apparatus, — both the defendant's and the plaintiff's apparatus being used for the same purpose and in

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.

“ 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.

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. Brett*,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 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 pro-

¹ *In re Newall and Elliot*, 4 C. B. n. s. 269.

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

cess 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 nailing the india-rubber to the cylinder, giving an elasticity to the teeth on 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 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

§ 312 a. The discovery by Charles Goodyear of the process of preparing india-rubber, and Nelson Goodyear's improvement, by which hard rubber or vulcanite is produced, has given rise to much litigation, one phase of which may be here noticed.

The process of Nelson Goodyear consisted in mixing the rubber as produced by the process of Charles Goodyear with sulphur, in the proportion of about four ounces to a pound of sulphur to a pound of rubber, and subjecting this mixture to not less than from 260° to 275° Fahrenheit. This process produced, under the prescribed conditions of time and place, the compound or substance known as vulcanite, which has the hard and tough qualities found in ivory, bone, tortoise-shell, and horn, and the spring-like property under flexure belonging to whalebone. These qualities gave to vulcanite great value as a material for use in the mechanic arts, where it is applied to a great variety of uses.

Chief among the preparations decided to infringe the rights of the Goodyears was the hard rubber or compound made under the patent granted to Edward L. Simpson, October 16, 1866, and intended primarily for dental purposes. In his specification, Simpson says: "The rubber now used for dental purposes has incorporated in it large proportions of free sulphur, for the purpose of vulcanizing the rubber after it is formed. . . . The odor and taste occasioned by the presence of this sulphur is extremely obnoxious to many persons, and occasions the principal, if not the only, objection to the use of rubber for dental purposes. To overcome this objection, and produce vulcanized rubber for dental purposes, without the actual or apparent presence of sulphur, is the object of my invention, and consists in preparing the

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."

rubber for vulcanizing by the introduction of a peculiar vulcanizing compound.”

In describing the mode by which this object may be effected, the patentee says: “I first boil linseed or other vegetable oil to the consistency of honey (this I do to facilitate the preparation); thoroughly mix two ounces of benzoin gum with one pound of pulverized sulphur; then to each quart of the boiled oil add one pound of the prepared sulphur, carefully subjecting this mixture to a moderate heat, sufficient only to cause the two substances to react upon each other, until they pass from a semi-fluid to a semi-hard state, having a honey-comb or spongy appearance.” He adds that benzoin gum “by its vaporizing qualities more perfectly expels the fumes of the sulphur, as well as the odor from the oil, and renders the compound nearly, if not perfectly, odorless, and when combined with india-rubber or similar gum, and subjected to a regulated heat, will cause the same to undergo the change known as vulcanization.” To make hard rubber or vulcanite for dental purposes, from ten to fourteen ounces of this vulcanizing compound is mixed with one pound of rubber by being ground between warm rollers. This mixture of rubber and vulcanizing compound is then subjected to a heat of 320° Fahrenheit for about four hours; or, if the heat is above 320°, for a less time. The result is a vulcanite “as tasteless and odorless as a metal plate.”

In the several cases wherein the Simpson patent was in controversy, it was held that the process of vulcanizing there described was substantially the same as that described in the Nelson Goodyear patent, and that the product was the same, excepting that it was tasteless and odorless; and that while these qualities may have rendered the Simpson vulcanite an improvement for dental purposes over that of Goodyear, Simpson was not entitled to use without authority the process described in the Goodyear patents, or produce the product in substantially the same way, and therefore his patent was an infringement of the Goodyear patents.¹

In discussing the question of infringement in the case of *Goodyear v. Rust*,¹ Mr. Justice Shipman said: “We have, then, Good-

¹ *Goodyear v. Rust*, 6 Blatchf. 229; *Goodyear v. Evans*, *ibid.* 121; *Goodyear v. Berry*, 3 Fisher's Pat. Cas. 439. See also *Goodyear v. Mullee*, 5 Blatchf. 429; *Goodyear v. Wait*, 5 Blatchf. 468.

year's invention, which consists in combining not much less than four ounces of sulphur with one pound of rubber, and submitting the same to not much less than 260° to 275° of heat, Fahrenheit's scale. We have Simpson's process, which consists in combining not much less than four ounces of sulphur with one pound of rubber, and subjecting the same to a heat of 320° Fahrenheit's scale. The distinction which is sought to be made between these two compositions, or processes, is founded upon the claim that, in Simpson's, one-half of the sulphur is first chemically combined with oil, forming a new substance termed vulcanized oil, and, while there, though acting in the same mass with the remaining half of the sulphur, as an auxiliary vulcanizing agent, acts in a free way from the free sulphur itself. In other words, half the quantity of sulphur necessary to vulcanize Goodyear's process has disappeared, and exists no longer, except as it is represented in a new chemical substance called vulcanized oil. The other half remains. But neither the half that remains nor any quantity of the new agent can alone vulcanize. Yet the two, acting together, at once perform this important office and produce the same result as Goodyear's combination."¹

¹ Continuing the discussion, Mr. Justice Shipman said: "I have said that it appears from the evidence that the *chemically combined* elements of the compound of Simpson will not alone, when mixed with rubber, and heated, produce vulcanite. I infer this from the language already cited from Professor Seely's affidavit, where he says: 'A quantity of vulcanized oil, containing four or even sixteen ounces of sulphur may be mixed and heated with one pound of rubber, and not an atom of Goodyear's hard rubber can be produced. Simpson's compound is composed of vulcanized oil and free sulphur.' I have not failed to notice that the language is, that the vulcanized oil, in combination with the rubber, will not produce 'an atom of *Goodyear's* hard rubber.' But as the whole scope and direction of the defence are aimed at establishing a distinction between the *processes*, and not between the *products*, I can come to no other conclusion than that the compound alone, if destitute of free sulphur, would not, when mixed with rubber, perform the office of vulcanization. It is true that the compound, when made according to the patent of Simpson, always contains one-half of the sulphur in a free state, but it is agreed, on all hands, that this amount of free sulphur alone will not vulcanize. So the evidence, in whatever light we view it, proves that that portion of the compound which contains the elements in chemical combination is powerless, without the aid of the uncombined free sulphur, which is scattered through the pores of the combined mass.

"Now, it may be asked, how do these two agents, namely, vulcanized oil and free sulphur, perform by their united forces the work of vulcanization?"

§ 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

No part of this work is assigned, by the evidence, to the benzoïn. It cannot be done by the chemically combined oil and sulphur alone. It cannot be done by the free sulphur alone. The latter, to the extent of its effective power, for all that appears in this case, works in the same way that it does in Goodyear's process. The effect of the former (oil and sulphur chemically combined), Professor Seely says, is not chemical, but 'must be done wholly to physical and molecular causes.' But, whether the auxiliary vulcanizing force, whatever it is, exerted by the chemically combined oil and sulphur, is supplied by the latter or not, does not appear by the proof. From what has long been known, however, of the vulcanizing power of sulphur, when mixed with rubber, and heated, that agent, though combined with another substance, would naturally be looked to as the seat of this force. It may be true that, as Professor Seely says, the effect of vulcanized oil, in hardening rubber, is due not to chemical, but 'to physical and molecular causes.' Of the nature or significance of this distinction, in the scientific sense, I do not presume to speak. But I do not see how this fact avoids Goodyear's patent. I do not find, in his specification, any evidence that he rested his invention upon any such nice scientific distinction, or that he limited his claim to sulphur, when working through chemical, as distinguished from physical or molecular laws. If the validity of his patent rests upon such a scientific problem as this, I think its solution should, in the present case, be left to final hearing. The suggestion of such a problem, in *ex parte* affidavits, at a very late stage of a series of protracted litigations, in which every other defence has thus far failed, is not a valid answer to this motion.

"There can be no question that Simpson uses a degree of heat within the scope of Goodyear's patent."

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

§ 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, 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

fringement. 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.

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 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.

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

§ 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 mandril, 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, *ibid.* 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 Juge 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 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,

§ 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 made the subject of a patent, although both blast and exhaust had been previously used separately, and also that it

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*.

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

§ 319 a. An important case illustrating the point under consideration was that of *Mowry v. Whitney*,² decided by the Supreme Court of the United States in December, 1871. The invention consisted of an improvement in the process of making cast-iron wheels for railroad cars. In a wheel for this purpose it is necessary to have the "tread," or the surface which runs over the rail, very hard, to prevent rapid wearing, while the hub against which there is no friction but which is subjected to great strain, need not be so hard, but must be very tough. It was found that the former quality was given to the periphery of the wheel by rapidly cooling the melted mass of iron after it had been run into the mould; while the latter quality could be imparted to the hub by the process of slow cooling. But there were great difficulties in the way of accomplishing these results, which, however, were successfully overcome by Whitney, who obtained letters-patent dated April 25, 1848, for "a new and useful improvement in the process of manufacturing cast-iron railroad wheels." In his specification he said: —

"My improvement consists in taking railroad wheels from the moulds in which they are ordinarily cast, as soon after being cast as they are sufficiently cool to be strong enough to move with safety, or before they have become so much cooled as to produce any considerable inherent strain between the thin and thick parts, and putting them in this state into a furnace or chamber that has been previously heated to a temperature as high as that of the wheels when taken from the moulds. As soon as they are deposited in this furnace or chamber, the opening through which they have been passed is closed, and the temperature of the furnace or chamber, and its contents, gradually raised to a point *a*

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

² 14 Wal. 620.

little below that at which fusion commences, when all the avenues to and from the interior are closed, and the whole mass left to cool no faster than the heat it contains permeates through, and radiates from the exterior surface of the materials of which it is composed. By this process all parts of each wheel are raised to the same temperature, and the heat they contain can only pass off through the medium of the confined atmosphere that intervenes between them and the walls of the furnace or chamber; consequently, the thinnest and thickest parts cool and shrink simultaneously together, which relieves them from all inherent strain whatever when cold.”

Whitney did not claim to be the inventor of annealing castings made of iron or other metal, when done in the ordinary way; nor to have invented any particular form or kind of furnace in which to perform the process. But he claimed as his invention “the process of prolonging the time of cooling, in connection with annealing railroad wheels in the manner above described.”

Mowry claimed to have made an improvement in the same process for which he obtained letters-patent, and which was thus described in his specification: “My invention consists in the use of charcoal or other equivalent substance, interlaid with the wheels in the annealing pits, in connection with the regulated admission of air, for the purpose of heating the wheels up to a proper temperature, prolonging the heat, and permitting them to cool in the course of a given time, gradually, as will be more particularly explained below.

“The operation of my invention is as follows: A layer of charcoal having been laid on the perforated bottom of the annealing pit, the wheels, as they are turned out of the moulds red-hot, are placed in the pits, with a layer of charcoal between each wheel, a layer of charcoal being laid on the uppermost wheel, and on this a perforated metal plate is laid.

“The charcoal, becoming now ignited by the hot wheels, the cover of pit is then laid on, and the damper opened so as to admit just sufficient air to effect the combustion of the contained charcoal, in the space of seventy-two hours, less or more, as may be found necessary for the annealing operation. The draft of air in the apparatus shown on drawings is from above downwards, but it may, without affecting my invention, be from below upwards, by conveying the air from the horizontal flue up through the pits,

and through the aperture in cover, and from thence through flues, into the main shaft or chimney (C); the result will be the same in both cases, and the adoption of one or the other plan will be dictated by convenience.”

A bill was filed by Whitney, charging Mowry with infringement, which was denied by the latter. In holding Mowry's process to be an infringement of the patent of Whitney, Mr. Justice Strong, who delivered the judgment of the Supreme Court of the United States, said: “What the process of the defendant was is clearly set out in a patent which he obtained on the 7th of May, 1861. It consists in placing in a pit the wheels as they are turned out of the moulds red-hot, with a layer of charcoal beneath the lowest wheel, and a layer between each wheel as well as above the uppermost, and covering the pit with a perforated metal plate. The charcoal is ignited by the hot wheels, and just sufficient air is admitted to effect combustion of the coal. Thus the wheels are reheated and permitted gradually to cool. There are some minor details which it is unnecessary to mention. So far as relates to reheating the wheels and retarding the cooling by the application of additional heat, it is obvious that the process is substantially the same. The purpose of the charcoal interlaid with the wheels is avowed to be to heat them in the pit to a proper temperature, prolonging the heat, and permitting them to cool gradually in a given time, said to be seventy-two hours, more or less, as may be found necessary for the annealing operation. The rapidity of combustion of the charcoal is regulated by a damper in the flue; and this process is followed, as the specification explains, that the different parts of the wheels may adjust themselves to each other, and accommodate the unequal contraction which results from the process of chilling. It is under this patent, and in accordance with its directions, that the defendant has prepared his car-wheels for market. As the object of the patentees is the same, — relief from the strain incident to unequal contraction, — the only inquiry is whether the object is attained by substantially the same means. The idea of Whitney was undoubtedly arresting contraction before any remediless strain had commenced, and regulating the progress of cooling so that all parts of the wheel may maintain an equal temperature at all stages of cooling. Manifestly the process of the defendant embodied the same idea, and carried it out by means identical in

principle. It reheats the wheels when removed from the moulds to the chamber or pit. It prolongs the cooling in connection with the reheating, and it subjects the rapidity of cooling to control of the operator. The form or structure of the furnace chamber or pit is not claimed by either patentee.

“It hardly seems necessary to resort to the opinions of experts in order to reach the conclusion that the process of the defendant is only formally different from that of Whitney, while the essential element of the two processes is the same. But the testimony of the experts examined, taken as a whole, clearly supports such a conclusion.”

§ 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.¹

§ 321. And this brings us to the consideration of another test of the fact of infringement, viz., that which shows on the part of the defendant a substantive invention sufficient to support a patent, as for a new thing.

¹ In *Barber v. Grace*, 1 Wells., Hurlst. & Gord. 310, 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.

§ 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 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 dura-

¹ Sir N. C. Tindal, Chief Justice, 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."

bility 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 any thing 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 tur-

pentine 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, élasticity 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, and so had lime. But it is said, it is a patent

§ 330. The superior utility of one thing over another will sometimes furnish an important test upon this question of identity. It

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 incon-

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

sistency. 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 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 conducting 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.

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.

§ 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

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 mandril, it was a patentable improvement to weld them by grooved rollers without a mandril; 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

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

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.

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. 243.

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. 91.

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

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 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

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

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. 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 rendering 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.

§ 333. But, on the other hand, where the patent is for several distinct improvements or things, and does not stand upon the com-

“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 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

bination 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 infringed 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.²

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.

² 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.

§ 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

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*.

¹ Act of 1837, § 9.

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.¹ 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.² 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.³ But these cases are entirely distinguished from those where the purpose wholly fails,

¹ *Lewis v. Marling*, 10 B. & C. 22; 4 Car. & P. 57; Webs. Pat. Cas. 493.

² *Morgan v. Seaward*, Webs. Pat. Cas. 187.

³ *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 finding 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."

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 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.²

§ 336 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 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

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.

² Act of July 4, 1836, § 15.

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

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 more 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 contemplation 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 gave the following opinion: “The invention claimed in the spe-

¹ *Byam v. Eddy*, 2 Blatchf. 521.

cification 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 *à 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.,

¹ 2 Webs. Pat. Cas. 172, 178, 179.

Parke, Alderson, and Platt, BB., it was held that the plaintiff's 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 pulley 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 alkalies, 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 alkalies beyond those specifically named. The true construction, in point of law, of the specification, is, in my judgment, that he does claim acids and alkalies beyond those that he mentions. You will have to say whether, in your judgment, that which the defendant has done has been within the scope of the plaintiff's invention, or whether it is in imitation of it."

Munz's patent for improved metal plates for sheathing the bottoms of ships was called in question chiefly on the ground of want of novelty and want of sufficient directions in the specification as to the proportions and qualities of the ingredients. However, in the trial at law before the Court of Common Pleas, the subject of infringement came up for discussion among the other issues. Tindal, C. J., in his charge to the jury,¹ remarked upon that plea: "Further, the plaintiff says (and that evidence is before you) that in the month of April, when the mode of making it and the materials were somewhat altered, i. e. when, according to the testimony of defendant's witnesses, they used nothing but cake copper, and not the purest copper obtained from the regule of the copper, as the witnesses have stated, yet still it would be for you to say whether, if the very same effect and result is produced, it could have been produced in any other way than by some mode of altering the properties of the common cake copper; because there has been evidence brought before you that the cake copper would not produce the result and be attended with those properties which the plaintiff has taken out his patent for; and therefore, upon that second branch, you will have to ask yourselves whether, seeing that which has been used, and the analysis of it, and the result of such analysis, and the mode in which the witness on the part of the defendants explained that it was carried on, stating certainly that nothing was used but the cake copper for that purpose, whether, in the mode of using that cake copper, which before did not produce the result of the plaintiff's discovery, something or other must not have been managed or contrived, on the part of the defendants, to give it that purity, which, if you are satisfied upon the evidence it did not possess, it must have had through their instrumentality. If it were so, that would be a contrivance and an evasion of the

¹ 2 Webs. Pat. Cas. 101.

direct letter and description in the patent. Although the patent describes the copper must be of the purest quality (and that seems to me to be the sense of the specification), yet, if persons could take an inferior kind of copper, and by dressing it up, and by some particular way of melting and refining it, give it exactly the same effect as the best kind of copper would have done, it must be for you to say whether, in that case, they intended to imitate (as one branch of the declaration states) and to evade the patent which the other party had granted to him."

But the most interesting case, or rather series of cases,—both as regards the magnitude of the pecuniary interests at stake, and the elaborate discussions and decisions which it called forth,—is that arising under the celebrated Heath patent for making cast-steel.

In 1839, a patent was granted to Heath "for certain improvements in the manufacture of iron and steel." That part of the specification which immediately concerns us is contained in the following words: "Lastly, I propose to make an improved quality of cast-steel, by introducing into a crucible bars of common blistered steel broken as usual into fragments, or mixtures of cast and malleable iron, or malleable iron and carbonaceous matters, *along with from one to three per cent of their weight of carburet of manganese*, and exposing the crucible to the proper heat for melting the materials, which are when fluid to be poured into an ingot mould in the usual manner; but I do not claim the use of any such mixture of cast and malleable iron, or malleable iron and carbonaceous matter, as any part of my invention, but *only the use of carburet of manganese in any process for the conversion of iron into cast-steel.*"¹

In 1843, the suit of Heath v. Unwin was brought in the Exchequer before Lord Abinger, C. B.² Heath, after enrolling his patent, discovered that the same effect might be produced by using coal-tar and black oxide of manganese, the ingredients of the carburet of manganese, as by the use of the carburet itself. This he communicated to the defendant Unwin, who was at that time in his employ as agent, and furnished him with parcels of these materials to sell instead of the compound, at the same time reducing the royalty. Unwin shortly afterwards ceased to be

¹ 2 Webs. Pat. Cas. 216.

² Heath v. Unwin, 2 Webs. Pat. Cas. 216.

patentee's agent, and commenced the manufacture of cast-steel by the use of coal-tar and manganese, without paying any license fee. For this infringement the action was brought. Lord Abinger nonsuited the plaintiff, ruling that the use of the materials, being out of all proportion cheaper than that of the carburet, was a new discovery, and that there was no evidence of the formation of carburet of manganese during defendant's process, and therefore no evidence of an infringement of plaintiff's patent. The Court of Exchequer refused to set aside the nonsuit.

In 1844, another action was brought in the Exchequer before Baron Parke.¹ The learned Baron, in his charge to the jury, said: "The next point for your consideration is, has the infringement taken place? Which depends on the fact, whether the use of the elements by the defendant is, in fact, a use of the compound, — whether the elements really form a carburet before the union with the steel takes place in the crucible. . . . If you are not satisfied of this, you will find for the defendant; if you find that there is carburet formed, I shall reserve the point. You will also say whether the defendant ever uses one per cent of this substance in his manufacture." The jury found that the defendant had infringed; and that though he might not have used *one per cent* of carburet, the words in the specification *from one to three per cent*, give a latitude as to the quantity to be used. Leave was then given the defendant to move to enter a verdict on the plea of not guilty. A motion before the Court of Exchequer for a rule to show cause why such verdict should not be entered for defendant² was granted and subsequently argued. The rule was made absolute, Baron Parke rendering the judgment as follows: "In order to decide this (the infringement), we must first determine for what invention the patent, as explained by the specification, is taken out. It is not for the use of oxide of manganese in the melting of cast-steel, for carburet of manganese is expressly mentioned and distinguished from oxide of manganese; nor could the patent for the use of the oxide have been supported, as that substance had been used long before in steel-making; nor is it for the use of oxide of manganese in any mode of combination with carbon generally. If it had it would have been liable to a similar objection, as oxide of manganese had been used in cruci-

¹ Heath v. Unwin, 2 Webs. Pat. Cas. 218.

² 2 Webs. Pat. Cas. 221; argued, p. 223.

bles containing in their construction a quantity of carbonaceous matter, with a portion of which it would necessarily combine during the process; nor is it for the use of the oxide with such a quantity of carbon as would deoxidize it and leave the manganese alone to operate upon the steel, so that neither the quantity of the steel be altered nor the crucible destroyed by the oxide of manganese abstracting, as it otherwise would do, some quantity of carbon from them. The patent is obtained for the use of one particular combination of carbon and manganese, the metallic substance called carburet of manganese, and for the use of it in that state. The specification is expressly for the employment of carburet of manganese, and the mode of using it is by putting a certain quantity by weight of that substance in an unmelted state into the crucible. This being, in our opinion, the true construction of the specification, it is clear that the defendant has not directly infringed the plaintiff's patent, for he has never used that substance in the mode described in the specification. Then comes the question whether he has indirectly infringed the patent by imitating and using the same patent substantially, but making a colorable variation. Now there is no doubt, we think, that if a defendant substitutes for a part of a plaintiff's invention some well-known equivalent, whether chemical or mechanical, he would probably be considered as only making a colorable variation. But here he has not done so. It is quite clear, upon the evidence, that the defendant never meant to use the carburet of manganese at all; he certainly never knew, and there is no reason to suppose that, prior to this investigation, any one else knew, that the substance would be formed in a state of fusion; and it is mere matter of speculative opinion (though after the verdict we must assume it to be a correct opinion among men of science) that it would, but it was clearly not ascertained, and still less was it a known fact. There was, therefore, no intention to imitate the patented invention, and we do not think the defendant can be considered guilty of any direct imitation if he did not intend to imitate at all."

Mr. Webster, in his note (p. 227) to this passage, says, "The doctrine of intention as here expressed has been dissented from by the learned judges who concurred in the judgment, as well as by all other judges whose attention has been called to it. Evidence of intention to imitate may be material for the considera-

tion of the jury ; but if the invention be in point of fact adopted or imitated, whether in ignorance or intention, the infringement is just the same.”¹

On the strength of the verdict given by the jury in the case tried before Baron Parke alone (p. 220, Webster), the patentee commenced proceedings in chancery for an injunction and account, but in consequence of the overruling of the verdict, as above stated, these proceedings were suspended. After an interval of two years the case of *Stevens v. Keating* occurred. The Vice-Chancellor and Lord Chancellor both dissenting here from the doctrine of intention as expressed by the Court of Exchequer, Mr. Heath was advised to renew his application to the Court of Chancery. Thereupon the Vice-Chancellor ordered an action to be brought in the Common Pleas, to try the questions of infringement and validity of the patent. Cresswell, J., in giving the ruling, said: “I feel fettered by the decision of the Court of Exchequer. My ruling is simply this, that the use of the ingredients, oxide of manganese and carbonaceous matter, is not an infringement of the patent, although these ingredients form a carburet of manganese before it enters into combination with the steel.”

On appeal to the Exchequer Chamber by writ of error, this ruling was reversed and a new trial granted,² each of the judges giving an elaborate opinion. Crompton, Platt, Erle, and Wightman, *pro* ; Coleridge and Alderson, *contra*. In 1853 the patent was extended for seven years by the Privy Council, on application of Charlotte Heath, executrix of the patentee.

The matter was then brought up before the House of Lords by writ of error upon this judgment of the Exchequer Chamber. (1854.)³ The following question was proposed to the judges: “Whether, looking at the record as set forth in the joint appendix to the printed cases, there was evidence for the jury that the plaintiff in error (the former defendant Unwin) was guilty of an infringement of the patent stated in the declaration, by using oxide of manganese and carbonaceous matter in the manufacture of cast-steel, in the manner in which, according to his admission at the trial, he did use them.” In reply, Crowder, J., Crompton, J., Williams, J., Platt, B., Erle, J., Cresswell, J., and Wightman,

¹ See also *Stead v. Anderson*, 2 Webs. Pat. Cas. 156.

² 2 Webs. Pat. Cas. 236.

³ *Unwin v. Heath*, 32 E. L. & Eq. 45.

J., gave their opinion, that there *was* evidence of infringement; Maule, J., Parke, B., Alderson, B., and Pollock, C. B., that there *was not*.

The Lord Chancellor (Lord Cranworth) and Lord Brougham thereupon gave long and elaborate judgments in behalf of the plaintiff in error to establish that there was no evidence of infringement, and the House voted judgment accordingly, thereby sustaining the ruling of Cresswell, J., at the jury trial, and overruling the reversal of the Exchequer Chamber.

It would be impossible to give, within the limits of the present treatise, even a selection from the mass of adjudication which this celebrated case has elicited. For, as will appear from the foregoing synopsis of the course of litigation, nearly every leading judge in England was called upon to pronounce on the merits of the patent. The reader, however, is referred to the 32 E. L. & Eq. as containing a careful summary of the leading principles at issue.

The doctrines of *Heath v. Unwin* and *Unwin v. Heath* have been subsequently reaffirmed and applied in a very recent case.¹ Here, the plaintiff was the patentee of an invention for the purification of gas by means of precipitated oxides of iron, and also of a process by which the materials used could be revived and again adapted for the same purifying process. It was held by the Lord Chancellor (Westbury) that the right of the patentee was restricted to the use of artificial precipitated oxides of iron, and that the user by defendants of a natural product known as bog ochre in its natural state, which answered the same purpose as the plaintiff's invention, was no infringement of the patent; but that so far as the revivification of the natural product was concerned, it was an infringement.

§ 336 *b*. In the case of *Tyler v. Boston*,² it appeared that the defendants had used a burning fluid composed of naphtha seventy-two and fusel oil twenty-eight parts; and expert chemists proved that seventy-two parts *in bulk* of naphtha was the *substantial equivalent* of twenty-eight parts of kerosene. The meaning of the term "equivalent" was thus defined in the opinion of the court. "This term 'equivalent,' when speaking of machines, has a certain definite meaning; but when used with regard to

¹ *Hills v. Liverpool Gas. Co.*, 7 Law Times, n. s. 537.

² 7 Wall. 327.

the chemical action of such fluids as can be discovered only by experiment, it only means *equally good*. But while the specification of the patent suggests the substitution of naphtha for crude petroleum, it prescribes no other proportion than that of equal parts by measure.”

§ 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.”¹ 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.² These damages will be trebled by the court, according to the statute.³

§ 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,⁴ but not the profits which he might have made by reasonable diligence.⁵

To this, it seems, there should be added all the losses to which the plaintiff has been subjected by the piracy.⁶

¹ Act of July 4, 1836, § 14.

² *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 v. Wiles*, 2 Blatchf. 194.

³ *Lowell v. Lewis*, 1 Mas. 184, 185; *Gray v. James*, Peters’s C. C. R. 394.

⁴ *Lowell v. Lewis*, 1 Mas. 184; *Whittemore v. Cutter*, 1 Gall. 429.

⁵ *Dean v. Mason*, 20 How. 198.

⁶ *Earle v. Sawyer*, 4 Mas. 1. Story, J., said: “But I wish to say a few words in 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

Where there is no established patent or license-fee, general evidence of the utility and superiority of the invention may be

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. 434. Struck with similar difficulties in establishing any general rule to govern cases upon patents, some learned judges have refused to lay down any particular rule of damages, and have left the jury at large to esti-

submitted 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 infringement. 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

mate 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 Webs. 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 C. B. 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.

to ascertain the profits which the plaintiff derives from the machines 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 way of conclusion, we quote *in extenso* from the decision of the Supreme Court, in *Seymour v. McCormick*,¹ as containing the

by the defendants on the sale of the entire lock as thus improved. The Supreme Court set aside the verdict, with costs.

.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 any thing 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

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

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 '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

§ 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

§ 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.²

§ 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.³

§ 341 a. Prior to the act of 1870, two remedies were open to a patentee whose rights had been infringed, and he had his election between the two. He might proceed in equity against the infringer and recover the profits which had been made by an illegal use of the patentee's invention, in which case, if no profit had been realized, there would be no recovery. On the other hand, the injured party might sue at law for the damages he had sustained on account of the infringement, in which case he would be entitled to recover damages without regard to whether the defendant had profited by the infringement or not. The legal measure of the damages to be awarded in such a case was not what the defendant had gained, but what the plaintiff had lost.

But by the act of 1870,⁴ this rule has been changed, and both profits and damages may now be recovered in equity.⁵ Section fifty-five of that act provides: "That all actions, suits, controversies, and cases arising under the patent laws of the United States, shall be originally cognizable as well in equity as at law,

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*.

² *Bryce v. Dorr*, 3 McLean, 582.

³ *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. Bunt*, 3 Story, 742. Cf. *Blanchard's, &c. v. Warner*, 1 Blatchf. 258, reporter's note to p. 272.

⁴ Act of July 8, 1870, § 55, 16 U. S. Stat. at Large, 206. See appendix.

⁵ *Williams v. Leonard*, 9 Blatchf. 476; *Cowing v. Rumsey*, 8 Blatchf. 36.

by the circuit courts of the United States, or any district court having the powers and jurisdiction of a circuit court, or by the Supreme Court of the District of Columbia, or of any territory; and the court shall have power, upon bill in equity filed by any party aggrieved, to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable, and upon a decree being rendered in any such case for an infringement, the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the *claimant* [complainant] has sustained thereby, and the court shall assess the same or cause the same to be assessed under its direction, and the court shall have the same powers to increase the same in its discretion that are given by this act to increase the damages found by verdicts in actions upon the case; but all actions shall be brought during the term for which the letters-patent shall be granted or extended, or within six years after the expiration thereof."

It is further provided by section fifty-nine, "That damages for the infringement of any patent may be recovered by action on the case in any circuit court of the United States, or district court exercising the jurisdiction of a circuit court, or in the Supreme Court of the District of Columbia, or of any territory, in the name of the party interested, either as patentee, assignee, or grantee. And whenever in any such action a verdict shall be rendered for the plaintiff, the court may enter judgment thereon for any sum above the amount found by the verdict as the actual damages sustained, according to the circumstances of the case, not exceeding three times the amount of such verdict, together with the costs."

When the injured party proceeds for the recovery of damages, the question to be determined is not the amount of profits realized by the defendant, for this sum may be greatly inferior to the complainant's loss; but what loss has the complainant sustained by reason of the defendant's infringement. It may be necessary, however, to prove the profits made by the infringer in order to determine the extent of the plaintiff's loss.¹

The power given by the statute to increase the damages returned by the jury to a sum "not exceeding three times the

¹ *Cowing v. Rumsey*, 8 Blatchf. 36.

amount of such verdict," is vested in the discretion of the court, which will be governed by the circumstances of the case. "Cases may be readily conceived," said Mr. Justice Leavitt,¹ "in which it would be the imperative duty of a court to exercise the discretion given by the statute, by increasing the damages. It has happened, and may occur again, that a meritorious inventor of a valuable improvement, after spending years of patient thought and toil in making it practically useful, and obtaining a patent for it, has been wantonly and unjustly pirated upon, and compelled, for the establishment of his rights, to engage in long, vexatious, and expensive litigation, in which at last the sum that may be awarded by the verdict of a jury may be wholly inadequate as a compensation for the wrongs and injuries he has sustained. In such a case the instincts of justice would demand of a judge that he should exercise the discretion vested in him by law, by trebling the damages, and thus, as far as practicable, doing justice to one who, from the great utility of his invention, may be entitled to the name of a public benefactor. But clearly there is no such feature in the present case. The plaintiff has no claim or merit as an inventor, but is the mere assignee of a patented machine, the right to which he has purchased on speculation. The law under such circumstances will give him the actual damages which his evidence shows he has sustained, but will give him nothing more."

It has been held that in an accounting for profits the defendant cannot be credited with a sum of money as a salary earned by and paid to himself while engaged in the business producing the profits.²

¹ *Schwarzel v. Holenshade*, 3 Fisher's Pat. Cas. 116.

² *Williams v. Leonard*, 9 Blatchf. 476. Mr. Justice Woodruff in this case said: "As to the 'salaries' of the defendants, during the period in which they have been engaged in infringing, they have no title, as against the complainant. It would be very great injustice, if the *quantum* of gains and profits recoverable by a complainant depended on the question, how much of such gains and profits the defendants used for their own support, or the support of their families, or, as even more broadly claimed here by the defendants, how much they saw fit to appropriate to their own use. Infringers would rarely be required to pay over any thing, if they could divide the gains and profits among themselves, under the name of salary, wages, or any other designation. Men work for gains and profits, but they are gains and profits still. Men support themselves and their families out of their gains and profits, but that

§ 341 *b*. In the case of the Rubber Company *v.* Goodyear,¹ the circuit court having decreed that the Providence Company was liable “for all the profits made in violation of the rights of the complainants, under the patent aforesaid, by respondents, by the manufacture, use, or sale of any of the articles named in said bill,” the Supreme Court held this to be “in accordance with the rule in equity cases established by this court.”²

In making up the account, the master had allowed deductions from profits, for bad debts, for rents and interest paid, debiting rents and interest received; and allowance was made for the market value of the materials on hand when the infringement began, for the cost of those subsequently acquired to carry on the business, and for the usual salaries of the managing officers; also for the amounts expended in repairs of building and machinery, and in the purchase of new machinery, tools and fixtures; but no further allowance was made for “wear and tear, and depreciation.” The master, being satisfied that the extraordinary salaries which it appeared by the books had been paid were dividends of profits represented as salaries for concealment and delusion, refused to make allowance therefor. He also refused to allow the value, at the time they were used, of materials bought for the purposes of infringement; also, for profits due to elements not patented, which entered into the composition of the patented articles.

This report was approved by the Supreme Court. In holding that the master had correctly refused to allow manufacturers profits and interest on the capital stock, Mr. Justice Swayne, who delivered the judgment of the court, said: “The profits made in violation of the rights of the complainants in this class of cases, within the meaning of the law, are to be computed and ascer-

does not change their nature. If it were not so, inventors might, by reason of infringements, fail to obtain any thing, and the infringers obtain what they see fit to term adequate salaries out of their piracy. What, in good faith, the defendants pay to others, as expenses, may be taken as the cost, to them, of their manufacture. What they take to themselves are gains. They might perhaps have earned and gained as much, or perhaps more, by laboring in some other business, in no violation of the rights of their neighbor; but they cannot be permitted to gain either wages or salary by a violation of such rights.”

¹ 9 Wall. 788.

² *Livingston v. Woodworth*, 15 How. 546; *Dean v. Mason*, 20 *ibid.* 198.

tained by finding the difference between cost and yield. In estimating the cost, the elements of price of materials, interest, expenses of manufacture and sale, and other necessary expenditures, if there be any, and bad debts, are to be taken into the account, and nothing else. The calculation is to be made as a manufacturer calculates the profits of his business. 'Profit' is the gain made upon any business or investment, when both the receipts and payments are taken into the account. The rule is founded in reason and justice. It compensates one party and punishes the other. It makes the wrong-doer liable for actual, not possible, gains. The controlling consideration is that he shall not profit by his wrong. A more favorable rule would offer a premium for dishonesty, and invite to aggression."

§ 341 c. In the case of *Mowry v. Whitney*,¹ where the patent infringed was for an improved process of annealing car-wheels,² the court below, upon the report of the master, decreed against the defendant, the entire profits made by him in the manufacture and sale of the wheels, instead of those resulting from the use of Whitney's invention in a part of the manufacture; the amount of such profits being the difference between the cost of the wheels and the price for which they were sold.

This decree was reversed by the Supreme Court, which was of opinion that, in the case of an improved process in a manufacture as well as an improvement in a machine, an infringer is not liable to the extent of his entire profits in the manufacture.³ In the language of the opinion, "The question to be determined in this case is, what advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public, and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits. They are all the benefits he derived from the existence of the Whitney invention. It is found that there were other processes by which the inherent strain caused by unequal cooling could be and was prevented, counteracting which strain was the sole object of the complainant's invention, and a car-wheel could be prepared for similar service, valuable in the market and sal-

¹ 14 Wall. 620.

² See *ante*, p. 419.

³ *Jones v. Morehead*, 1 Wall. 155; *Seymour v. McCormick*, 16 How. 480. See also *Cowing v. Rumsey*, 8 Blatchf. 36; and *Troy Iron and Nail Factory v. Corning*, 3 Fisher's Pat. Cas. 497.

able at a price not less than was obtained for those which the defendant manufactured. The inquiry then is, what was the advantage in cost, in skill required, in convenience of operation, or marketability, in bringing car-wheels by Whitney's process from the condition in which they are when taken hot from the moulds to a perfected state, over bringing them to the same state by those other processes, and thus rendering them equally fit for the same service? That advantage is the measure of profits. It is quite unimportant what name was given to the products of the processes, whether one could be called annealed wheels and the other could not, except so far as affected their marketability.

“The record shows that the court overruled the alternative finding of the master, that if there is no infringement of the complainant's patent unless the wheels are subjected to the process of reheating, — that is to say, if the process of slow cooling used in connection with reheating is old, and not a part of the complainant's invention, no part of the profit derived by the defendant from the manufacture and sale of the wheels was due to the use by him of that invention. One exception taken to this finding was that not only the entire process described in the patent, but each part of such entire process, was the invention of the complainant; and the use of any material, substantial, and essential part of such entire process, the slow cooling being a substantial and material part, whereby only an improved chilled cast-iron railroad wheel could be made, and beneficial effects the same in kind if not in degree attained, that were attained by the complainant's entire process, is an infringement of complainant's patent, and the profits derived from the use of such material, substantial, and essential part should be accounted for in this case. This exception the court sustained, and thereby held that the defendant is chargeable with the profits he derived from slow cooling alone. We cannot assent to this. The patent is for an entire process, made up of several constituents. The patentee does not claim to have been the inventor of the constituents. The exclusive use of them singly is not secured to him. What is secured is their use when arranged in the process. Unless one of them is employed in making up the process, and as an element of it, the patentee cannot prevent others from using it. As well might the patentee of a machine, every part of which is an old and known device, appropriate the exclusive use of each device,

though employed singly, and not combined with the others as a machine. The defendant was not, therefore, responsible for slow cooling alone, or from the profits derived from it. He was liable to account for such profits only when he used slow cooling in connection with reheating in the manner described in Whitney's claim substantially, or when extraneous heat was employed to retard the progress of cooling. We have said that slow cooling is not claimed in the specification as the invention of the patentee. And it is found by the master that there are other modes of slow cooling, and even other modes of relieving against the inherent strain caused by unretarded cooling, than that practised by the complainant and claimed by him. Though, therefore, slow cooling is an essential part of the complainant's process, it is an equally essential part of other processes which the defendant was at liberty to use in preparing his car-wheels for market.

“ We add only that in our opinion the defendant should not have been charged with interest before the final decree. The profits which are recoverable against an infringer of a patent are in fact a compensation for the injury the patentee has sustained from the invasion of his right. They are the measure of his damages. Though called profits, they are really damages, and unliquidated until the decree is made. Interest is not generally allowable upon unliquidated damages. We will not say that in no possible case can interest be allowed. It is enough that the case in hand does not justify such an allowance. The defendant manufactured the wheels of which the complaint is made under a patent granted to him in 1861. His infringement of the complainant's patent was not wanton. He had before him the judgment of the Patent Office that his process was not an invasion of the patent granted to the complainant, and though this does not protect him against responsibility for damages, it ought to relieve him from liability to interest on profits.”

§ 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 any thing 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.¹ 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 reissued 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.²

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.³

¹ *Evans v. Weiss*, 2 Wash. 312; *Dixon v. Moyer*, 4 Wash. 68.

² *Ames v. Howard*, 1 Sumner, 482, 488. In this case Mr. Justice Story said: "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's R. 218), as from the act of Congress of the 3d of July, 1833, c. 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."

³ *Moffitt v. Garr*, 1 Black. 273. See, further, same case, sub-chapter on Action at Law.

§ 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, 1837.¹

¹ *Hogg v. Emerson*, 6 How. 437.

CHAPTER IX.

OF THE REMEDY FOR AN INFRINGEMENT BY ACTION AT LAW.

§ 344. THE act of Congress of July 4, 1836, c. 357, § 14, provides that damages may be recovered for an infringement by “an action on the case,” — a remedy which exists equally at common law, for the violation of the right secured by letters-patent.¹

§ 345. I. *Parties.* — The statute also provides “that the action shall be brought in the name or names of the person or persons interested, whether as patentee, assignees, or as grantees of the exclusive right within and throughout a specified part of the United States.”²

§ 345 *a.* The language of the latest patent law, that of 1870, is “that damages for the infringement of any patent may be recovered by action on the case in any circuit court of the United States, or district court exercising the jurisdiction of a circuit court, or in the Supreme Court of the District of Columbia, or of any Territory, in the name of the party interested, either as patentee, assignee, or grantee.”

§ 346. Formerly, the grantee for a particular district could not bring an action on the patent in his own name.³ But the statute has made him a party interested in the patent, and consequently, in his own district, he may sue in his own name.⁴

But in order that the assignee of a sectional interest may sue in his own name, the assignment must clearly convey to him the

¹ Bull. N. P. 76.

² Act of July 4, 1836, c. 357, § 14. It seems that no previous notice or claim of a right to the exclusive use of an invention is necessary to enable a patentee to maintain an action for an alleged violation of his patent right. *Ames v. Howard*, 1 Sumner, 482.

³ *Tyler v. Tuel*, 6 Cranch, 324.

⁴ Such a suit may be maintained although the plaintiff is the grantee of a right to use only a limited number of the patented machines in the particular district, provided it is an exclusive right, and it may be maintained against the patentee himself. *Wilson v. Rousseau*, 4 How. 646.

entire and unqualified monopoly which the patentee held in the specified territory, excluding the patentee himself as well as others; for any assignment short of this is a mere license.¹

It has been recently held that the grant of a right to construct and use fifty machines within certain localities, reserving to the grantor the right to construct and to license others to construct, but not to use them therein, was the grant of an exclusive right under the patent of 1836, and that consequently the suit was rightly brought in the name of the assignees, although agreed to be at the expense of the grantor.²

An action may properly be brought by the patentee in behalf of one to whom he has granted an exclusive license and who has been damaged by the infringement.³

It has also been held that one joint owner of a patent can bring an action of infringement against his co-owner for making and selling machines in a manner which does not respect his rights.⁴

§ 347. Where the patentee has assigned his whole interest, either before or after the patent was taken out, the action can only be brought in the name of the assignee;⁵ but where the assign-

¹ *Gaylor v. Wilder*, 10 How. 477, per Taney, C. J.

² *Washburn v. Gould*, 3 Story, 122.

³ *Goodyear v. McBurney*, 3 Blatchf. 32.

⁴ *Pitts v. Hall*, 3 Blatchf. 201.

⁵ *Herbert v. Adams*, 4 Mass. 15. Affirmed by ruling in *Gaylor v. Wilder*, 10 How. 477. "The inventor of a new and useful improvement certainly has no exclusive right to it until he obtains a patent. This right is created by the patent, and no suit can be maintained by the inventor against any one for using it before the patent is issued. But the discoverer of a new and useful improvement is vested by law with an inchoate right to its exclusive use, which he may perfect and make absolute by proceeding in the manner in which the law requires. Fitzgerald possessed the inchoate right at the time of the assignment. The discovery had been made, and the specification prepared to obtain a patent. And it appears by the language of the assignment that it was intended to operate upon the perfect legal title which Fitzgerald then had a lawful right to obtain, as well as upon the imperfect and inchoate interest which he actually possessed. The assignment requests that the patent may issue to the assignee, and there would seem to be no sound reason for defeating the intention of the parties by restraining the assignment to the latter interest, and compelling them to execute another transfer, unless the act of Congress makes it necessary. The court thinks it does not. The act of 1836 declares that every patent shall be assignable in law, and that the assignment must be in writing, and recorded within the time specified. But the thing to be assigned is not the mere parchment on which the grant is written. It is the monopoly

ment is of an undivided part of the interest, the action should be brought in the joint names of the patentee and the assignee, as representing the whole interest.¹

In a recent English case,² it was held that the assignee of a separate and distinct portion of a patent may sue for an infringement of that patent, without joining one who has an interest in another part, the damages to be recovered accruing to the former alone. The patentee, having obtained a patent for "improvements in lace *and other weavings*," assigned to the plaintiffs "all share and interest in it so far as it related to or concerned the making, using, exercising, and vending of the said invention of improvements in the manufacture of *close weavings* in lace, and of *twisted purple edges* of lace and other weavings in *twist lace machines*, as described in the *sixth* part of the specification," &c. The plaintiffs brought an action in their own name for alleged infringement of this part of the patent, to which the defendants pleaded want of right to sue. This was demurred to by plaintiffs, and the demurrer sustained by the court. Erle, C. J., said (Crowder and Byles, J.J.,

which the grant confers; the right of property which it creates. And when the party has acquired an inchoate right to it, and the power to make that right perfect and absolute at his pleasure, the assignment of his whole interest, whether executed before or after the patent issued, is equally within the province of the act of Congress.

"And we are the less disposed to give it a different construction, because no purpose of justice would be answered by it; and the one we now give was the received construction of the act of 1793, in several of the circuits. As long ago as 1825, it was held by Mr. Justice Story that, in a case of this kind, an action could not be maintained in the name of the patentee, but must be brought by the assignee. 4 Mason, 15 (*Herbert v. Adams*). We understand the same rule has prevailed in other circuits, and if it were now changed, it might produce much injustice to assignees who have relied on such assignments, and defeat pending suits brought upon the faith of long-established judicial practice and judicial decision. Fitzgerald sets up no claim against the assignment, and to require another to complete the transfer would be mere form. We do not think the act of Congress requires it; but that when the patent issued to him, the legal right to the monopoly and property it created was, by operation of the assignment then on record, vested in Enos Wilder." Per Taney, C. J.

¹ *Whittemore v. Cutter*, 1 Gallis. 429, 430. An assignee of the exclusive right to use a certain number of machines in a certain district, may join his assignor with him in a bill for an injunction. *Woodworth v. Wilson*, 4 How. 712.

² *Dunnicliff v. Mallett*, 7 C. B. N. S. 209.

concurring) : “ I am of opinion that the plaintiffs are entitled to judgment on these demurrers. The main question which has been argued before us arises apparently for the first time ; therefore we must decide it according to general principles of law, no authority having been cited which bears any very close analogy. That question is, whether an assignment of part of a patent is valid. I incline to think that it is. It is every day’s practice, for the sake of economy, to include in one patent several things which are in their nature perfectly distinct and severable. It is also every day’s practice to get rid by disclaimer of part of a patent which turns out to be old. Being therefore inclined to think that a patent, severable in its nature, may be severed by the assignment of a part, I see no reason for holding that the assignee of a separate part, which is the subject of infringement, may not bring an action. Then, are the assignees, bringing an action for an injury done solely to them by an infringement of that part of the patent which is thus vested in them alone, liable to be defeated because they have not joined the assignees of other parts of the patent, who have no manner of interest in the damages sought to be recovered in such action ? I see no reason why the action should be defeated on such ground. I see no reason why the plaintiffs should be put to the trouble and expense of applying for leave to use the names of the other parties, or of compelling them by means of a judge’s order to permit their names to be used upon an indemnity, where no practical advantage whatever is to be gained by it, — the injury being to the assignees of part only, and the damages to be recovered being theirs only. It is said that the defendants may possibly be prejudiced by the non-joinder of the other parties, inasmuch as they might thereby be deprived of the advantage of any admissions which might have been made by them. I cannot think that it is a tenable ground of objection, because, if those parties were joined, any admissions by them would not be binding on the now plaintiffs, unless made in and for the purpose of the suit. Then, as to the alleged inconvenience of the matter being brought in question several times, I must confess I do not feel the force of the argument. In the ordinary case of a patentee trying the validity of the patent against several infringers, the power given to the judge to certify under 5 and 6 W. 4, c. 83, § 3, is only a provision in favor of the patentee, to entitle him to treble costs where the validity of the patent has already been

established. I am not aware of any authority or of any principle which precludes the assignee of part of a patent from suing for an infringement of that part; nor do I think it would lead to any multiplying of actions to permit it. I am therefore of opinion that our judgment should be for the plaintiff on both these demurrers.”

This opinion is not to be reconciled with that of Taney, C. J., in the case of *Gaylor v. Wilder*, *supra*; still less with that of Grier, J., in *Blanchard v. Eldridge*.¹ Here the plaintiff, having obtained a patent for turning every kind of irregular forms, assigned to one Carter “the full and exclusive license, right, and permission to have, hold, use, and enjoy Blanchard’s patent for turning irregular forms, &c., so far as said improvement is or may be used for turning *shoe lasts, boot and shoe trees, and hat blocks, and also for turning spokes for wheels of all kinds of carriage-wheels, and all articles that form any part in the construction of carriages, &c.* He (the patentee, Blanchard) then brought the present suit for an alleged infringement of these rights, granted exclusively to Carter. The defendant moved for a new trial on the ground that the plaintiff was not entitled to sue, but the motion was refused. Grier, J.: “The point here raised by the defendant’s counsel is not without its difficulty, and the force of his argument cannot be evaded, if his assumption be true, that this deed transfers to Carter the legal title of that portion of the patent which it purports to vest in him. But if it does not so operate, it cannot be noticed in a court of law, and cannot affect the case. As the grants of the crown were at common law construed with the greatest strictness, the privileges granted by a patent for a monopoly would probably not have been treated as capable of assignment unless made so by the letter of the grant. Since the statute 21 James I., patents for useful inventions (notwithstanding the statute itself mentions the ‘inventor’ only) have always granted the privilege or monopoly to the inventor, his executor, administrator, and assigns. These monopolies, therefore, are assignable as other personal chattels, by force of the grant which creates them. As a chattel, also, it might be held by two or more joint owners; hence any undivided portion or interest in the whole as a unity might be assigned, and if the original grantee

¹ 1 Wall. C. C. 337.

died, such assignees might join in action for infringement of their right.¹ But the patent right itself was insusceptible of local subdivision.² As a privilege or monopoly it was an entire thing, indivisible and incapable of apportionment.³

“But the act of Congress of 1836 has regulated the assignment of patents. Sec. 11 provides that a patent shall be assignable, — (1) As to the whole interest; (2) As to any undivided part thereof; (3) An exclusive right may be granted throughout any specified part or portion of the United States. Sec. 14 requires the action for infringement to be brought ‘in the name or names of the person or persons interested, whether as patentee, assignees, or as grantees of the exclusive right within and throughout a specified part of the United States.’ The word ‘assignees’ in this section must be construed by reference to the eleventh section, already referred to, which defines in what way a patent may be assigned, to wit, either the whole or any undivided portion of the whole. The statute also renders the monopoly capable of subdivision in the category of its locality, but in no other way. The patentee is not allowed to carve out his monopoly, which is a unity, into a hundred or more, all acting in the same place and liable to come into conflict. The grant to Carter, by the deed under consideration, is not of the whole monopoly, nor of any undivided portion of the whole, and though for an “exclusive right,” it is not exclusive of all others within a certain district or *specified part* of the United States; on the contrary, it is an exclusive right to use the machine for a *specified purpose*. A machine for turning irregular figures may be used for numberless purposes. If the patentee or his assignee can assign to A. an exclusive right to use the machine for making shoe-lasts, to B. for turning spokes, to C. for axe-handles, and so on to the end of the alphabet, then may he, out of his one monopoly, carve out a thousand others, each subdivision, like a polypus, being itself a several monopoly, and having a separate existence in the same place. What endless perplexity and confusion must necessarily arise from the establishment of such a doctrine! Suppose the monopoly granted by this patent parcelled out to some twenty sub-monopolies, with an exclusive right to each to use his machine

¹ *Boulton v. Bull*, 2 H. Blackst. 463.

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

³ *Brooks v. Byam*, 2 Story, 525.

for certain purposes in any given place; what remedy could A. have against B. for an infringement of his special privilege. The patentee or grantor might restrain his grantee of a machine for a special use, by a covenant; but, as between the several grantees, no action could lie, although they alone might suffer from a breach of the covenant.

“But it is sufficient for purposes of the present inquiry, that the act of Congress has not given a legal sanction to such transfers or assignments, nor subjected even a pirate of the machine to fifty different suits by fifty several assignees, whose several interests might be affected if a patent could be thus split up into numerous exclusive rights or sub-monopolies. Whether the deed confers on Carter and his assigns more than a special license, or what remedy a court of equity might be disposed to extend to him where his rights are infringed, it is not necessary now to inquire. As it does not confer a legal title to the whole or an undivided portion of the patent, nor grant ‘an exclusive right within a specified part of the United States,’ it cannot be received to affect this case. It was wholly irrelevant and ought not to be received in evidence. It adds to my confidence in the correctness of this view, that, as I have been informed, my brother Nelson has ruled the question in the same way in the second circuit.”

In a subsequent English case,¹ it was held that the plaintiff, who had acquired, first, an undivided moiety from the patentees directly, and afterwards the remaining share indirectly, through a mesne assignment, was thereby vested with the entire right of the patentees, and could even bring an action against them for infringement. If the assignment has not been made, but has been merely agreed to be made, the action should be in the name of the patentee, the assignee not having the interest until the assignment has been made and recorded.² But it may be recorded at any time after the suit is brought and before trial.³ An action for an infringement may be maintained against a corporation.⁴

§ 347 *a*. In the recent case of *Moore v. Marsh*,⁵ in the Supreme

¹ *Walton v. Lavater*, 8 C. B. N. S. 162.

² *Park v. Little*, 3 Wash. 196.

³ *Pitts v. Whitman*, 2 Story's R. 609, 614.

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

⁵ 7 Wall. 515.

Court of the United States, the issue was raised as to the true meaning of the words "name of the person interested" in the fourteenth section of the act of 1836, whether they meant persons interested in the patent at the time when the suit was brought, or when the cause of action accrued.

The facts in this case showed that Moore had brought suit against Marsh for infringement, the defence to which was that *after* the date of the alleged infringement, Moore had sold and assigned an undivided half of the patent for the district where the infringement was alleged to have been committed. The Court held that the right of action was given to the person or persons owning the exclusive right to the patent at the time of infringement. Otherwise there would be no redress, as a subsequent assignee or grantee can neither maintain an action in his own name, nor be joined with the patentee in maintaining it for any infringement of the exclusive right committed before he became interested in the patent. "The true meaning of the word 'interested,'" said Mr. Justice Clifford in pronouncing the judgment of the court, "as employed in the last clause of the fourteenth section of the Patent Act, when properly understood and applied, is that the right of action is given to the person or persons owning the exclusive right at the time the infringement is committed. Subsequent sale and transfer of the exclusive right are no bar to an action to recover damages for an infringement committed before such sale and transfer.

"The reason for the rule is, that the assignee or grantee is not interested in the damages for any infringement committed before the sale and transfer of the patent. Correct interpretation of the words, 'person or persons interested,' is that the words mean the person or persons interested in the patent at the time when the infringement was committed, which is the cause of action for which the damages may be recovered."¹

§ 347 b. Where several persons are appointed as executors of the will of a deceased patentee, but provision is made for one to act independent of the others, and but one proves the will and receives the letters of administration, such executor can maintain an action for infringement of the letters-patent at common law without joining his co-executors. And where the patent

¹ Dean v. Mason, 20 How. 198.

was surrendered by such person as executor, and a reissue was made to him in the same character, it was held that this was a specific grant, and vested in him exclusively the legal title, and that the grantee could sustain a suit on the patent in all respects, as if he had been designated in it as *trustee* instead of executor.¹

§ 348. The Supreme Court of the United States have held that a covenant by a patentee, made prior to the law authorizing extensions, that the covenantee should have the benefit of any improvement in the machinery, or alteration or renewal of the patent, did not include the extension by an administrator under the act of 1836; that it must be construed to include only renewals obtained upon the surrender of a patent on account of a defective specification, and, therefore, that a plaintiff who claimed under an assignment from the administrator could maintain a suit against a person who claimed under the covenant.²

§ 349. II. *The Declaration.* — The declaration, in an action for the infringement of a patent, should show a title in the plaintiff, with convenient certainty; and should set forth all the matters which are of the essence. Without these allegations, the plaintiff fails to show a right in point of law to ask the court for judgment in his favor. The several parts of the declaration may here be considered in the order in which they occur in pleading.

§ 350. The declaration should commence with a recital that the plaintiff was “the original and first inventor” of the subject-matter, the making, using, or vending of which is complained of. This averment is necessary, notwithstanding the letters-patent, afterwards referred to, recite that the plaintiff has alleged that he was the original and first inventor; because it must appear affirmatively, in point of fact, at the trial, that he was so, and the letters-patent can only be resorted to as *primâ facie* evidence of the fact. There must, therefore, be a distinct allegation of the fact, as one of the things essential to the plaintiff's title.³ For the same reason, the declaration goes on to aver that the subject-matter was “new and useful,” “not known or used before the plaintiff's invention or discovery,” and “not at the time of his

¹ Rubber Co. v. Goodyear, 9 Wall. 788.

² Wilson v. Rousseau, 4 How. 646.

³ The plaintiff must affirm the performance of all acts on which his title depends. Gray v. James, Peters, C. C. R. 476.

application for a patent in public use or on sale with his consent or allowance.”

But while a declaration on letters-patent must tender issue on the novelty and utility of the invention patented, it need not aver at what specific time such invention was made, but only that it was before the application for the patent.¹

§ 351. Whether it is necessary to aver the citizenship of the patentee has never been determined. In practice it is generally done, and it is safer to do so than to omit an averment which might on demurrer be held to be essential.² But it is absolutely necessary to aver that the plaintiff, being the original and first inventor, obtained letters-patent for his invention, in due form of law, under the seal of the Patent Office, signed by the Secretary of the Interior, and countersigned by the commissioner of patents.³

The declaration need not, however, show the regularity of the proceedings in the Patent Office preliminary to the grant, but may simply aver that the grant was duly obtained.⁴

¹ *Wilder v. McCormick*, 2 Blatchf. 31.

² Mr. Phillips suggests that the necessity for this averment will depend on the construction to be given to the fifteenth section of the act of 1836, by which, if the patentee be an alien, the defendant is permitted to show that the patentee has “failed and neglected for the space of eighteen months from the date of the patent to put and continue on sale to the public, on reasonable terms, the invention or discovery.” Phillips on Patents, p. 520, note. This clause in the statute can scarcely be considered as imposing a burden of proof of citizenship on the plaintiff. It authorizes the defendant to avail himself of the fact that the plaintiff is an alien, by showing that the plaintiff has omitted to do certain acts; but is any thing more to be inferred from the clause than this, that if the defendant means to show the omission, he must first show that the plaintiff is an alien? I agree, however, with the learned author, that to aver the citizenship is the safest course.

³ Formerly, patents bore the attestation of the President of the United States; and it was held to be necessary to aver that the letters had been so tested, and that the patent had actually issued, or been delivered; otherwise, the declaration would be bad on demurrer. *Cutting and others, Executors v. Myers*, 4 Wash. 220. For the same reason, the averment is now necessary that the letters were duly tested by the public officers whose duty it is to sign and countersign them; and the mode of averring the delivery, now usually practised, is to declare that the plaintiff, on such a day, “did obtain” them. But it is not necessary to aver that the preliminary steps to obtain a patent were taken, because if the declaration aver that the patent was granted in the form prescribed by law, the court, upon demurrer, will presume that every thing was rightly done to obtain it. *Fulton’s Executors v. Myers*. Vide act of 1849, c. 108, § 2; modifying act of 1836, c. 357, § 5.

⁴ *Wilder v. McCormick*, 2 Blatchf. 31. “The third and fourth causes of de-

§ 352. The substance of the grant should then be set forth, that is to say, that the letters-patent secured to the plaintiff, his murrer cannot be sustained. The third is, that it does not appear that the application for the patent was in writing, nor to whom it was made. The fourth is that it does not appear that the commissioner of patents had any rightful authority to grant the patent. These causes are founded upon supposed requisites of the statute, not averred in the declaration to have been complied with, and are also supposed to be supported by general principles governing proceedings in tribunals of inferior jurisdiction. If the matters which it is alleged should be set forth in the declaration would call for the application of those principles in case they were pleaded by way of justification and in defence of acts done, or as a protection to the party pleading them, which would at least be a doubtful proposition (*Martin v. Mott*, 12 Wheat. 19), it would not necessarily follow that the same method of pleading must be pursued in declaring upon a private title or a grant emanating from functionaries acting under statutory authority. (*Day v. Chism*, 10 Wheat. 449; *Bank of the United States v. Smith*, 11 Wheat. 171; *Carroll v. Peake*, 1 Peters, 18, 23.) The third cause of demurrer rests upon the assumption that the plaintiff must, in his pleading, specify all the acts done by him: ~~to obtain~~ a patent, in order that it may appear upon the face of the declaration that the mode of proceeding pointed out by the statute has been pursued. But the case of the *Philadelphia & Trenton R.R. v. Stimpson*, 14 Peters, 448, disposes of this and all the other objections that fall within the same class. The grant of the patent is itself sufficient evidence that all the preliminary steps required by law were properly taken. And, as the plaintiff may make his patent the direct and efficient proof, in the first instance, of his right to the grant, so *à fortiori* it would seem unnecessary for him to plead any of the particulars which conduced to the grant. It is sufficient to set forth the grant in substance (*Tryon v. White*, Peters, C. C. 96). The fourth cause of demurrer is founded upon a misapplication of a doctrine appertaining to the acts of legal tribunals, where a court of inferior jurisdiction takes cognizance of a case and renders judgment, and he who sets up such judgment in support of his own interests must aver and prove that the tribunal had jurisdiction in the matter. The authority of the commissioner of patents, or of the commissioner of the land office, or of the President to issue grants, is not of the nature of *jurisdiction* in its common-law and technical acceptation. As in regard to patents for land, so in regard to patents for inventions, the proper officer issues the grant when he has evidence satisfactory to his own mind that the claimant is entitled to receive it. But that adjudges nothing as to the real right. That question is unaffected, and remains to be examined and decided between parties contesting it, without prejudice or advantage from the letters-patent. We are not aware of any mode of pleading by which the courts can be called upon to settle the regularity of the preliminary proceedings in the patent office. Nor does there seem to be any utility in putting in issue the authority of the commissioner, upon the facts before him, to grant a patent, because, if the decision should negative his authority, it could not revoke or supersede the patent. The declaration must tender an issue upon the novelty and utility of the discovery patented, these being essential to the enforcement of any exclusive

heirs, administrators, &c., for the term of fourteen years, the full and exclusive right of practising the invention; which should be described briefly, as it is set forth in the letters-patent, of which profert should be made.¹ Where the declaration describes the plaintiff's invention in the words of the patent, it is not necessary that the description, as stated in the specification, should be set forth. If the defendant require the specification in his defence, he may have it placed in the record by praying oyer of it.²

§ 353. The declaration is concluded by an averment of the value of the patent right and of the breach by the defendant, and the damages sustained by the plaintiff.³

In this action for a breach of the patent, it is indispensable to establish a breach before suit brought. But in equity the doctrine is otherwise, as a bill for an injunction will lie upon sufficient proof of an intent to violate.⁴ The declaration need not set forth the act complained of as contrary to the statute,⁵ but may simply allege that the defendant "made, constructed, used, and vended to sundry persons," &c., the said invention.⁶ Repeated infringements may be sued for in one action.⁷ A declaration

privilege under the patent. But the question of the regularity of the proceedings in petitioning for and obtaining the patent, and that of the correctness of the judgment of the officer in awarding it, are not material, and cannot be inquired into."

¹ Chit. Pl. vol. 2. Profert of the letters-patent, in the declaration, makes them and the specification, when produced, a part of the declaration, and so gives all the certainty, as to the invention and improvement patented, required by law. *Pitts v. Whitman*, 2 Story's R. 609, 614.

² *Gray v. James, Peters*, C. C. R. 476.

³ See the Precedents in the Appendix.

⁴ *Woodworth v. Stone*, 3 Story, 749.

⁵ *Parker v. Haworth*, 4 McLean, 370. "A motion was made in arrest of judgment, on the ground that the declaration does not set forth the act complained of as contrary to the statute. This is necessary when an action is brought on a penal statute, but not in the case like the present, where damages are sought for an injury done. Where the plaintiff sues for a penalty, as the statute is the only foundation for the action, the declaration must aver that the act is *contra formam statuti*. In *Tyron v. White* (Peters, C. C. R. 96), it is said, 'if the declaration in an action for the invasion of a patent right fails to lay the act complained *contra formam statuti*, the defect will be purged after the verdict.'"

⁶ *Case v. Redfield*, 4 McLean, 526.

⁷ *Wilder v. McCormick*, 2 Blatchf. 31. "A reiteration of infringements of a patent, like a repetition of torts of any other kind which are of the same

commencing in the form of action of trespass on the case, and concluding in the form of action of debt, is not demurrable.¹

§ 354. If the plaintiff sues in the character of assignee of the patent, he must set forth both the patentee's title and his own, and should aver that the assignments were duly recorded in the Patent Office. If the declaration omit to state that the assignments were recorded, the omission will be cured by verdict, if the general terms of the declaration are otherwise sufficient to have authorized the admission of proof of the recording at the trial; upon the general principle, that, after verdict, all the facts necessary to have been proved to enable the jury to find a verdict for the plaintiff, will be presumed to have been proved, if the general terms of the declaration would have let them in.²

nature, may be sued for and recompensed in one action. There is no known doctrine of the law that requires a plaintiff to split up into separate actions grievances of that character."

¹ Ibid. "We do not perceive that there is any material incongruity between the commencement and the close of the declaration. The gravamen of the suit is the tortious infringement of the plaintiff's patent, and the conclusion of the declaration is a demand of damages in gross. They are averred to be 'actual damages,' but that allegation does not change the nature of the averment. It is still merely a demand of damages in compensation of the wrong."

² *Dobson v. Campbell*, 1 Sumner, 319, 326, Story, J. "We are of opinion that the motion in arrest of judgment ought to be overruled. We accede to the doctrine stated at the bar, that a defective title cannot, after verdict, support a judgment; and therefore it constitutes a good ground for arresting the judgment. But the present is not such a case; but is merely the case of a good title defectively set forth. The defect complained of is the omission to state that the assignments, on which the plaintiff's title is founded, were duly recorded in the office of the department of state, which is made essential to pass the title of the original patentee, by the fourth section of the Patent Act of the 21st of February, 1793, c. 55. The general principle of law is, that, where a matter is so essentially necessary to be proved, to establish the plaintiff's right to recovery, that the jury could not be presumed to have found a verdict for him, unless it had been proved at the trial, there the omission to state that matter in express terms, in the declaration, is cured by the verdict, if the general terms of the declaration are otherwise sufficient to comprehend it. This was the doctrine of Lord Ellenborough, in *Jackson v. Pesked* (1 M. & Selw. R. 234); and it is very elaborately expounded by Mr. Sergeant Williams, in his learned note to 1 Saunders' R. 228 a. The other authorities, cited on behalf of the plaintiff, are to the same effect. Now, it seems to us, that taking the whole declaration together (however inartificially drawn), the plaintiff sets up a title to the patent right by assignment, and an

§ 355. At the trial, proof may be given of the recording of an assignment, either before or after the action was brought.¹

§ 356. III. *Pleadings and Defences.* — The fifteenth section of the act of 1836 provides that the defendant, in any action for the infringement of a patent, shall be permitted to plead the general issue, and to give the statute and any special matter in evidence, of which notice in writing may have been given to the plaintiff or his attorney, thirty days before trial, tending to prove that the description and specification of the patent does not contain the whole truth relative to the 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; or that the patentee was not the original and first inventor or discoverer of the thing patented, or of a substantial and material part thereof claimed as new, or that it has been described in some public work anterior to the supposed discovery by the patentee, or had been in public use, or on sale, with his consent or allowance, before his application for a patent, or that he had surreptitiously or unjustly obtained a patent for that which was in fact invented or discovered by another, who was using reasonable diligence in adapting and perfecting the same; or that the patentee, if an alien at the time the patent was granted, had failed and neglected, for the space of eighteen months from the date of the patent, to put and continue on sale to the public, on reasonable terms, the invention or discovery for which the patent issued; in either of which cases, judgment is to be rendered for the defendant, with costs.

§ 357. The object of this provision was to enable the defendant to give certain special matters in evidence under the plea of the general issue. It seems to have been generally supposed, at a very early period in the history of our legislation, that under a plea of the general issue, the defendant could not be allowed to

enjoyment and use of the right under that title, and that he has been injured in that right, under that title, by the piracy of the defendant. This cannot be true, nor could a verdict for the plaintiff have been found by the jury, if the deeds of assignment had not been duly recorded; for, unless that was done, nothing could pass by the deeds. The cases of *Hitchins v. Stevens* (2 Shower R. 233), and *McMurdo v. Smith* (7 T. R. 518), cited at the bar, seem to us very strongly in point. So is *France v. Fringer*, Cro. Jac. 41.”

¹ *Pitts v. Whitman*, 2 Story, 609. Of course, therefore, it is not necessary to aver that the assignment was recorded within three months. *Ibid.*

attack the validity of the patent, and that that plea only put in issue the question of infringement.¹ Accordingly, the act of 1793, § 6, enumerated certain special defences, which it declared the defendant "shall be permitted" to give in evidence under the general issue, by first giving notice thereof to the plaintiff. The Supreme Court of the United States construed the provision as intended to relieve the defendant from what were supposed to be the difficulties of pleading, by allowing him to give in evidence, under the plea of not guilty, certain matters affecting the patent, providing, at the same time, for the security of the plaintiff against surprise, by requiring notice to be given of the special matter to be relied on. This notice was substituted for a special plea.² The court also declared that the defendant was not obliged to pursue this course. He might plead specially, in which case the plea would be the only notice the plaintiff could claim; or he might plead the general issue, in which case he must give notice of the special matter on which he relied.³ However,

¹ But it was not so in England. Until the act 5 and 6 Wm. IV., c. 83, § 5, the usual plea was *not guilty*, which, putting in issue the whole of the declaration, forced the plaintiff to support the grant in all its parts, and gave to the defendant the greatest latitude for evidence; but now the defendant must plead all the defences, and must also deliver in a list of the objections on which he intends to rely at the trial. Godson on Patents, 238, 2d ed.

² *Evans v. Eaton*, 3 Wheat. 454; *Evans v. Kremer*, Peters, C. C. R. 215. See, also, the elaborate note on the patent law in the Appendix to 3 Wheat., Note II. (written by Mr. Justice Story).

³ *Evans v. Eaton*, 3 Wheat. 454, 503. In this case Mr. Chief Justice Marshall said: "The sixth section of the act appears to be drawn on the idea that the defendant would not be at liberty to contest the validity of the patent on the general issue. It therefore intends to relieve the defendant from the difficulties of pleading, when it allows him to give in evidence matter which does affect the patent. But the notice is directed for the security of the plaintiff, and to protect him against that surprise to which he might be exposed from an unfair use of this privilege. Reasoning merely on the words directing this notice, it might be difficult to define, with absolute precision, what it ought to include, and what it might omit. There are, however, circumstances in the act, which may have some influence on this point. It has been already observed, that the notice is substituted for a special plea; it is further to be observed, that it is a substitute to which the defendant is not obliged to resort. The notice is to be given only when it is intended to offer the special matter in evidence on the general issue. The defendant is not obliged to pursue this course. He may still plead specially, and then the plea is the only notice which the plaintiff can claim. If, then, the defendant may give in evidence, on a special plea, the prior use of the machine, at places not specified in his

where the defendant pleads specially and not under the general issue, the plea must still be filed thirty days before the term, or the plaintiff will be entitled to a continuance. The plaintiff has a right to the thirty days, whether the matter be set up by plea or by notice.¹

§ 358. The fifteenth section of the act of 1836 is taken, with some additional defences, from the sixth section of the act of 1793, and has the same object in view. It differs from the former act, by omitting the provision that the patent "shall be declared void," if judgment is rendered for the defendant, and by providing that "when the defendant relies in his defence on the fact of a previous invention, knowledge, or use of the thing patented, he shall state in his notice of special matter the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same thing had been used." This provision was added in consequence of the construction given to the former act, to the effect that notice of the places was not necessary to be given.² In other respects, the construction given to the act of 1793, section six, is applicable to the present law. The defendant is at liberty to plead specially, in which form of pleading he need give no other notice of his defence than the plea itself gives, or he may plead the general issue, and give notice of the special matter on which he relies. The statute does not undertake to enumerate all the defences which may be made to an action on a patent. It provides that when certain facts, which it enumerates, are to be relied on, and

plea, it would seem to follow that he may give in evidence its use at places not specified in his notice. It is not believed that a plea would be defective, which did not state the mills in which the machinery alleged to be previously used was placed.

"But there is still another view of the subject which deserves to be considered. The section which directs this notice also directs that if the special matter stated in the section be proved, 'judgment shall be rendered for the defendant, with costs, and the patent shall be declared void.' The notice might be intended not only for the information of the plaintiff, but for the purpose of spreading on the record the cause for which the patent was avoided. This object is accomplished by a notice which specifies the particular matter to be proved. The ordinary powers of the court are sufficient to prevent, and will undoubtedly be so exercised, as to prevent the patentee from being injured by the surprise."

¹ Phillips v. Comstock, 4 McLean, 525.

² Evans v. Eaton, ante, note ; Evans v. Kremer, Peters, C. C. R. 215.

the general issue is pleaded, the defendant shall give notice of the facts which he means to put in evidence.¹ The notice must be strictly construed; if the defendant gives notice that he will prove the prior use of the invention in the United States, he cannot be allowed to offer evidence of its prior use in England.²

§ 359. But it will be useful to make a particular enumeration of the defences that may be made under the general issue, without notice, before we turn our attention to those mentioned in the statute, of which notice must be given, when the general issue is pleaded.

§ 360. The defendant may show, under the general issue, without notice, that he never did the act complained of, that is, that he has not infringed the patent, or that he was acting under a license or purchase from the plaintiff.³ He may show that the plaintiff is an alien, not entitled to a patent; or that the plaintiff has not a good title as assignee; or that his patent was not duly issued according to law, in respect of the signatures of the public officers, or of the public seal, &c.⁴

§ 361. He may also show that the invention is not a patentable subject; that is to say, admitting its novelty, he may show that it is not an "art, machine, manufacture, or composition of matter," in the sense of the statute.⁵ But the defence that the subject is not patentable on the ground of want of novelty falls under the statute, and must be specified.

§ 362. In like manner, the defendant may show, under the general issue, without notice, that the invention, though new, fails in point of utility, and is worthless and frivolous.⁶

¹ *Whittemore v. Cutter*, 1 Gallis. 429, 435; *Grant v. Raymond*, 6 Peters, 218.

² *Dixon v. Moyer*, 4 Wash. 68.

³ *Whittemore v. Cutter*, 1 Gallis. 429, 435; 3 Wheaton's R. Appendix, Note II. p. 27.

⁴ *Ibid.*; *Kneass v. The Schuylkill Bank*, 4 Wash. 9, 11.

⁵ That the invention is not a patentable subject, admitting its novelty, is a different issue from any that is named in the fifteenth section of the statute, and it is one that is necessarily raised by the plea of "*not guilty*," since the declaration necessarily imports that the patentee had invented a patentable subject.

⁶ Want of novelty is one of the defences enumerated in the fifteenth section, but want of utility is not; but it is a clear bar to the action, upon the terms of the act, as well as upon the general principles of law.