

OPINION AFTER REHEARING.

MATTHEWS, Justice, (*orally.*) In June 25, 1884. the matter that was argued before us yesterday, *Hancock Inspirator Co. v. Jenks*, we are prepared to dispose of the application, made by the defendant in the original suit, upon a single point arising in the progress of the cause, involving a comparison between the patent sued upon, of Hancock, and a patent which it was thought had anticipated it, called the Rue patent. The order, granting the rehearing confined the argument to the issue raised by the motion, viz.: that the court, in its former opinion, was in error as to the construction and mode of operation of the patent of Samuel Rue, dated September 1, 1868; that said patent was an anticipation of plaintiff's patent; and that plaintiff's patent was void for want of patentability, and was invalid. This did not open the whole question of patentability and validity arising on all the evidence in the case, but only so far as it arose out of this comparison between the Rue patent and the Hancock patent, so that the question is a narrow one, and involves simply a comparison between the inventions secured by these two patents. The patent to Hancock, which is the subject of the suit, after describing the previous forms of apparatus for the purpose of injecting water into the steam-boilers by means of the steam, in the specifications makes this statement:

“When steam is substituted for water as the motor in such apparatus, it is evident that the heat in contact with the shorter tube will cause the inclosed or enveloping matter to become of a higher temperature as it advances towards the point where the motor can first act upon it, and thereby the motor becomes less effective than it would be were there a greater

difference in temperature between the two; that is, the motor and the body or liquid to be acted upon.”

This describes a defect which had been presented to the minds of previous patentees. The injector consisted of two tubes placed axially in a line with each other, through one of which the steam was suffered to enter, and which penetrated into the chamber, which was filled with water drawn from another source, for the purpose of propelling that water through the second tube into the boiler; and the difficulty foreshadowed in this connection, and which had been presented to the minds of previous patentees, was that the steam-tube was projected into the water-chamber to such an extent as that the jet of steam was subject to condensation, and so to a diminution of 919 its propelling or motive power to drive this water through the other tube into the boiler. In one case, Barclay’s patent, the inventor sought to obviate that difficulty by packing his steam-tube with a casing of non-conducting material, such as asbestos.

Now the statement in Hancock’s specification shows that what was present in his mind was the difficulty arising in the operation of this apparatus from two bodies—the steam, which was the motive power, and the water, which was the thing to be moved—coming prematurely into such contact as to diminish the motive power of the steam to condense or to carry the body where it ought to be propelled through the other tube into the boiler. Therefore he had presented to his mind the method of constructing some arrangement in this apparatus by which the temperature in the two bodies would be kept as far as possible from each other; the heat in the steam to be preserved, and the water to be kept cold. He therefore goes on to say: “The principal change which I made in the ancient apparatus is at this point, and it consists in substituting a plate with an orifice for the tube,”—that is, the tube intended for the introduction of one of the

two elements,—“and some simple but essential changes which will now be described.” He then proceeds to describe what is exhibited in the drawings connected with his patent; the arrangement of the plate with the orifice, called a plug, with the tube through which the steam propels the water into the boiler, (of course, these two were to be used for the purpose indicated,) with the means of holding the water which is drawn into it for the purpose of being propelled through the second of these tubes. The construction given to the patent was that it was a combination of those two elements, of course to be used for the purpose indicated, and implying the existence of this water-chamber; so that the objection taken that the water-chamber is not mentioned as one of the necessary elements of the combination is not before us, inasmuch as it was passed upon before by the court in construing this patent.

Now, there is nothing in the patent of Rue, so far as the specifications and claims are concerned, which suggests the idea which is contained in the patent of Hancock. His patent was for a totally different invention. But the argument is that his drawings exhibit, in point of fact, the very device which constitutes the change indicated by Hancock in his patent as the point intended to be covered by it, viz., a shortening, a withdrawing of the projection attached to the stem of the pipe so as to prevent its immersion in the water chamber except to the minimum amount; and although it is admitted that in those drawings the projection is shown to be longer than in Hancock's, yet that is only a question of degree, and the idea of overcoming the defect in that way having been suggested in the Rue patent, the increased efficiency to be attained by a diminution of the projection of the steam-tube into the water chamber was only a question of mechanical skill, and I think we are both of the opinion (and 920 that is

admitted by counsel upon the other side) that, if that were the only difference between the invention shown in the drawings connected with the Rue patent and the patent of Hancock, the argument would be well taken, and that is, that adopting the idea contained in a former patent, and, merely by a contraction of the parts, increasing the efficiency in pursuance of some suggestion, would not be an invention; but we are of opinion that Hancock's patent goes beyond that, and that is the precise difference between counsel. It is claimed on the part of the defendant that it is the sole difference. It is claimed on the other side that it is not the sole difference, but that the difference consists, not in the mere withdrawal of the nozzle of the steam-tube from the water-chamber by contracting it, by diminishing its length, by cutting it off, but it is by a removal of the water-chamber from its position, which it occupied in the previous devices as being contained between the two tubes equally, so that the water-chamber, being pushed further from the steam-tube, incloses and envelopes the mixing-tube where the steam and water combine, and thus serves, not only the purpose of preventing the condensation which would occur by its contact with the steam-tube, and so diminishing the power and effect of the steam-jet, but promotes the rapid condensation which does take place there, and which it is intended to carry out there, and which, by a more rapid creation of the vacuum promoted by the steam, permits the rush of water into the mixing-tube, and so gives greater vigor to the effect of the jet of steam. So it operates in a double way, by withdrawing its cooling effect upon the steam-jet and transferring it to the other tube, where it ought to be. We think there is a sufficiently clear and explicit description of the arrangement of those devices contained in the Hancock patent to distinguish it from all patents previously obtained, including that of Rue, and that the combination has no reference especially to

the greater or less length of the nozzle of the steam-tube, but to the arrangement of the tubes in connection with the water-chamber so as to bring that chamber opposite to and inclosing the tube where the steam and water mix, and the steam is condensed, and away from the other. We are clear in this opinion. Judge Brown coinciding in it, (it being his original opinion;) and as he has heard nothing in the argument tending to shake his conviction, the original decree is affirmed, and will be entered.

BROWN, J. Counsel will recollect that on the original hearing of this case the argument covered a much larger field than the rehearing, involving questions not only as to the validity of the patent upon its face, and its probable anticipation by the Rue patent, but questions as to the regularity of the proceedings in the patent-office; and while, of course, I considered all these points in delivering the original opinion, I must say that upon the application for a rehearing, where all the stress was laid upon one point, I was somewhat shaken 921 in my previous convictions. At the same time, if the question had been reargued before myself alone, I should have affirmed the original decree, upon the ground that a rehearing before the same judge will not be granted unless he is clearly of opinion that he was mistaken in his original judgment; hence I thought it a proper case to call upon the circuit justice to resolve my doubts. I am entirely content, upon the rehearing, with the opinion originally announced. I confess I am not able, speaking as one who is not practically acquainted with mechanics and machinery, to see the great benefit of this apparatus over the other, the improvement being largely in the shortening of the tube; at the same time, the burden of proving that is upon the defendant, and it is a burden which I apprehend would be a pretty difficult one to carry, in view of the large sales made by the plaintiff in this suit, and the adoption by the defendant of this

device in preference to all others. I think that is very strong evidence that there must be a superiority, in the minds of experienced engineers, in the Hancock patent, and I think there is, in respect to its mechanism and the details mentioned by the circuit justice, quite a marked distinction between it and the Rue patent.

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