

HANCOCK INSPIRATOR CO. *v.* JENKS.

*Circuit Court, E. D. Michigan.* February 11, 1884.

## 1. PATENTS FOR INVENTIONS—AMENDED APPLICATION—VERIFICATION—ACT OF 1836.

Where a patent, issued on a supplementary or amended application, under the act of 1836, upon its face recites that “the patentee has made oath to his application,” this recital, in the absence of fraud, is conclusive evidence, in a suit against an infringer, that the necessary oath was taken by the applicant before letters patent were granted.

## 2. SAME—COMBINATION—CLAIMS.

The claims for a combination patent need not include any elements except such as are essential to the peculiar combination and are affected by the invention.

## 3. SAME—CONSTRUCTION OF CLAIMS.

While a patentee is limited by his claims, courts are allowed to look at the detailed specifications, models, or drawings, for the purpose of construing such claims.

## 4. SAME—UTILITY OF DEVICE—INFRINGEMENT.

In a suit for infringement, that plaintiff’s device is a useful one is sufficiently shown by the fact that, with other devices open to him, defendant prefers to use the mechanism patented by plaintiff.

## 5. SAME—HANCOCK BOILER INJECTOR—PATENTABILITY—ANTICIPATION—INFRINGEMENT.

Letters patent No. 86,152, granted January 26, 1869, to John T. Hancock, for an improvement in boiler injectors, construed, and *held*, that the device therein described was a patentable invention, not anticipated by prior devices, and that the first and second claims thereof are infringed by the “duplex injectors” manufactured, sold, and used by defendant.

Per BROWN, J.

## 6. SAME—REHEARING—RUE PATENT.

On rehearing, and comparison of the Hancock and Rue patents, *held*, that the latter did not anticipate the Hancock injector.

Per MATTHEWS, Justice; Brown, J., concurring.

In Equity.

This was a bill to recover damages for an infringement of letters patent No. 86,152, dated January 26, 1869, to John T. Hancock, for an improvement in boiler injectors. The bill recited, in the usual form, the grant of letters patent, the introduction into general use of the patented device, both by the patentee and the plaintiff, the assignment of the patent to the plaintiff, the infringement of the same by the defendant in the manufacture, sale, and use of "duplex injectors," so called, and prayed for an account, a decree for profits and damages, and for an injunction. The answer denied, for various 912 reasons, the validity of the plaintiff's patent, and also the infringement by the defendant.

*Elmer P. Howe and Chauncey Smith*, for plaintiff.

*T. S. Sprague*, for defendant.

BROWN, J. The main object of all boiler injectors is to raise water by means of a vacuum, created by the condensation of steam, and to force the water so raised into the boiler from which the steam originally issued. The general construction of all these devices is much the same. The principal features of each are common to all. They consist of an upright tube, through which the water is raised into a chamber at the top, in which a vacuum is created; a second tube at right angles to the first, provided with a conical nozzle of small diameter, through which the steam is driven with great velocity against the water rising from the first tube. The effect of the steam-jet is—*First*, to produce a vacuum in the chamber, about the nozzle, which is filled by the uprising water; and, *second*, to drive this water into the boiler. In so doing it is itself condensed, and returns with the water to the boiler, from which it issued. The success of these devices is dependent very largely upon the separation, as far as possible, of the water and steam up to the very point where they come in actual contact. The maximum of efficiency is attained when the jet of

steam retains the same temperature which it had when it issued from the boiler, and when the water to be acted upon is as cool as possible. The pressure, and consequently the velocity, of the propelling jet of steam is then at its maximum. In both injectors and ejectors, which differ from each other mainly in the use to which they are put, and not materially in their construction, the jets may be reversed; that is, the steam may take the place of the water in the annular chamber, and a jet of water be propelled through the conical nozzle. In all devices prior to the plaintiff's, the water was allowed to circulate for a greater or less distance about the nozzle through which the steam rushed. The effect of this was twofold: *First*, to cool the steam somewhat before it left the nozzle, and thereby diminish its velocity; and, *second*, to heat the water, and thereby diminish its condensing power after it came in actual contact with the steam. To remedy this defect was the object of Hancock's invention, which consists principally in substituting, for the conical nozzle ordinarily used, a plate or plug with an orifice, and some other trifling changes incidental thereto. In the specifications the device is described as follows:

“In the drawings, A. A represent a cylinder, with induction pipe, B, at right angles with A, the pipe, B, being connected with the source of power. C is a concentric tube, smaller than A, which is placed within, and firmly attached at one end to A. The bore of this tube, C, is conical from *d* to *e* and from *d* to *g*. E is a plug closely fitted into A at the end opposite C. This plug has a central, conical orifice, K, which presents an area at its inner face similar in size to the area of tube, C, at *d*. This plug is provided on its inner face with the annular recess, *n, n*, thus providing a passage-way for the motor 913 to the bore of tube, C. The face of tube, C, at *e* is in the same plane with the edge of orifice, K, in plug, E, or nearly so. When

the plug, E, is in position in cylinder, A, as shown, the annular recess, *n, n*, on its face becomes a continuation of the space, *m, m*, which surrounds tube, C.”

The claims of the inventor are:

(1) The combination of plug, E, with orifice, K, and the tube, C, with the chamber, *e d*, when they are located relatively to each other, substantially as described; (2) the plug, E, with orifice, K, and tube, C, with the chamber, *e d*, and chamber, *d g*, as described; (3) the combination, with the above, of the tube, D, substantially as described.

Defendant is charged with infringing the first two claims.

A preliminary objection was taken to the validity of the patent, upon the ground that it appeared from the records of the patent-office that the supplementary or amended application upon which the patent was granted was verified, not by the oath of the patentee, but by that of his attorney. Section 6 of the act of 1836, under which this patent was granted, provides that the patentee shall deliver a written description of his invention or discovery in full, clear, and exact terms, and shall particularly specify and point out the improvement which he claims as his own invention or discovery. The descriptions and drawings shall be signed by the inventor and attested by two witnesses. The same section also requires that the applicant shall make oath that he does verily believe himself to be the first inventor or discoverer of the art, machine, composition, or improvement for which he solicits the patent. It has apparently become the practice for an attorney acting for the inventor, if the claims of the latter are rejected from any cause by the commissioner, to examine the case in view of the reasons given for such objection, and amend the specifications and claims without the knowledge of the inventor, and request a re-examination. The seventh section of the same act, after defining the duty of the commissioner

in case he rejects an application, enacts that “if the applicant, in such case, shall persist in his claims for a patent, with or without any alteration in his specification, he shall be required to make oath or affirmation anew, in manner as aforesaid.” It is argued in this connection that all these mandatory provisions of the act must be complied with before the commissioner of patents can take jurisdiction in the case. But conceding that the commissioner has no authority to receive the oath of the attorney to the supplementary application, there are two answers to the proposition that the patent is thereby rendered void:

(1) There is nothing in the act requiring this oath to be in writing, and, notwithstanding the existence of the supplementary application, verified by the attorney, it is possible that the patentee appeared personally before the commissioner and made the requisite oath in his presence. The commissioner, having general jurisdiction of the subject, is presumed to have complied with all the requirements of the law before issuing the patent. Indeed, the courts have gone so far as to <sup>914</sup> hold that the presence in the files of the patent-office of a paper purporting to be an oath, but void for want of a jurat, will not defeat the patent. *Walker*, Pat. § 122; *Crompton v. Belknap Mills*, 3 Fisher, 536; *Hoe v. Kahler*, 12 FED. REP. 117. (2) We have always understood that the judgment of a court having jurisdiction of the parties and of the subject-matter, or the decision of an officer acting judicially, could not be impeached collaterally by showing that such judgment was rendered or judicial act performed upon insufficient testimony, or was even procured by fraud and perjury. So far as this principle is applied to the judgments of a court of record the authorities are very numerous. *Freem. Judgm.* §§ 334–338; *Big. Estop.* 145, 151; *Simms v. Slacum*, 3 Cranch, 300; *Ammidon v. Smith*, 1 Wheat. 447; *Smith v. Lewis*,

3 Johns. 157; *Marriott v. Hampton*, 7 Term R. 269; *Michaels v. Post*, 21 Wall. 398. It is scarcely less frequently applied to the action of a public officer exercising judicial functions, as in granting patents. *Abbott v. Bahr*, 3 Chand. (Wis.) 193; *Jackson v. Lawton*, 10 Johns. 23; *Rubber Co. v. Goodyear*, 9 Wall. 789.

But we think that further discussion of this proposition is rendered unnecessary by the opinion of the supreme court in *Seymour v. Osborne*, 11 Wall. 516, 539. In this case it was claimed that the patent was void because the patentees did not make oath, before the patent was granted, that they did verily believe that they were the original and first inventors of the improvements for which the patent was solicited. The court treated the requirements of the law with regard to the delivering of the written description of the invention, and of the manner and process of making, constructing, and using the same, as conditions precedent to the right of the commissioner to grant the application, as they must appear on the face of the patent, and are always open to legal Construction as to their sufficiency. The same remark was made with regard to the drawings and models; and the further requirement that the inventor shall make oath that he is the original and first inventor, etc. But Mr. Justice Clifford winds up this branch of the case by observing "that extended examination of the question, however, is unnecessary, as every one of the letters patent on which the suit is founded contains the recital that the required oath was taken before the same was granted; and the court is of opinion that those recitals, in the absence of fraud, are conclusive evidence that the necessary oaths were taken by the applicants before the letters patent were granted." Now, in the case under consideration, the patent upon its face recites that "the patentee has made oath to his application;" and we are clearly of the

opinion that we are not at liberty to inquire into the truth of this statement in a suit against an infringer.

In the case of *Childs v. Adams*, 1 Fisher, 189, the bill itself recited the fact that the patentee, who was an alien, had falsely represented himself as a citizen in order to obtain a patent. Eight years afterwards <sup>915</sup> he surrendered the patent, and made oath that he was a citizen of Prance, and obtained a reissue which recited that the original patent was granted to him upon his belief that he was a citizen of the United States, which belief arose from ignorance of the laws of the United States. As the defect in the jurisdiction of the commissioner was thus brought directly before the court upon the plaintiff's own allegation in the bill, of course the court could not avoid taking judicial notice of the fact that the commissioner had no authority to grant the original patent, because of the false suggestion, and of the reissue, because of want of power in the commissioner to grant it eight years after the invention had been in public use.

In *Eagleton Manuf'g Co. v. West, etc., Manuf'g Co.* 2 FED. REP. 774, the patentee died after his original application was made; but he authorized his attorneys to amend the application. At his death their authority ended. They made the amendments in his name without any authority in fact, when the amendment should have been made by his administratrix. This, apparently, appeared upon the face of the patent, and it was held to be fatal. We do not think this case in point, as plaintiff's patent is entirely regular upon its face.

The next objection taken to the Hancock patent is that the claims are for mere aggregations of elements, which, by themselves, perform no duty or functions; that they must of necessity, to compel them to operate or perform any functions of an injector or ejector, be combined and arranged with something else besides the elements named as being combined in either of

the claims. In the examination of defendant's expert, he gives it as his opinion that the combination would not be operative for any use or purpose without the addition to them of an induction tube and a chamber to inclose the tube, C. Now, while it is entirely true that the combination stated in these claims would be obviously inoperative without such induction tube and chamber, still, by adding these elements, the construction would be equally inoperative without a boiler to furnish the steam and a well to supply the water, and a pipe leading to and from the boiler. But, in drawing the claims for a combination patent, we do not understand it to be necessary to include any elements except such as are essential to the peculiar combination, and are affected by the invention. Other portions of the machine are usually shown in the drawings to exhibit their relation to the patented combination, and they are wholly unnecessary to the validity of the claims. Indeed, it is manifest that the more elements introduced into the combination, the easier it would be to evade the patent; since, to sustain a suit for infringing a combination, it must be made to appear that the defendant used every element of such combination, however immaterial it may be. *Vance v. Campbell*, 1 Black, 429.

In this patent the patentee has claimed all that he has invented, and if he had added more it would have been something which was <sup>916</sup> already well known and necessary to its operation, and therefore implied in his claim. While, as observed by Judge Blodgett in *Dennis v. Cross*, 6 Fisher, 138, 141, "probably no principle of patent law is better settled than that the patentee is limited by his claim;" courts are allowed to look at the detailed specifications, models, or drawings for the purpose of construing such claims.

In *Forbush v. Cook*, 2 Fisher, 668, it is said by Mr. Justice Curtis that "it is not requisite to include in the claim for a combination, as elements thereof,



all parts of the machine which are necessary to its action, save as they may be understood as entering into the mode of combining and arranging the elements of the combination." So, in *Loom Co. v. Higgins*, 105 U. S. 580, it was held that, if an improvement of a well-known appendage to a machine is fully described in a specification, it is not necessary to show the ordinary modes of attaching the appendage to the machine. The letters patent are to be read as if the machine and its appendage were present, or in the mind of the reader, and he is a person skilled in the art. "If a mechanical engineer invents an improvement on any of the appendages of a steam-engine, such as the valve-gear, the condenser, the steam-chest, the walking-beam, the parallel motion, or what not, he is not obliged, in order to make himself understood, to describe the engine, nor the particular appendage to which the improvement refers, nor its mode of connection with the principal machine."

It is usual in the drawings to show the relations of the patented combinations to the other portions of the machinery, but the patentee is not obliged and ought not to claim anything more than such portions of the combinations as are essentially a part of his invention.

We are satisfied, too, that this combination, slight as its apparent departure from other devices is, involves an exercise of the inventive faculty. It consists in substituting, for the ordinary nozzle used in injectors, a plate with an orifice, K, designed to project into the steam-chamber, but not sufficiently far to allow the temperature of either the water or steam to be perceptibly affected either by the other before they meet at the mouth of the combining tube; and in this particular it is obviously different from, if not more valuable than, the other patents which are claimed as anticipations. In the Giffard patent the projection of the nozzle into the chamber is about one and a quarter inches, in the Barclay patent one inch, and in

the Rue patent five-eighths of an inch, while in the Hancock patent it is less than one-sixteenth of an inch. This result is obtained by a construction so different from that adopted in prior devices, that we consider it to be patentable. We think, too, by reference to the drawings, this peculiarity of construction of the plug, E, is made sufficiently manifest to support the claim in the language in which it is couched.

There are numerous patents set up as anticipations of the plaintiff's, but the steam-nozzle used in the original Giffard patent, or some other similar device which permits the circulation of water about the 917 steam-jet, is an element in all, and in that respect they fail to accomplish what is claimed for the plaintiff's patent. Undoubtedly the field upon which Hancock was experimenting to produce his device was, considering the existing state of the art, a pretty narrow one.

All of the prior devices contained nozzles which closely corresponded with the plug, E, and its orifice, A, a chamber, a combining tube with two conical frustrums, and had it not been for the new result produced, it would be difficult to avoid the conclusion that Hancock had been anticipated by prior patents; in other words, that his device was nothing more than a mechanical variation. But that the result he produced was a valuable one is evident from the Barclay patent, wherein the patentee surrounds his steam nozzle by an envelope or casing, leaving a free space between the outside of the nozzle and its casing, which may be filled with any non-conducting substance. In his specifications, Barclay states the object of surrounding the steam-nozzle with its non-conductor of heat is to maintain a high temperature of the steam until it reaches the exit from its nozzle, as "priming" (by which we understand the condensation of steam) is very injurious whilst forming the vacuum. In all the other devices the water and steam were carried parallel

to each other for some distance before coming in contact, and thereby the steam was perceptibly cooled and its injecting force weakened, while in the Hancock patent the steam and water approach each other from opposite directions up to a point only one-sixteenth of an inch from the point of actual contact, so that neither has any perceptible effect upon the other until the union takes place.

That the duplex injector used by the defendant is an infringement of the Hancock patent is apparent upon the most casual inspection, and indeed is scarcely denied by the defendant himself. It is, in fact, a duplication of the plaintiff's invention, and consists of an ejector or lifting apparatus, which, by the action of a jet of steam, raises the water from its reservoir, and, after discharging it into the combining tube, delivers it to a second apparatus at right angles to the first, by which it is injected into the boiler. The construction of the injector and the ejector is substantially the same, and each is evidently taken from the plaintiff's patent. The only perceptible differences between them are that the lower surface of the plug, E, is in this device somewhat more recessed than in the Hancock patent, and that the diameter of the combining tube at its throat, *d*, is not exactly similar in size to the inner diameter of orifice, K. These changes are quite immaterial; indeed, they are probably accidental. The orifice, K, in this device is also made considerably longer than in the plaintiff's patent; but that does not seem to affect in any way the separation of the inflowing steam and water before they reach the combining tube, which is the essence of the Hancock patent.

That the plaintiff's device is a useful one is sufficiently apparent from the fact that, with other devices open to him, the defendant 918 prefers to use the mechanism patented by the plaintiff. *Smith*

v. *Glendale, etc., Co.* 1 Holmes, 340; *Lehnbeuter v. Holthaus*, 105 U. S. 94.

Upon the whole we are clearly of the opinion that plaintiff is entitled to a decree for an injunction, and for a reference to a master to assess its damages.

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