

UNION SUGAR REFINERY v. MATTHIESSON  
ET AL.

[3 Cliff. 639; 2 Fish. Pat. Cas. 600.]<sup>1</sup>

Circuit Court, D. Massachusetts. Nov. 14, 1865.

PATENTS—INVENTIONS—COMBINATION—EQUIVALENTS—EXPERIMENTS—PURITY  
SUGAR.

1. Inventions pertaining to machines may be divided into four classes. (1) Where the invention embraces the entire machine. (2) Where the invention embraces one or more of the elements of the machine but not the entire machine. (3) Where the invention embraces both a new element and a combination of elements previously known. (4) Where all the elements are old, and a new combination, producing a new result, is made out of them.

[Cited in *Seymour v. Osborne*, 11 Wall. (78 U. S.) 542; *American Diamond Rock Boring Co. v. Sutherland Falls Marble Co.*, 2 Fed. 354.]

2. A person is an infringer of a patent of the first class who, without license, makes any portion of the machine; of the second, when the part new and patented is made or used; of the third class, when the new element or new combination is used: of the fourth, when the patented combination is pirated.

[Cited in *Sharp v. Tiffit*, 2 Fed. 701.]

3. The property of the inventor is the exclusive right which the letters-patent secure to him to make, use, and vend the thing patented.
4. The reason that a patent, when introduced in evidence, is prima facie evidence that the patentee is the first and original inventor of what is claimed therein, is that it is issued upon the adjudication of a public officer charged by law with such duty.
5. Where all the elements of a machine are old, the patentee cannot invoke the doctrine of equivalents to suppress all "other improvements on the old machine.

[Cited in *Crompcon v. Belknap Mills*. Case No. 3,406; *Perkins v. Eaton*, 40 Fed. 674.]

6. But he is an infringer who makes or vends the patented improvement with no other change than the employment as a substitute for one of its elements, of a device well known in the state of the art to be such at the date of the invention, and which any constructor acquainted with the art, would then know how to employ. Such substitution of one well-known element for another is a mere colorable evasion of the patent.

{Cited in *Dudley E. Jones Co. v. Munger Improved Cotton Mach. Manuf'g Co.*, 1 C. C. A. 158, 49 Fed. 66.}

7. Whether a witness has sworn falsely or not is a question for the jury, and if they find that he has willfully sworn falsely as to a material fact, they may, if they deem it proper, disbelieve everything he has said.

8. The presumption that the patentee is the original and first inventor of what is claimed in the patent, when introduced in evidence, extends, in the absence of the original application no farther back than the date of the patent; and those alleging an earlier date must prove it by competent evidence.

9. Where there is no evidence to the contrary, the presumption is that the patentee at the time of making his application for a patent believed himself to be the original inventor or discoverer of the thing patented.

10. Crude and imperfect experiments equivocal in their results, and then abandoned and given up, shall not be permitted to prevail against an original inventor who has perfected his improvement and obtained his patent.

11. It is not enough to defeat a patent to show that another had first conceived the possibility of effecting what the patentee accomplished, unless it appears that he reduced what he conceived to practice.

{Cited in *Electric Railroad Signal Co. v. Hall Railroad Signal Co.*, 6 Fed. 606.}

12. If two machines, having the same mode of operation, do the same work in substantially the same way and accomplish substantially the same result, they are the same, though differing in form, shape, or name

{Cited in *Converse v. Cannon*, Case No. 3,144; *Dorsey Harvester Revolving Rake Co. v. Marsh*, Id. 4,014; *Willimantic Linen Co. v. Clark Thread Co.*, Id. 17,763.}

13. If the defendant's means of causing pressure at the nozzle of his machine were, at the date of the patentee's invention, known as a substitute for the means of causing

pressure at the nozzle described in the patent in this case, and if this mode performed the same function as the 687 patented one, and could from a constructor's knowledge be substituted for it, then the two means are substantially the same.

14. The patent in this case is not limited to any arbitrary mathematical amount of pressure, but covers such degree as is capable of carrying out the described object of the patentee under the conditions described in the patent.

{This was an action on the case tried by Judges CLIFFORD and LOWELL and a jury, for the infringement of letters patent [No. 37,548], for "improvement in purifying and cleansing sugar," granted to the plaintiffs as assignees of Gustavus A. Jasper, January 27, 1863. The claim of the patent was as follows: "Combining with process of cleansing sugar by centrifugal action, in the centrifugal machine, a means or process of forcing the cleansing liquid or syrup in one or more fine jets or streams, under high pressure or velocity, against the mass of sugar in revolution, the whole being substantially as described."}]<sup>2</sup>

{See Case No. 14,397.]

G. H. Preston, C. Smith, and B. R. Curtis, for complainants.

Robert Gilchrist, Causten Brown, and E. W. Stoughton, for defendant.

Before CLIFFORD, Circuit Justice, and LOWELL, District Judge.

CLIFFORD, Circuit Justice (charging jury). Pursuant to the uniform practice in this court, it now becomes my duty, as the organ of the court, to direct your attention to the nature of the controversy between these parties, as exhibited in the pleadings, and to give you such instructions in matter of law as seem to be applicable to the evidence in the case.

The action is an action on the case for an alleged infringement of certain letters-patent. The writ is dated the 16th of January, 1864; infringement is alleged on

the 2d day of November, 1863, and from that time to the date of the writ. The plea is the general issue, with notices, under the statute, of certain special defences. The principal special defence relied on is that the assignor of the plaintiff is not the original and first inventor of the improvement described in the letters-patent on which the suit is founded. The claims of the plaintiffs, as laid in the declaration, rest upon two material allegations: First, that their assignor, Gustavus A. Jasper, is the original and first inventor of the improvement described in the patent on which the suit is founded; second, that the defendant, Francis O. Matthiesson, infringed the same as alleged in the declaration. Both of these allegations are denied by the defendant, and the issues presented in the affirmation and denial of these two allegations constitute the principal questions for your decision. They present mixed questions of law and fact, and consequently must be determined under the instructions of the court. Questions of law must be determined by the court, subject to revision by the supreme court on a writ of error; but questions of fact are for your determination, under the instructions of the court as to the rules of law properly applicable to the subject-matter involved in the inquiry.

Controversies like the present are exclusively cognizable in the circuit courts of the United States; and the rights of the parties in such controversies are to be ascertained and determined according to the provisions of the acts of congress upon this subject, and the rules and decisions established by the federal courts. Power is conferred upon congress, in the constitution of the United States, to promote the progress of science and the useful arts by securing, for limited terms, to authors and inventors, the exclusive right to their respective writings and discoveries. Congress has accordingly legislated upon the subject. The existing patent act [5 Stat. 117] establishes the

patent office, and provides for the appointment of a commissioner of patents, by the president, by and with the advice and consent of the senate. Provision is made by section 6 of the act, "that any person or persons, having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not at the time of his application for a patent in public use or on sale, with his consent or allowance, as the inventor or discoverer, and shall desire to obtain an exclusive property therein, may make application in writing to the commissioner of patents, expressing such desire, and the commissioner, on due proceedings had, may grant a patent therefor."

Protection is afforded, as you perceive, by that provision, to inventors of various kinds, but it will only be necessary, in this case, to speak of inventions or improvements in machines. Inventions pertaining to machines may, for the purpose of such explanations as the court find it necessary to give you in this case, be divided into four classes. First, where the invention embraces the entire machine, as a car for a railway, or a sewing-machine, as was decided by this court in a well-known case. Such inventions are seldom made, but when made, and duly patented, any person is an infringer who, without license, makes or uses any portion of the machine. Under such a patent the patentee holds the exclusive right to make, use, and vend to others to be used, the entire machine; and if another, without license, makes, uses, or vends any portion of it, he invades the right of the patentee.

The second class of inventions referred to are those which embrace one or more of the elements of the machine, but not the entire machine; as the coulter of the plough, or 688 the divider of the reaping-machine. In patents of that class any person may make, use, or

vend all other parts of the machine or implement, and he may employ a coultter or a divider in the machine mentioned, provided it be substantially different from that embraced in the patent.

The third class of machines which are to be mentioned are those which embrace both a new element and a new combination of elements previously used and well known. The property in the patent in such a case consists in the new element and in the new combination. No one can lawfully make, use, or vend the machine containing such new element or such new combination. They may make, vend, or use the machine without the patented improvements, if it is capable of such use; but they cannot use either of those improvements without making themselves liable as infringers.

The fourth class of machines to be mentioned are those where all the elements of the machine are old, and where the invention consists in a new combination of those elements, whereby a new and useful result is obtained.

Most of the modern machines are of this class, and many of them are of great utility and value. You will observe that in this class the invention consists solely in the new combination; and the rule is, that the property of the inventor, if duly secured by letters-patent, is in all cases exactly commensurate with his invention. Such an invention, however, is but an improvement upon an old machine; and consequently the patentee cannot treat another as an infringer who has also improved the original machine, by the use of a substantially different combination, although the machines may produce the same result. But every inventor is entitled to the full benefit of his invention, as described and secured in his patent; and no one charged with infringing the same can successfully defend himself against the charge merely because the machine he makes, uses, or vends differs from that

of the plaintiff in any respect which does not render the machine so made, used, or vended substantially different from the patented machine.

Inventions of the fourth class are just as meritorious as those of any other class, and the property of the inventor is entitled to the same protection. When we speak of the property of the inventor, we refer to the exclusive right which the letters-patent secure to him, to make, use, and vend to others to be used, the improvement therein described for the terms specified in the patent. Take the patent, for example, on which the suit is founded. The plaintiffs' property as assignee of the patentee—if the patent is valid—consists in the exclusive right to make, use, and vend to others to be used, the patented improvement for the period specified in the patent. The patentees have that property in their inventions, as secured by letters-patent, and they have no other; hence it is that courts of justice have uniformly held that patents for inventions are not to be treated as mere monopolies, and therefore odious in the eye of the law, but they are to receive a liberal construction, and, if practicable, are to be so interpreted as to uphold and not to destroy the rights of the inventor.

Objection was made by the defendant to the introduction of the letters-patent described in the declaration, but the objection was overruled by the court, and it will be your duty to regard it as properly admitted. Such objections are made to the court, and are never for the consideration of the jury, whether they are sustained or overruled.

The plaintiffs having introduced the letters-patent described in the declaration, the *prima facie* presumption is that they are the assignees, and that the patentee is the original and first inventor of what is therein described as his improvement. The reason of that presumption is, that the letters-patent were issued by a public officer, acting under the authority

conferred upon him by an act of congress. The substance of the provision in that behalf is, as I have before explained, that any person having made an invention or discovery such as is described in section 6 of the patent act, may, if he desires to obtain an exclusive property therein, "make application, in writing, to the commissioner of patents, expressing such desire; and the commissioner, on due proceedings had, may grant a patent therefor." The effect of the provision is, that the commissioner of patents is authorized to determine, in the first place, whether the applicant is entitled to a patent, and having determined that question in the affirmative, and issued the patent, the prima facie presumption is, that he correctly performed his duty; consequently, that the patentee is the original and first inventor of his described improvement. Such presumption, however, is not conclusive in any case, but may be overcome by legal evidence, showing, to the reasonable satisfaction of the jury, that the patentee was not the original and first inventor of the alleged improvement in point of fact.

Although the presumption referred to is not a conclusive one, still it is sufficient to support the issue on the part of the plaintiffs, unless it is overcome by evidence to show that the fact is otherwise; and the burden of proof on this branch of the case is upon the defendant.

Evidence was also introduced by the plaintiffs, tending to support the allegation of infringement, as laid in the declaration. You have already been told that the burden of proof on the question as to the novelty of the invention is upon the defendant; but the burden of proof on the issue of infringement is upon the plaintiffs. They charge infringement, which is a wrongful act, in the nature of a trespass; and inasmuch as no one is presumed to do wrong, the rule is, 689 that he who alleges that another has committed



a wrongful act must prove it. Granting the rule to be as stated, the plaintiffs introduced testimony tending to prove the allegation of infringement, and rested their case in the opening.

You will remember that two defences were opened by the counsel for the defence: First, that the assignor of the plaintiff was not the original and first inventor of the improvement described in the letters-patent on which the suit is founded; second, that the defendant never infringed the patent, as alleged in the declaration. Both parties agree that the two issues mentioned present the principal questions in the case, and most of the evidence introduced by the respective parties has been directed to one or the other of those issues.

In considering these questions, and weighing the evidence bearing upon them it becomes necessary that you should know what the invention is, as described in the letters-patent on which the suit is founded. The construction of a patent is always a question of law, exclusively for the court, except in cases where the patent contains technical words or phrases, or terms of art which require explanation by parole testimony. The present case is one where the construction of the patent is a question exclusively for the court. Viewing it in that light, counsel on the one side and the other have been heard on that subject, and the question has received our deliberate consideration.

The claim of the patent is "the combining with the process of cleansing sugar by centrifugal action, in the centrifugal machine, a means or process of forcing the cleansing liquid or syrup in one or more fine jets or streams under high pressure or velocity against the mass of sugar in revolution, the whole being substantially as above described." Due weight must be given to the words, "the whole being substantially as above described," which is a direct and emphatic reference to the description of invention as contained

in the specification. Independently, therefore, of the general rule, that makes it the duty of the court, in construing the claim of a patent, to look at the entire patent, including the specification and drawings, it is especially necessary to do so in this case because of the emphatic reference made in the claim, to the prior description of the invention. As recited in the patent, the invention is described to be “a new and useful improvement in purifying and cleansing sugar,” and the introductory sentence of the specification describes it as “a new and useful invention, having reference to the cleansing or bleaching of sugar” and the patentee states that it “may also be applicable to other useful purposes of like nature.” Nothing of that kind, however, is otherwise described in the specification, and it is not perceived that the suggestion, unaccompanied by any other explanation, can have much weight in determining the character of the invention. Speaking of the state of the art, the patentee admits “that water or other cleansing liquid has, for the purpose of cleansing sugar, been gradually poured or discharged upon or near the centre or other suitable parts of a mass of sugar contained in a centrifugal machine, while the foraminous vessel of such machine was in rapid revolution” but he utterly repudiates the idea of making any claim to any such procedure. On the contrary, he states that his invention consists in combining with that well-known process, as specified, “a process or means of forcing such cleansing liquid in numerous fine jets or streams, under a high degree of pressure, against the mass of sugar while under centrifugal action” and he makes that statement in immediate connection with the important declaration that his invention enables him to use thick syrups to great advantage, and that thick syrups prevent the melting of the sugar crystals. Moreover, he also states that he has discovered “that if, when a mass of sugar is in revolution in a centrifugal machine, a minute

stream of syrup or other saccharine matter is caused to impinge against it, the impinging force of the stream will cause it to so act against the inner or exposed surface of the mass as to penetrate the same without melting it, and also that the combined forces of impingement and centrifugal action greatly facilitate the cleansing of the sugar." Reference to the further statements of the patent, immediately following the description of the mechanism of his apparatus, will show, with the preceding explanations of the patentee in respect to thick syrups, that the important results obtained by his mode of operation point to the characteristic and most important features of the invention.

Mention should here be made that the patentee, in speaking of his invention, describes it as an apparatus; and in carrying it out, he states that he employs it in connection with one or more centrifugal machines, which he admits are well known. His description of the apparatus is, that at a suitable height above the centrifugal, he places a tight vessel, made of strong material, capable of bearing great internal pressure; that he provides that vessel with a filling pipe, having a stopcock in it; and he also states that it may have a safety-valve and a glass tube, arranged as shown in the drawing, and made to communicate at each end with the interior of the principal vessel, in order that the height of the liquid in the vessel may be indicated by the liquid in the tube. He also states that a pipe leading from an air force-pump may enter the upper part of the above-described vessel; and that another pipe, having a stopcock near its upper end, will lead from the bottom of the vessel, and communicate with a flexible pipe, arranged over each of the centrifugal machines. Continuing 690 the description, he also states that each flexible pipe terminates in a perforated nozzle—"foraminous." he says—which may be provided with a stopcock; and that there may also be a stopcock

at the lowest extremity of the pipe, which proceeds from the bottom of the principal vessel.

Brief as the description is, it is nevertheless amply sufficient, in connection with the model in the ease, to enable you to understand the exact character of the apparatus. A precise description is then given of the mode of operating the apparatus, in order to produce the described result. The first step is to charge the reservoir with strong or thick cleansing liquor or syrup until it is about two thirds full of such liquor. That is the first step. The next step is, to force air into the reservoir, and let it be condensed therein, under a high pressure, varying, however, according to the character of the sugar to be cleansed or bleached. When these steps are taken, the apparatus described is ready for use. But the centrifugal machine or machines must be charged with a mass of sugar and be put in rapid revolution. Nothing then remains to be done but to open the proper stopcocks, especially the one at the lower end of the flexible tube directly over the centrifugal machine, and direct the perforated nozzle of the same so as to discharge with great velocity and force the minute streams of cleansing liquid against the inner surface of the mass of sugar lying against the inner surface of the rotary vessel of the centrifugal machine, taking care to move the nozzle so as to cause the streams to be laid on the sugar evenly.

Doubtless, these suggestions as to the course of reasoning adopted by the court in coming to a conclusion as to the true intent and meaning of the patent under consideration might have been omitted; but in view of the importance of the question, we have thought that it was due to the parties to present these preliminary explanations as to the nature and characteristics of the invention. They are all derived from the patent, and appear to be incontrovertible.

Repeating the remark, that the construction of the patent in this case belongs to the court, you are

instructed that the invention of Gustavus A. Jasper consists in an apparatus of described means for the purpose of cleansing or bleaching sugar with liquor, as set forth in the specification of the letters-patent.

The defendant's views are, that the invention consists merely in combining with the centrifugal machine the mechanical means the patentee has described for discharging, under high pressure or velocity, upon the sugar contained therein, the cleansing liquor or syrup mentioned in the specification; but it is not possible to give you that instruction, for the reason already explained. Plain as those explanations are, however, the object is made even plainer by what immediately follows in the specification. The patentee expressly disclaims his invention as a pressure liquoring apparatus, and states that his object is "to combine with the force induced by the centrifugal machine a force which shall so operate on the cleansing liquor or syrup as to drive it with such velocity into the sugar, while in revolution, as to prevent such sugar from being melted at the surface of impingement." Unquestionably, he contemplates the issue of fine jets or streams, because he states, in addition to what has already appeared, that by throwing the cleansing liquor in minute streams against the surface of the sugar, its tendency to melt the crystals is greatly diminished; and he adds, in that connection, that the smaller the streams the less is their liability to produce that effect.

Special mention was made by the patentee in the outset that his invention enabled him to use thick syrups as cleansing liquids; and his first direction to the operator is, that the reservoir shall be two-thirds filled with a strong or thick cleansing liquid or syrup; and at the close of his description of the advantages of his invention, he repeats for the third time that his invention enables him to employ very thick syrups as cleansing liquids, and thus to diminish

the chance of melting the crystals or particles of sugar to be cleansed. Cleansing or bleaching the sugar is not the only object intended to be accomplished by the apparatus; but the intent and purpose of accomplishing that object with smaller loss, or less melting of the crystals of sugar to be cleansed, are unmistakably indicated and disclosed in the description given of the invention, as well as in the directions to the operator, and in the summing up of the advantages claimed for the invention over previous machines. Detached passages of the specification, if separately considered, might possibly lead to a different conclusion. But the different parts of an instrument must be compared with each other, and the instrument considered as a whole; and when so considered it leaves no doubt in the mind of the court that the invention of the plaintiffs consists in an apparatus of described means for the purpose of cleansing or bleaching sugar with liquor, as set forth in the specification of the patent.

A description has already been given of the elements of the apparatus, and of the means described by the patentee for carrying his invention into effect. Before any inventor can receive a patent for his invention, he is required to deliver a written description of the same, and of the manner of making and constructing it, in such full, clear, and exact terms as to enable any person skilled in the art to practise the invention. Where an invention consists of a machine, he must fully explain the principle and the several modes in which he has contemplated 691 the application of that principle, by which it may be distinguished from other inventions. But he is not required to specify such well-known substitutes for any particular element of his invention as any constructor acquainted with the art fully understands are usually employed as such substitute for the accomplishment of the same function.

All the elements of the invention in this case are old, and the rule in such cases, as before explained, undoubtedly is, that a patentee cannot invoke the doctrine of equivalents to suppress all other improvements of the old machine; but he is entitled to treat every one as an infringer who makes, uses, or vends his patented improvement without any other change than the employment of a substitute for one of its elements, well known as such at the date of his invention, and which any constructor acquainted with the art will know how to employ. The reason for the qualification of the rule as stated is, that such a change—chat is, the mere substitution of a well-known element for another, where it appears that the substituted element was well known as a usual substitute for the element left out—is merely a formal one, and nothing better than a colorable evasion of the patent.

The means for carrying out the invention are: first, a tank containing the liquor; second, a suitable pipe or hose to convey the liquor to a point near the centrifugal machine; third, a flexible hose, with a short perforated nozzle, to enable the operator safely and efficiently to perform the required manipulations; fourth, an air force-pump, entering the upper part of the tank, and forcing air into, the same and condensing it therein, under a high pressure, varying as may be required for the kind of sugar to be treated. Such are the means described in the specification. But it is undoubtedly true that the patent includes such known substitutes for the described means as were within the knowledge of constructors acquainted with the art, and well known as usual substitutes for performing the same purpose.

Guided by these rules as to the construction of the patent, you will proceed to the consideration of the merits of the controversy. Coming to the merits of the controversy, your attention will first be directed

to the question whether the assignor of the plaintiffs is the original and first inventor of the improvement described in the patent, as expounded by the court. Whether he is so or not is a question of fact which you must determine under the instructions of the court, from all the evidence in the case applicable to that issue. Attention should always be paid, in causes like the present, to the precise positions which the respective parties assume as serving to facilitate the investigation; and you will find it necessary or convenient to follow that suggestion with some care in this case, else there is great danger that you may be led into error. In the opening, the defendant conceded that the assignor of the plaintiffs had made an invention, and that the same was seemed to him by letters-patent, specified in the declaration; but he denied that the patent embraced any such apparatus as that which the defendant employed in his sugar refinery during the period covered by the charge of infringement. The closing council makes the same denial; but he insists, at least, by the course of argument, not in direct terms, that if it shall be otherwise determined, still the plaintiffs are not entitled to recover, because, as he contends, the defendant's apparatus, as used in his refinery, was substantially the same as that employed in the Cabot street establishment and that employed in the Northampton street refinery; and that the apparatus there employed was invented and used in those establishments prior to the date of the invention on which the suit is founded. But the court declines to submit any such complicated issue for your consideration. Looking at the pleadings, it is obvious there are two principal issues to be determined; and they are, as before explained: first, whether the assignor of the plaintiffs is the original and first inventor of his alleged improvement; and, secondly, whether the defendant has infringed the patent. Confine your attention, in the first place, to the



question of novelty, and do not suffer the questions to be commingled, as the inevitable effect of that course of investigation is to produce embarrassment and confusion. Persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement, or any art, machine, manufacture, or composition of matter not known or used by others before such discovery or invention, and not, at the time of the application for a patent, in public use or on sale with their consent or allowance, are entitled to a patent.

The proposition of the defendant also is, that the supposed invention, described in the declaration, was not new at the date of the letters-patent, but that the same was well known to various persons employed in the establishment of the Union Linen Company, at Cabot street, and that the same apparatus, or one substantially the same was used prior to the date of Jasper's invention for the purpose of cleansing or bleaching sugar. The evidence shows that the establishment at Cabot street, or the principal interest in it, belonged to the firm of Sampson & Tappan. The theory of the defendant is, that the use of such apparatus was commenced at that establishment the latter part of May, 1861, and that the use was continued there throughout that year, and until the proprietors broke up the establishment and removed to Northampton street, in January of the following year. They commenced to move from Cabot street to Northampton street in December, 1861; and the theory of the defendant is, <sup>692</sup> that the same apparatus was used in that sugar refinery as early as the latter part of February following. The ground assumed by the defendant is, that the apparatus was invented, constructed, and put in operation at both these places by George B. Evans, or under his superintendence and direction, and that he continued to use it at the

latter place, sometimes with water, sometimes with liquor, under varying circumstances, as detailed in the testimony of the witnesses, from the day the proprietors of that refinery commenced operations at that place, to the date of the alleged invention made by the assignor of the plaintiffs, and to a much later period. Parties defendant in a suit like the present are permitted to plead the general issue, and to give certain special matters in evidence of which notice in writing may have been given to the plaintiff or his attorney thirty days before the trial. Take, for example, the case under consideration. The defendant might give notice, in writing, that he would offer evidence to prove that the assignor of the plaintiff was not the original and first inventor or discoverer of the thing patented, or the substantial and material part thereof claimed as new. But the same section of the patent act requires, that whenever the defendant relies in his defence upon the fact of the 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 the prior knowledge, and when and where the same had been used. Both parties were desirous of coming to the trial of this case at the regular session held here in May last; but the cases having precedence on the docket prevented the court from complying with their request. Unable to grant their request for an immediate trial, on account of the near approach of the regular session of the court in another district of this circuit, the court, at the request of the parties, assigned the case as the first to be tried at the special session of the court to be held on the 4th of September, which was ordered in part to accommodate the parties in this suit. They accordingly appeared, and on the morning of the day when the trial was to have been commenced, the affidavit of George E. Evans was presented to the court by the defendant

The statement of the defendant was that he was ready to go to trial if the plaintiffs would waive the statute requirement of thirty days' written notice of defence; but inasmuch as the plaintiffs declined to waive this requirement, and inasmuch as no such notice had been given, the case was continued until the present term, to enable the defendant to give that notice. Such notice was afterwards given, and the witness, George E. Evans, has been fully examined in the case. His testimony has been the subject of comment by both sides, and in the course of those comments certain material parts of it have been very carefully reviewed. The argument for the defendant is, that this testimony proves that the apparatus described in the patent, as construed by the court, was invented and constructed by the witness, in the form of an operative machine, at the establishment in Cabot street, as before explained, and also at the Northampton street sugar refinery, for three months before the assignor of the plaintiffs had reduced his supposed invention to practice as an operative machine, or had any definite knowledge of its actual mode of operation. The views of the plaintiffs are, that these statements of the witness are all founded in error: that he never invented anything pertaining to the patented invention, and that he never constructed or used any such apparatus as he pretends, at the establishment in Cabot street at any time, nor at the sugar refinery in Northampton street until some time after the assignor of the plaintiffs made the patented invention, and the same has been successfully reduced to practice as an operative machine at the establishment of the Union Sugar Refinery, at Charlestown, in this district.

Witnesses are presumed to speak the truth; but experience shows that they are often in error, and that sometimes they are false; and the rule is, that whenever their truthfulness is called in question, the

jury are to judge of their credibility under the instructions of the court. Regarding the matter in that light, the defendant has called your attention to several general considerations which, as he insists, have a strong tendency to support the witness, and to the testimony of the other witnesses in the case I who have testified to any material facts or circumstances confirmatory of his statement. On the other hand, the plaintiffs assail the truthfulness of the witness, and insist that he is mistaken, or has sworn falsely, and that the witnesses called to confirm his statements are mistaken as to dates; and that, in point of fact, there was no attempt to liquor sugar according to the plan of the patentee, until long subsequently to the time when he had put his invention in practice at the establishment of the plaintiffs. They (the plaintiffs) contend that he is contradicted by so many witnesses, and by such incontrovertible facts and circumstances, that you ought not and cannot believe his testimony. When falsehood is imputed to a witness, the question is always for the jury; and the rule is, that if they find he has wilfully sworn falsely as to a fact material to the issue, they are at liberty, if they deem it proper to do so, to disbelieve everything he has stated in the case. The correctness of that rule is admitted by the defendant, and he asks that it may be applied to some of the plaintiff's witnesses. In order to defend the witness, George E. Evans, against the charge of falsehood, he (the defendant) makes the same charge against the president of the plaintiffs' corporation, the patentee, and the 693 senior member of the firm of Sampson & Tappan, who was one of the principal owners of the two establishments to which reference has been made.

Where there is a conflict of testimony, It is the duty of the jury to reconcile it, if they can reasonably do so; but if they cannot reasonably reconcile it, and are obliged to come to the conclusion that it is false on the

one side or the other, then it is their duty fearlessly to determine, if they can, where the truth lies. Doubts on this issue must weigh in favor of the plaintiffs, because the burden of proof is upon the defendant. Looking at the whole evidence, perhaps you will come to the conclusion that there is reason to believe that a valuable invention has been made by some one at some time, and it is not going too far to say, that the issue most strenuously contested in the trial has been whether it was actually made by George E. Evans or the assignor of the plaintiffs. The apparatus of William P. Breck and the foreign patents must not be overlooked. They will be brought to your notice in due season; but the several propositions of the parties to such a controversy cannot all be considered at the same moment. The theory of the plaintiffs is, that the invention was made by their assignor; and one theory of the defendant is, that it was made by his principal witness. Experience shows that much light is often derived in endeavoring to ascertain the truth from a mass of testimony, by looking with careful scrutiny at the conduct of the parties whose acts are called in question or are the subject of inquiry.

The patentee applied for a patent, and the same was granted to him; and he has since been engaged, as he has testified, in perfecting the invention. The date of the patent is the 27th of January, 1863, and it does not appear that George E. Evans set up any claim as the inventor of the improvement prior to the 1st of September last, when he gave his affidavit. Weigh this circumstance, and give it such consideration as you think it deserves, bearing in mind that inventors are not obliged to apply for a patent or to make known the result of their inventions. Inventions ought not to be supported by false testimony, and letters-patent ought not to be broken down by any such means. Courts of justice are supposed to be able to investigate such an issue and ascertain the truth; and the court feel it to

be their duty to urge you to apply your best powers to the accomplishment of that object. Examine the testimony of George E. Evans, and see if you have any reason, and if so, to what extent, to doubt his veracity, giving due weight to everything adduced in evidence to confirm his testimony. Carefully examine, also, the testimony of the proprietors of the establishments where he was employed, and of the president of the plaintiffs' corporation, and of the patentee, and of all the other witnesses who have testified to facts or circumstances confirmatory of their statements, and decide whether you have any, and if any, what reason to disbelieve what they have testified.

The suggestion of the defendant is, that the testimony of the witnesses for the plaintiffs on this issue is merely negative, and that the affirmative statement of a witness as to what he saw and heard is entitled to more credit than the negative statement of another witness that he did not see or hear the same thing. Unquestionably, the rule is so, where the testimony of a witness called to contradict an affirmative statement is merely negative; and it is for your consideration whether the testimony of the plaintiffs' witnesses as to what was or was not done at Cabot street or Northampton street is really negative. The testimony of the president of the corporation is, that he was the commission merchant, the agent who furnished the proprietors with all the raw material,—some sugar, some melado, some molasses,—all the raw material for the manufacture of the sugars made in those establishments. The first stock furnished, as he states, was for the purpose of experiment on the open pan, which he particularly describes. Having authorized the experiment, he visited the place, sometimes two or three times a week, and sometimes daily, and oftener, for the purpose of watching the experiment, and of seeing if it was likely to be successful. The statements of the proprietors of

the establishment are, that they were there, one or both of them, at the same time, and they substantially concur in the statements of the president of the corporation. Other witnesses are called who had occasion to visit the establishment, and who had an opportunity to know if any apparatus was used there as the defendant assumes was used, and they all deny that they ever saw anything of the kind.

Severe criticism is made by the defendant upon the senior partner of the firm, whose members were the principal proprietors of those establishments. The witness admits that he was mistaken as to the date of the first attempt of George E. Evans to cleanse or bleach sugar with liquor in a centrifugal machine; and he also admits, that while he was under that erroneous impression as to the date, he stated that the operations of defendant's witness were prior to the alleged invention of the assignor of the plaintiffs. Mistakes as to dates are of frequent occurrence, even with honest witnesses, and where it satisfactorily appears that it was without intentional error, the fact that such mistake was made is not entitled to much weight, as affecting the credit of the witness. Intentional misstatements on the part of a witness, if material to the issue, are as much perjuries as any other species of false swearing. Examine the testimony of the witnesses, in view of this explanation, and determine for yourselves whether the contradictory 694 statements of the witness do really affect his credit.

Certain other testimony is introduced by the defendant to prove what he stated to the witness, and to some one or more of the party who accompanied him in the visit to the counting-room of the witness, subsequent to the special session of this court on the 4th of September last. Those contradictions are in evidence, and are for your consideration. Such contradictions do not tend to prove the disputed fact, and are only admitted as affecting the credit of the

witness; and you should keep in mind his explanation, that he did not hear the affidavit read, and that he was still in error as to the date of the experiment made by the witness for the defendant. Subsequently, as he states, he examined certain letters, written by himself at that time, and saw the bill of the first sugar—of the 26th of August—purchased for the making of liquor, and became fully convinced that he was in error as to the date. Plainly, these explanations ought to have weight, in connection with the contradictory evidence, and it is for you to say whether or not they are satisfactory. Consider for a moment what the mistake was which he affirms he made, and perhaps it will aid you in coming to a right conclusion. According to his testimony, he made no mistake as to anything which occurred at Cabot street, because he still affirms, in the most positive terms, that he has no knowledge of any such experiments being made there as are described in the testimony of the principal witness of the defendants. His mistake, as he states, was as to what occurred in Northampton street, in the experiments made there with the sugars purchased and sent there for that purpose by Mr. Holden, or the president of the plaintiffs' corporation. The plaintiffs admit that such experiments were made at that refinery, and one of the questions in controversy between the parties is, when they were made. The error of the witness, as he states, was as to that date, and his testimony now is, that it was subsequent to the invention described in the declaration. The patentee states that he commenced his operations for starting a sugar refinery in Charlestown in April, 1862, and gives a detailed statement of the various experiments which he made before he arrived at the patented result. The repetition of these experiments is unnecessary, as they have been the subject of comment on both sides.

The first experiments were made with a barrel of sugar which he obtained from the East Boston house,



and on the 8th of May, 1862, he procured another barrel of sugar from the same place for a similar purpose. His idea was, as he states, at that time, to run the sugar through the centrifugal machine, and after the syrup was thrown out, to remove the mass of sugar from the machine, mix it with white liquor, and then ran it through the machine for the purpose of cleansing or bleaching it; but while the product was good, he found he must use too much liquor to allow any considerable profit. Experiments were shortly after made, he says, with a barrel filled with white liquor, but the first result was not satisfactory. Further experiments were made by the witness on the 4th of August, 1862, with the barrel and white liquor, first placing the barrel on the next floor above the basement, and afterwards on the third floor. The result was satisfactory, and he then gave orders for the pipe or hose; workmen commenced putting up the pipe on that day, and the apparatus was completed, as the witness states, in about ten days, so that he commenced using it on the 18th of August of the same year. On the other hand, the defendant denies that the patentee ever made any such experiments with the barrel and white liquor as he has described in his testimony, and has called several witnesses employed in the establishment, who testify that they were at work there at the time, and never saw anything of the kind. The president of the corporation testifies that he was present and saw the experiments made, and witnessed the results; that they used that apparatus for some three months without much change, except that the patentee purchased these sprinklers with many perforations, and used them in the place of the sprinkler with one perforation, as the apparatus was at first constructed. Several other changes were subsequently made in the apparatus, but it is unnecessary to describe them, as they have been the subject of comment at the bar.

As already explained, the patent having been introduced in evidence, affords a prima facie presumption that the patentee is the original and first inventor of what is therein described as his improvement. But that presumption, in the absence of the original application, extends no further back than the date of the patent, and consequently where the patentee, or those claiming under him, allege that the invention was actually made at a time prior to the date of the patent, the burden is upon the party making the allegation to prove the prior date. The allegation of the defendant is, that the assignor of the plaintiffs never made such an invention as is claimed in the present suit; but if you believe the patentee and the president of the plaintiffs' corporation, and find that he did make the invention, you will probably find no great difficulty in determining from the evidence when the invention was made. The theory of the plaintiffs is, that it was made at least as early as the 11th of August, 1862; and it does not appear to be controverted by the defendant, that if the patentee is to be believed, it was made about that time. Assuming it to be so, then you will perceive it was before any such apparatus was used at the Northampton street refinery, as testified by the plaintiffs' witnesses, but after it was used both at the Cabot street establishment 695 and at the Northampton street refinery, as testified by George B. Evans and the several witnesses called to confirm his evidence.

Reliance is also placed upon the testimony of William P. Breck, as showing that an apparatus was used by him like that described in the patent, several months prior to the invention in controversy. The construction of the patent has been given by the court, and In determining what the invention is you will look at the patent, as expounded by the court, and follow the instructions of the court upon that subject. Considering that the model of the Breck

apparatus is before you, and has been the subject of extended comment on both sides, it does not seem to be necessary to enter into any detailed explanation of the machinery. A patented improvement, consisting of old elements, cannot be proved to be invalid by showing some one of the elements in some prior machine, and another in another prior machine, until it is shown that all the elements which constitute the improvement were in prior use, because the theory of such a patent is, that the elements are old, and the invention consists in a new combination, whereby a new and useful result is obtained.

Seven or eight foreign patents are also introduced for the defence, as tending to show that the assignor of the plaintiffs was not the original and first inventor of his improvement, but only two of them were brought to your attention in the closing argument. Proof of the previous invention, knowledge or use of the thing patented, is a good defence against a charge of infringement, under the conditions specified in the patent act. The 15th section, among other things, provides, "that, whenever it shall satisfactorily appear that a patentee, at the time of making his application for a patent, believed himself to be the first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery, or any part thereof, having been before known or used in any foreign country, it not appearing that the same, or any substantial part thereof, had before been patented or described in any printed publication." Where there is no evidence to the contrary, the presumption is, that the patentee, at the time of making his application, believed himself to be the first inventor or discoverer of the thing patented. The defence set up is that the invention in controversy had before been patented in a foreign country; and it can only be established by evidence that the invention,

or some substantial part thereof, had before been patented in some foreign country, as alleged.

Under this notice of special matter, the defendant introduced the two patents to which your attention was called in the argument, each as covering the thing patented: First, the patent of John Gwynne. Referring to the specification of the patent, you will observe that it contains some thirty claims; but it will be only necessary to notice the 14th and 15th, as they are the only ones relied upon by the defendant. Of these, the first (the 14th) consists of "the combination, in one machine or apparatus, of the process of separation of crystals from their syrup or mother liquor, and the washing and drying the same," as described in the specification. The remaining claim is for "the system or mode of washing or cleansing the crystals, or other solid matters treated in centrifugal machines, as hereinbefore described." The elements of the apparatus are described in the specification, but inasmuch as the model is before you, it does not seem to be necessary to reproduce them in the summing up. The patent of De Costa, of the 12th of December, 1854, which is a foreign patent, was also introduced. Three claims of the patent were adverted to by the counsel for the defendant. They are the 4th, 5th, and 7th, as given in the translation introduced in evidence. The 4th claim is for "the various means and methods for introducing the liquor from below, either by two concentric tubes or by a single tube through holes of all sorts of shapes, spirally or obliquely placed at various points, and particularly at the upper part of the central shaft." The 5th claim is for "the new method of crystallizing, moulding, and liquoring every shape of sugar-loaves that have a hole through the middle, and that are liquored by centrifugal force, according to the method indicated" in the specification. The 7th claim is for "the use of the pump described, of whatever form, dimension, or material."

A repetition of the description of the elements of the apparatus would be of little aid to you in your investigation, as the model is in the case and has been the subject of careful comment at the bar; one of the experts, in speaking of the apparatus, says that the means which the patentee clearly contemplated, as far as he could judge, was to give a cover to the centrifugal, so as to enclose it, and keep its contents inside of it securely, and to assist in keeping the machine from trembling, by furnishing another bearing to the shaft. The machine being covered, he further infers that the operator cannot get at the inside to act upon anything within it, while it is in motion; and his opinion was, that the machine was designed to wash whatever was put into it, whether beet pulp or anything else; and that, in order to get the washing fluid into it, the inventor intended to get it up by means of a pipe through the body of the machine, and discharge the fluid through perforations in the pipe inside. Working in that way, it is his opinion, that it could not produce the operation of the invention in controversy,—first, because there is no indication that pressure is to be used; second, because there is no provision by which the nozzle can be held close up to the mass to 696 be cleansed, so that the streams can be discharged distinctly and with force upon the material to be treated; and third, because there is no provision whatever by which the liquor can be applied equally over the mass, or in any manner, under the direction of the operator. Recommending these suggestions to your careful examination, it is unnecessary to say more, except to remark that we think you ought not to come hastily to the conclusion that the patented improvement in this case is superseded by either of these foreign patents.

The jury have a right to adopt such order of inquiry as they see fit; but it is suggested as a convenient order that you inquire and determine, in the first

place, whether George E. Evans invented, constructed, and used such an apparatus as is described in his testimony, either at the establishment in Cabot street or at the sugar refinery at Northampton street, before the date of the invention of the assignor of the plaintiffs. Such order of investigation would be convenient, because, if you find that he did not, then you need not proceed any further in that inquiry, so far as what he did is concerned. But if you find he did construct and use the apparatus described in his testimony, before the date of the patented Invention, you will then proceed to inquire whether he reduced it to practice as an operative machine.

Courts of justice have established the rule, that crude and imperfect experiments, equivocal in their results, and then abandoned and given up, shall not be permitted to prevail against an original inventor who has perfected his improvement and obtained his patent. The settled rule is, that it is not enough to defeat a patent to show that another conceived the possibility of effecting what the patentee has accomplished, unless it also appears that he reduced what he conceived to practice in the form of an operative machine. To constitute a prior invention, he who is alleged to have produced it must have proceeded so far as to have reduced his idea to practice, and embodied it in some distinct form. Consequently, you are instructed, that if what you find to have been done by any one before the date of the patented invention, as established by the evidence, did not amount to a successful reduction to practice of the mode of operation described and claimed in the patent for cleansing or bleaching sugar, then such acts of experiment do not have the effect to invalidate the patent. Governed by these instructions, if you find that what was done by George E. Evans prior to the date of the patented invention in the manufacture of sugar, did not amount to a successful reduction to practice of the mode of operation

described and claimed in the patent for the cleansing or bleaching of sugar, then you need not proceed any further in the examination of the evidence in this branch of the case, as it is clear his experiments afford no defence.

Believing that in any view you may take of the evidence, you will find it necessary to compare the Jasper apparatus, as described in the patent and expounded by the court, with the apparatus which George E. Evans testified he constructed at Cabot street and at Northampton street, and perhaps with the apparatus of William P. Breck, and those described in the two foreign patents to which your attention has been called, we will next proceed to give you the necessary instructions applicable to such inquiry.

Proceeding to such inquiry, you are instructed that whether the apparatus described by George E. Evans in his testimony, or that described by William P. Breck, if you find that he employed it, or either of those described in the foreign patents, is substantially the same as the patented invention, as expounded by the court, is a question of fact for you to determine, under the instructions of the court. In determining that question, you are not to determine about similarities or differences merely by the names of things; you are to look at the machines and their several devices and elements in the light of what they do, or what office or function they perform, and how they perform it; and to find that a thing is substantially the same as another if it performs substantially the same function or office in substantially the same way, to attain substantially the same result; and that the things are substantially different when they perform different duties in substantially a different way, or produce a substantially different result.

For the same reasons you are not to judge about similarities or differences merely because things are apparently the same or apparently different in shape

or form; but the true test of similarity or difference in making the comparison is the same in regard to shape or form as in regard to name, and in both cases you must look at the mode of operation,—the way that the parts work, and at the result, as well as at the means by which the result is attained. In all your inquiries about the mode of operation of other machines, you are to inquire about and consider more particularly those portions of the particular part or element which really do the work, so as not to attach too much importance to the other portions of the same part which are only used as a convenient method of constructing the entire part or device. You will regard a well-known substantial equivalent of a thing as being the same as the thing itself; so that, if two machines, having the same mode of operation, do the same work, in substantially the same way, and accomplish the same result, they are the same. And so, also, if the parts of two machines, having the same mode of operation, do the same work, in substantially the same way, and accomplish substantially the same result, those parts are the same, although they may differ in name, form, or shape. But in both cases, if the two things perform 697 a different work, or in a way substantially different, or do not accomplish the same result, then they are substantially different.

Applying to the case the several instructions given by the court, you will inquire and determine whether the assignor of the plaintiffs is or is not the original and first inventor of the invention described in the patent, as expounded by the court. Should you find from the evidence that he is not the original and first inventor of the improvement, then you need not proceed any further, but your verdict should be for the defendant. But if you find that he was the original or first inventor of the improvement, as alleged in the declaration, then you will proceed to consider the issue of infringement.



The charge of infringement is made by the plaintiffs, and the burden of proof is upon them to prove the allegation to your reasonable satisfaction. But in considering that question, you will assume, if you have previously so found, that the assignor of the plaintiffs is the original and first inventor of the improvement described in the patent, as expounded by the court. Counsel sometimes strive, in the trial of a cause, to blend the questions of infringement and novelty together, as jointly and interchangeably involved in every phase of a lawsuit for the infringement of a patent. Undoubtedly, they involve the same considerations, but each also involves several considerations not involved in the other. The burden of proof in one case is upon the plaintiffs; the burden of proof in the other is upon the defendant; and the evidence required to support one and the other is very different. Whether the apparatus used by the defendant during the period covered by the declaration, infringes the invention made by the assignor of the plaintiffs, as the same is expounded by the court, is a question of fact for your determination, from all the evidence in the case, under the instructions of the court. The material facts on this branch of the case lie in a narrow compass. The declaration alleges that the infringement commenced, as before stated, on the 2d of November, 1863, and continued from that day to the 16th of January following, which is the date of the writ. The defendant concedes that he constructed and used, or caused to be constructed and used, in his sugar refinery, an apparatus such as is represented in the model introduced into the case; and, substantially, the testimony of Alexander A. Sanborn, called by the plaintiffs, is that the defendant desired him to put up a liquoring apparatus for him, to be used for liquoring with white sugar, the same as he had previously put up for the inventor while in his employment. The witness

stated that it was fitted up accordingly; that he did a part of the work, and that the rest was done by other workmen, under his direction; that they placed the tank for the liquor on the fourth floor above the machine, giving thirty-two or thirty-five feet height of column as means for causing pressure at the nozzle. Instructions have already been given you on another branch of the case, presenting certain general rules of law by which you are to be governed in comparing one machine or device with another, to enable you to determine whether, in legal contemplation, the two machines are substantially the same or different; and those instructions are equally applicable to the present question with reference to the pressure apparatus of the defendant; but, considering the nature of the inquiry, we think it necessary to give you more specific instructions by which you will be governed in applying those general rules of law to the question under consideration. In examining that question, you will find it necessary to keep constantly in view the instructions of the court as to the construction of the patent on which the suit is founded, else you will be liable at every step to fall into error. By the true construction of the patent, the invention consists of an apparatus of described means for the purpose of cleansing or bleaching sugar with liquor, as set forth in the specification. What those means are, the instructions already given will enable you to understand with clearness and certainty; and if the defendant in his machine used, during the period covered by the charge of infringement, substantially the same means, operating substantially in the same way, and accomplishing substantially the same result, then you are instructed that the defendant's machine infringes the patent on which the suit is founded; and if you also find that the assignor of the plaintiffs was the original and first inventor of the improvement then your verdict will be for the plaintiffs. But if you

find that the defendant in his machine used during that period substantially different means, or that the means so employed did substantially different work, and in a mode of operation substantially different, then you are instructed that the defendant's machine or apparatus does not infringe the patent described in the declaration, and your verdict will be for the defendant.

The patent declared on is not for the result, but for the means, as substantially described in the specification, for accomplishing that result. The defendant is right also, in the proposition that the claim of the patent is not for every means of cleansing or bleaching sugar with liquor, but only for the means the patentee has substantially, described in his specification for accomplishing that result. Lest any mistake, however, should arise, we repeat that the patentee cannot invoke the doctrine of equivalents to suppress all other improvements of the old apparatus or machine, but he is entitled to treat every one as an infringer who makes, uses, or vends his patented machine, without any other change than a common substitution for one of its elements, well known as such, and which any constructor, without any more experiment, or 698 resorting to invention, knew how to employ. Pursuant to that qualification of the general rule, as explained, you are instructed, that if you find from the evidence that the means of causing pressure at the nozzle used by the defendant were, at the date of the invention and of the patent, commonly known to be a substitute for the means of causing pressure at the nozzle which are particularly described in the specification, and that, consequently, those skilled in the art to which the invention appertains, or with which it is most nearly connected, could, by the use only of the knowledge which they had as constructors, substitute the mode of producing such pressure practised by the defendant for the mode particularly described in the specification, and that, when thus

substituted, it was capable of performing, and would perform, substantially the same mode of operation as the mode of operation described in the patent, then the defendant cannot successfully defend himself against a charge of infringement, merely by employing this substituted mode of producing pressure. Whether the means of causing pressure at the nozzle used by the defendant were, at the date of the invention and of the patent, commonly known to be a substitute for the means of causing pressure at the nozzle which are particularly described in the specification, is a question of fact for you to determine, from all the evidence in the case. Should you find that the defendant's means of causing pressure at the nozzle were, at the time supposed, commonly known to be a substitute for the means of causing pressure at the nozzle which are particularly described in the specification under consideration, you will then inquire whether those skilled in the art to which the invention appertains, or with which it is most nearly connected, could, by the use only of the knowledge which they had as constructors, make the proposed substitution; and if you also answer that inquiry in the affirmative, you will then proceed to the remaining inquiry of fact involved in the instructions to which the two preceding relate. The remaining inquiry involved in that instruction is, whether the substantial means or mode of producing pressure, when thus substituted as proposed, is capable of performing, and will perform, the same function in the same mode of operation, as the mode of producing pressure particularly described in the specification of the patent; and if you answer this inquiry in the affirmative, as well as the two others preceding it, then you are warranted in finding that the difference in the means of causing pressure at the nozzle in the two machines, as compared with each other, is a mere formal one, and that the difference in that respect is not such as of itself, without more, will

enable the defendant successfully to defend himself against the charge of infringement.

Carrying out the views of the court expressed in construing the patent, you are instructed that the patent is not limited to any arbitrary mathematical amount of pressure, but that it calls for and contemplates such a degree of pressure as is capable and sufficient to effect substantially the described object of the patentee, to drive the cleansing liquor or syrup with such velocity into the sugar, while in revolution, as to prevent such sugar from being melted at the surface of impingement; and if the apparatus, as constructed and used by the defendant, was capable of exerting and would exert this degree of force in substantially the same way, his apparatus, in this particular, was within the patent.

Adopting these instructions as the law of the case upon the subjects to which they relate, you will examine the whole evidence upon the question of infringement and determine whether the apparatus of the defendant, as used by him during the period covered by the declaration, infringes the patented invention, as the patent has been expounded by the court. If you find that the apparatus of the defendant, as used as aforesaid, does not infringe the patented invention, as expounded by the court, your verdict should be for the defendant; if you find it does infringe the patent as alleged in the declaration, then your verdict should be for the plaintiffs, and you will proceed to the question of damages.

Suffice it to say, upon the subject of damages, that if you find for the plaintiffs, they do not claim more than nominal damages, as the main purpose of the suit is to establish the validity of the patent. Your verdict if for the defendant, will be that he is not guilty; if for the plaintiffs, that the defendant is guilty, and you may assess damages in the sum of one dollar, which is the more usual sum in this court where the verdict is for

nominal damages. Under the circumstances of the case, we do not think it necessary to remark further upon the subject, except to say that in general the claim for damages in cases of this description is no test of the importance of the controversy. Parties coming into this court, as in all other similar tribunals, have a right to expect that justice will be administered according to the law and the evidence, and it is the duty both of the court and the jury to fulfil their just expectations in that behalf.

The jury then retired for deliberation, and remained out until the next morning.

The court came in at ten o'clock, and, by direction of the presiding justice, the jury were summoned to the room.

CLIFFORD, Circuit Justice (charging jury). One member of the court received a note from your foreman this morning, which was very properly framed, but yet the question put was one which, in the view of the presiding justice, could not be answered either way without danger of misleading you. In other words, it required an explanation which the presiding justice thought, inasmuch as the court had adjourned, and his 699 associate justice was not present, he did not possess the authority to make. Hence he found it necessary to request you to remain in session. It would have afforded me the greatest pleasure to have relieved you, if I had thought I could properly do so. I may express the opinion here, and I have no doubt that every one of you will concur in that view, that it is better that the members of the court, and even the jury, should suffer considerable inconvenience, than that the slightest irregularity should be introduced into the proceedings of this court. They have gone along since the commencement of the government until the present time without irregularities, and it is very desirable that that course should continue. In view of these circumstances I felt constrained to return the

answer that the presiding justice could not answer the question directly, without explanation, and that he did not feel at liberty to give this explanation in the absence of his associate, inasmuch as the court had adjourned.

Two passages from the charge already delivered to you, carefully noted and understood, will afford you the necessary explanation upon the matter of inquiry, and it will afford you as specific an answer as it seems to be competent for the court to give, because the matter of inquiry is a mixed question of law and fact. Hence the reason why a direct answer could not safely be given, lest it should mislead.

“Lest any mistake should arise, we repeat that the patentee cannot invoke the doctrine of equivalents to suppress other improvements of the old apparatus or machine, but he is to treat every one as an infringer who makes, uses, or vends his patented improvement without any other change than a common substitution for one of its elements, well known as such, and which any constructor without any experiment or resort to invention will know how to employ. Pursuant to that qualification of the general rule (that is, that he cannot invoke the doctrine of equivalents), as explained, you are instructed, that if you find from the evidence that the means of causing pressure at the nozzle used by the defendant were, at the date of the invention and of the patent, commonly known to be a substitute for the means of causing pressure at the nozzle which are particularly described in the specification; and that, consequently, those skilled in the art to which the invention appertains, or with which it is most nearly connected, could by the use only of the knowledge which they had as constructors, substitute the mode of producing such pressure practised by the defendant, for the mode particularly described in the specification, and that, when thus substituted, it was capable of performing and would perform substantially the same

function, in substantially the same mode of operation, as the mode of operation described in the patent, then the defendant cannot successfully defend himself against the charge of infringement merely by employing this substituted mode of producing pressure.”

There the principle is laid down. Now you are referred to the evidence. So far as it is a question of law, the court has decided that; you will receive that as law.

“Whether the means of causing pressure at the nozzle used by the defendant were, at the date of the invention and of the patent, commonly known to be a substitute for the means of causing pressure at the nozzle, which are particularly described in the specification, is a question of fact for you to determine from all the evidence in the case. Should you find that the defendant’s means of causing pressure at the nozzle were, at the time supposed,—that is, at the date of the invention and the patent,—commonly known to be a substitute for the means of causing pressure at the nozzle, which are particularly described in the specification under consideration, you will then also inquire, as a matter of fact, whether those skilled in the art to which the invention appertains, or with which it is most nearly connected, could, by the use only of the knowledge which they had as constructors, make the proposed substitution. And if you also answer that inquiry in the affirmative, you will then proceed to the remaining inquiry of fact involved in the instruction to which the two preceding relate. The remaining inquiry of fact involved in that construction is, whether the substituted means or mode of producing pressure, when thus substituted, as proposed, are capable of performing, and will perform, the same function, under the same mode of operation, as the mode of producing pressure particularly described in the specification to the patent. And if you answer this inquiry in the affirmative, as well as the two others preceding it,



then you are warranted in finding that the difference in the means of causing pressure at the nozzle in the two machines, as compared with each other, is a mere formal one, and that the difference in that respect is not such as by itself, without more, will enable the defendant successfully to defend himself against the charge of infringement.”

Unable to conceive that any command of language which we possess could make the matter clearer than it is there stated, we do not think it our duty to attempt to add anything to it; and you will please retire with this explanation, and with the kindest spirit towards each other, and an anxious desire to end this controversy, compare your opinions afresh, and see if you cannot agree upon a verdict.

The jury then retired, and remained out about half an hour, when they again entered the court-room, and the usual question was put by the clerk: “Gentlemen of the jury, have you agreed upon a verdict?” 700  
Foreman. We have not

The Court Mr. Foreman, is there any prospect of an agreement?

Foreman. There is no hope of a verdict from this jury.

The Court. Is the difference between you law or fact?

Foreman. I conceive it to be law. There is a difference of opinion upon that point even.

The Court. Is the subject of difference the one embraced in the instructions re-read to you this morning?

Foreman. I think so.

The Court. We do not see that we can make that matter more explicit, than we have already done. You have already been instructed that questions of law belong to the court, questions of fact to the jury; but the subject-matter of that instruction, and the questions involved in that instruction, being mixed

questions of law and fact, the court without the jury cannot determine them, and the jury without the court cannot determine them. It requires both court and jury to determine them. If, in that view of the subject, Mr. Foreman, you are of opinion that there is no hope of agreement, you will rise and say so.

Foreman. Perhaps, if we could be enlightened upon a single point, we might agree.

The Court. You may state the point as clearly as you can

Foreman. Whether we are to try the Matthiesson apparatus, as we have had it before us, at thirty-five feet, or whether we are to vary from that in any conceivable, manner.

The Court. The question propounded by the foreman is one purely of fact, so that it would not be possible for the court to render you any assistance. The evidence in the case is before you, and if you are of the opinion, Mr. Foreman, that further deliberation would result in no practical utility, and that there is no hope of agreement without the court give further instructions, you may answer

Foreman. I think not, that was not the precise point we differed upon, but I suppose, by working from that, if we could get instructions upon that, we might arrive at a verdict; but I don't think it would be possible without it.

The Court. Consult with your fellows, and see whether they think it is worth while to retire again. You have now been out sixteen hours and a half, and I have no idea of resorting to the old barbarous mode of starving a jury to an agreement.

Foreman (after consultation with his associates). There is no use, sir.

The Court. The court regrets that you are unable to come to an agreement; but at the same time we feel that we ought to return thanks to you for the patient effort you have made, during a long period,

without complaint, to reach a satisfactory result. You have had a weary service of three weeks, and, under the circumstances, the court will excuse you from any further attendance until the first Tuesday in February next.

{For further proceedings, see Case No. 14,398.}

<sup>1</sup> {Reported by William Henry Clifford, Esq., and by Samuel S. Fisher, Esq., and here compiled and reprinted by permission. The syllabus and opinion are from 3 Cliff. 639. and the statement is from 2 Fish. Pat Cas. 600.}

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