does making an obtuse angle, instead of a right angle, at the meeting point of the pavement and curb, nor the making of a forwardly projecting bead. Complainant has introduced no evidence whatever to show that his pavement was more useful by reason of the alleged inventions, nor has defendant introduced any testimony on this point. Defendant's counsel, on the hearing, accounted for the deficiencies in their evidence by stating that defendant had disappeared, and could not be found. If the above claims include any advance beyond the prior art, it consists merely in an improvement in degree or finish by the use of ordinary skill in the extended application of well-known processes or devices, and cannot be held to involve invention. Walk. Pat. § 25 et seq.; Trimmer Co. v. Stevens, 137 U. S. 423, 11 Sup. Ct. 150; Mill Co. v. Walker, 138 U. S. 124, 11 Sup. Ct. 292; Johnson Co. v. Pacific Rolling-Mills Co., 2 C. C. A. 506, 51 Fed. 762; Wilson v. Copper Co., 4 C. C. A. 484, 54 Fed. 495; Westinghouse v. Electric Light Co., 63 Fed. 588. the bill be dismissed.

BRADDOCK GLASS CO., Limited, et al. v. MACBETH et al. (Circuit Court of Appeals, Third Circuit. November 2, 1894.) No. 14.

1. DESIGN PATENTS-NOVELTY.

The novelty of a design is to be tested, not by investigation of the means employed for its creation, but by ocular comparison of the design itself with the prior designs, which are alleged to be substantially the same.

2. SAME-INFRINGEMENT.

A design will be *held* to be an infringement where it unquestionably produces the same effect upon the eye as that of the patented design.

3. SAME-INJUNCTION.

The fact that defendants have ceased manufacturing within the district is no reason for refusing equitable relief from the infringement of a design patent, where an individual defendant and the officers of defendant company are still associated in the general business without the jurisdiction of the court.

Appeal from the Circuit Court of the United States for the Western District of Pennsylvania.

This was a suit by George A. Macbeth and George A. Macbeth & Co. against the Braddock Glass Company, Limited, and W. R. McCloy, for infringement of the Dietrich design patent for lamp chimney tops, No. 14,373, granted October 30, 1893, to George A. Macbeth, assignee of Henry Dietrich. A preliminary injunction was granted (54 Fed. 173), and on final hearing a decree was rendered for complainants by the circuit court, with the following opinion (Buffington, District Judge; Acheson, Circuit Judge, concurring):

This bill was filed by George A. Macbeth and the firm of George A. Macbeth & Co. against the Braddock Glass Company, Limited, and W. R. McCloy, for alleged infringement of design patent No. 14,373, for lamp chimneys, granted October 30, 1883, to Henry Dietrich, assignor to George A. Macbeth, who was the licenser of complainant firm. After issue joined and proofs taken, the letters were assigned to the George A. Macbeth Company, a corporation, which fact was set forth in a plea wherein it was alleged the bill had become defective for want of proper parties. To this plea complainants filed an answer, alleging that before said plea a reassignment had been made by the George A. Macbeth Company to said George A. Macbeth of the letters patent, so far as the territory embraced in the infringement complained of was concerned. A motion to strike off this answer was denied, and leave given complainants to file a supplemental bill, which was done, and to it plea and answer were filed. It was then stipulated the replication already filed should stand to the answer to the supplemental bill, the plea be set down for argument, and the testimony considered as though taken after supplemental bill filed.

This case concerns three chimneys known as Braddock Nos. 1, 2, and 3, respectively. By stipulation it is admitted they were made and sold by respondents prior to the filing of the bill. In defense it is alleged the letters were not granted for the same invention for which Dietrich applied; that his application was unlawfully changed by amendment; novelty and patentability in the design were denied, as also infringement thereof. In the plea to the supplemental bill it is further alleged that respondents' works, with all tools for making the devices complained of, and all manufactured stock thereof, were burned nearly two years prior to filing the plea; that respondents have done no work in this district since, and the principal officers have all moved to the state of Indiana; that, an accounting having been waived at bar, no ground for equitable relief now exists. The validity of the Dietrich patent has heretofore been passed upon in this circuit in Macbeth v. Evans, at Pittsburgh, and in Macbeth v. Gillinder, at Philadelphia (54 Fed. 169), and requires no further discussion. The anticipation now urged in the prior use at the Independent Glass Company factory was heard on affidavits, when a preliminary injunction was asked for, and the conclusion reached that the making by the Independent Company of chimneys with small crimps did not begin until it was suggested to Ward, the manager, by the sight of a chimney having the Dietrich design, and the opinion was expressed that respondents' witnesses were mistaken in the year. Macbeth v. Glass Co., 54 Fed. 173. The testimony of these affiants when called on the stand and cross-examined in the subsequent stages of the case has made this even more clear, and satisfies us of the correctness of the conclusion then reached. It was held at the same time that Exhibits Braddock Nos. 1, 2, and 3 were infringements, and an injunction was granted. While a number of witnesses have since been called by complainants to show that, giving the attention an ordinary purchaser does, they would have bought the enjoined chimneys under the impression they were buying the Dietrich or "pearl-top" design, yet respondents have called none to prove the contrary. We see no reason, either from the testimony or from our own examination of the enjoined devices, to differ from the conclusion then reached as to in-fringement. Nor is there any reason why the injunction should not be made permanent, though respondents have ceased manufacturing in this district. Mr. McCloy, a defendant, and the other officers of the respondent company, are still associated in the glass business, and that they are now without the jurisdiction is possibly the more reason why, in this protracted litigation, there should be a decree and injunction which would avoid further litigation on the same subject-matter between the same parties in another tribunal. In such decree and injunction Mr. McCloy should be included. The bill was against him personally. He filed a "joint answer" with the Braddock Glass Company, Limited, and did not deny his per-sonal liability. They joined in their defense by a joint and several plea, and the proofs show he was the active managing officer of the limited partnership. By stipulation, made before any testimony taken, it was admitted the three chimneys noted "were made and sold by the defendants prior to the bringing of the bill." To restrict the decree to a limited partnership, whose solvency, even to the extent of costs, is questionable, would be to ignore the issues and stipulation upon which the case was conducted. While it is a disputed question whether a manager of a company is personally responsible for infringing acts, it is universally conceded that such officers may be enjoined against future infringement. 3 Rob. Pat. 79. Nor do we think the rights vested in complainants by the grants of the letters patent are affected by the proceedings shown in the file wrapper. Dietrich's first application and drawing showed three distinct designs. The application was rejected because only one could be embraced in a design patent.

Two of them were withdrawn (neither of which has any resemblance to the infringing device), the application was amended to conform therewith, and thus amended and based on the remaining design was prosecuted and duly allowed. We see no objection to this course of procedure, followed at the suggestion of the patent office authorities, and upon the entire case we are of opinion the complainants are entitled to a decree.

The cause is now heard on defendants' appeal.

Wm. L. Pierce, for appellants.

James I. Kay and George H. Christy, for appellees.

Before DALLAS, Circuit Judge, and WALES, District Judge.

DALLAS, Circuit Judge. By the decree appealed from it was adjudged that the letters patent No. 14,373, granted to George A. Macbeth, assignee of Henry Dietrich, on October 30, 1883, for designs for lamp chimneys, is valid, and that it had been infringed by the defendants below; and thereupon a perpetual injunction and the payment by the defendants to the complainants of \$250, being the minimum damages provided for in the act of congress of February 4, 1887, together with the costs of the suit, were ordered.

The only assignments of error which have been pressed are as follows:

"(1) The court erred in holding that it was patentable merely to double the number of crimps at the top of a chimney. (2) The court erred in holding that respondents' chimneys infringed. (3) The court erred in permitting the filing of a supplemental bill." "(6) The court erred in sustaining complainants' bill."

The decree does not embody a finding "that it was patentable merely to double the number of crimps at the top of a chimney," and that position is not taken in the opinion of the circuit court, nor is it necessary, or even pertinent, to its conclusion. The argument for the appellants would be of greater force if the patent in suit, instead of being for a design, was for the mechanism of its construction. It has been made plainly obvious to us, and seems to be fully recognized by the trade, that the appearance of the patented design is very different from that of any other which had previously existed; and, this being so, the method of its production is irrelevant. The novelty of a design is to be tested, not by investigation of the means employed for its creation, but by ocular comparison of the design itself with the prior designs which are alleged to be substantially the same, and when tried by this test the novelty of the design covered by the patent in suit is made quite apparent.

The second assignment presents, conversely, the same question as the first, and for like reason cannot be sustained. The designs of the appellants unquestionably produce the same effect upon the eye as that of the appellees, and therefore the former conflict with the latter.

The argument submitted in connection with the third assignment, and the ground upon which it is based, are stated in the appellants' brief as follows:

"No equitable relief was required at the time of filing of the supplemental bill. For twenty months the defendants had been out of business, * * * and the complainants were not entitled to an injunction. There was, therefore, no basis of equitable relief." Root v. Railroad Co., 105 U. S. 189, is relied upon as an authority for this contention, but does not support it. In our opinion, the point was rightly disposed of by the learned judge below, who said:

"Nor is there any reason why the injunction should not be made permanent, though respondents have ceased manufacturing in this district. Mr. McCloy, a defendant, and the other officers of the respondent company, are still associated in the glass business, and that they are now without the jurisdiction is possibly the more reason why, in this protracted litigation, there should be a decree and injunction which would avoid further litigation on the same subject-matter between the same parties in another tribunal."

The sixth assignment does not set out the particular error intended to be alleged. It therefore does not conform to the eleventh rule of this court, and, according to that rule, might be wholly disregarded. But we have fully examined the record, and considered the argument on behalf of the appellants, and are not convinced that any error is disclosed or has been made to appear. Therefore the decree is affirmed, with costs.

NOTE. For other cases involving a construction of this patent, see Geo. A. Macbeth Co. v. Lippencott Glass Co., 54 Fed. 167; Macbeth v. Gillinder, Id. 169, 171.

STAHL v. WILLIAMS.

(Circuit Court, D. Connecticut. November 2, 1894.)

No. 708.

1. PATENTS-INVENTION-SALES AS EVIDENCE OF UTILITY.

The fact of extensive sales is entitled to greater weight as evidence of utility and invention when the article is of a kind (in this instance, an egg incubator) which purchasers are not likely to be induced to buy by reason of alluring trade-marks, attractive finish, or the energy of traveling salesmen.

2. SAME-CONSTRUCTION OF PATENT.

That a device shows a marked advance in utility over all previous devices, and goes at once into extensive use, is sufficient to bring it within the rule that where a number of persons have been engaged in repeated, but unsuccessful, efforts to accomplish a certain result, and one of them finally succeeds in devising the necessary means, the courts will not be inclined to adopt such a narrow construction of his patent as would be fatal to the validity thereof.

8. SAME-INFRINGEMENT-EQUIVALENTS-INCUBATORS.

Where the object was to cause the water entering the heating tank of an incubator to flow along the sides thercof, when first entering, and while at its highest temperature, thus causing an equal distribution of heat, *held*, that the use of pipes to conduct the water along the sides was the equivalent of partitions running through the tank, and accomplishing the same purpose.

4. SAME.

The Stahl patent, No. 368,249, for improvements in incubators, construed as to the third claim, and the same hdd valid and infringed.

5. SAME.

The Halstead patent, No. 258,295, for improvements in incubators, construed, and held not infringed as to claims 6 and 7.

This was a suit by George H. Stahl against Albert F. Williams for infringement of certain patents for improvements in incubators. A preliminary injunction was heretofore denied. 52 Fed. 648.

John J. Jennings, for complainant.

Mitchell, Hungerford & Bartlett, for defendant.

TOWNSEND, District Judge. In the hearing on this bill in equity for alleged infringement of various patents, complainant relied upon the third claim of letters patent No. 368,249, granted to him August 16, 1887, and upon the sixth and seventh claims of letters patent No. 258,295 granted May 23, 1882, to Augustus M. Halstead, and assigned to him; both of said patents being for improvements in incubators. The defendant contends, as to each of the patents in suit, that the state of the art requires such a limited construction that it does not include the form of incubator manufactured by him. A motion for a preliminary injunction was heard, and was denied. 52 Fed. 648.

The object sought to be attained, as stated by the patentee, was the provision of a greater amount of heat at the sides of the interior of the incubator. This was accomplished by the use of two vertical partitions extending inwardly from one end almost to the other of said hot-water tank near its opposite sides, so arranged that the water, when at its highest temperature, entering the tank near the outer walls of the apparatus, would flow longitudinally along the outer sides of the tank, and return through its middle to the heater, thus equalizing the temperature. Said third claim is as follows:

"In an incubator, as a means of uniformly heating its interior chamber, the flat tank overlying said chamber, and provided with the two partitions extending from one end nearly to the other on opposite sides of its middle, in combination with the external heating vessel, the two pipes, a³, leading from its top into opposite sides of the tank outside of the partitions, and the return pipe, a⁴, located at the same end of the tank, and extending from a point between the partitions to the base of the heater, whereby the hot water is delivered in two currents along the sides of the tank, and returned through its middle to the heater."

In order to determine the construction to be put upon this claim, it will be necessary to examine the state of the prior art. Patent No. 245,121, granted to Edward E. Bishop, August 2, 1881, shows partitions. The patentee states that they are designed to make the water flow evenly over the entire surface of the tank. The main partition extends from one end along the center of the tank, and has a branch running at right angles on one side. The heated water is not thereby first conducted to the sides of the tank, but it enters by a pipe at one end of the tank, near its center, and passes around the other end, and back to a discharge pipe, its flow being directed towards the outer side and portion of the end near said discharge pipe by said branch partition. It also shows a hot-water pipe extending outside and around the tank for the purpose of keeping the air space around said tank and the egg chamber at a suitable temperature. Patent No. 296,413, granted April 8, 1884, to Frank Humphreville, shows no heating pipes, but various partitions, which are designed to cause the water to circulate from the center of one end of the tank along said end, the two sides, the further end, and then over the remaining surface of the tank to a discharge pipe at said further end. There is no proof that this apparatus was capable of successful operation. Patent No. 349,749, granted September 28, 1886, to Frank Rosebrook, shows partitions similar to those shown in the Humphreville patent. but less complex in construction. It also shows hot-water pipes outside of said tank. These three patents were cited by the patent office as anticipations of the third claim as originally made. Thereupon the patentee inserted the following disclaimer:

"I am aware that heating pipes have been variously arranged to maintain a uniform temperature in an incubator; but a flat tank with partitions, such as herein shown and described, has been found to give the result desired in a more satisfactory manner, and at a less cost."

Much reliance is placed by defendant upon the language of this disclaimer. I think, however, in view of the Bishop and Rosebrook patents, that it should not be construed as an admission that pipes extending through the tank for maintaining a uniform temperature are old, but may fairly be limited to the class of pipes referred to in said patents, namely, those located outside the hot-water tank. The other patents relied on to show that heating pipes have been used in the tank itself were not referred to as anticipations. The applicant, therefore, had no occasion, on that account, to insert a disclaimer as to them.

Patent No. 193,490, granted July 24, 1877, to Thomas M. Davis, shows three curved delivery pipes extending into the tank from the end nearest the heater towards the opposite sides.

It is contended in support of the validity of the patent in suit that the prior patents hereinbefore considered and claimed as anticipations were mere paper patents, and that it does not appear that any of them were capable of practical successful operation. Said prior patents are also the property of the complainant, and are included in the bill. That the device of the patent in suit marked an advance beyond all previous devices is evident. Its utility is established by undisputed testimony. The sales of complainant's incubators, since the adoption of the improvement herein claimed, have increased from 300 to 10,000 or 12,000 per annum. It is claimed that the number of incubators containing this heater is greater than that of all the other makes combined. I am inclined to give greater weight to the evidence of utility, because it is not open to the objection suggested in Duer v. Lock Co., 149 U. S. 216, 223, 13 Sup. Ct. 850. The class of persons who use incubators are not likely to be induced to buy by reason of an alluring trade-mark, attractive finish, or the energy of the traveling salesman. The rival incubators are operated side by side at the country fair, and the practical farmer may count the eggs and hatching chickens, and reduce the question of comparative utility to a mere mathematical exercise.

Again, the question of utility is one not of a theory, but of a condition. Theoretically it might seem as though the partitions of Rosebrook or the pipes of Davis must produce equally perfect distribution of heat throughout the chamber, but the complainant, responding to the public demand for the better results accomplished by the device of the patent in suit, is forced to discard the other partitions and pipes, and the defendant has not seen fit to imitate them in his device. This patent seems to fall within the settled rule that where a number of persons have all been engaged in repeated, but unsuccessful, efforts to accomplish a certain result, and one of them finally succeeds in devising the necessary means, and

secures a patent therefor, the courts will not be inclined to adopt such a narrow construction as would be fatal to the validity of such patent. Manufacturing Co. v. Adams, 151 U. S. 139, 145, 14 Sup. Ct. 295; The Barbed-Wire Patent, 143 U. S. 275, 283, 12 Sup. Ct. 443, 450. The defendant's incubator shows the two delivery pipes extending into the tank from the end nearest the heater, parallel to the sides of the tank, and nearly to the further end, and a discharge pipe at the end nearest the heater. The question presented is whether this construction is equivalent to that embraced within the third claim of the patent. It is urged that the pipes in defendant's device do not extend from the top to the bottom of the tank, so as to divide the water on their opposite sides; that they do not deliver the water, when at its highest temperature, along the opposite sides of the tank; and that they do not operate to cause currents of water to flow along the opposite sides of the tank and to return through the middle. But assuming that these statements are correct, it does not necessarily follow that the pipes of defendant's device are not the mechanical equivalents of complainant's partitions. The question is whether they perform the functions covered by the patent in suit in substantially the same way to obtain the same result. If the pipes cannot be considered as partitions, within the meaning of the claim, yet they serve to divide and confine such water as is received within the tank, and to cause it to flow, when at its highest temperature, parallel to the opposite sides of the tank. That some of the water flowing from the heater may not pass through the middle of the tank, seems immaterial. In each the outlet is so located that the main current must flow substantially through the center of the tank. The difference in flow of the water is only trifling and incidental. Each device secures the same result by the same operation. In each the current of hot water is, by means of conduits which serve to partition off or keep apart said current from the main body of water, introduced or delivered, as stated in the specification, "when at its highest temperature, near the outer walls of the body, so that the heat is distributed and the temperature equalized within the apparatus in a satisfactory manner." The patentee says he describes the invention "without limiting myself to the precise construction and arrangement of parts shown." It is evident from the language used by the patentee that the function to be accomplished by the channels or partitions of the patent in suit was not necessarily to heat the sides of the tank, but, as is clearly stated by the expert for complainant, "to distribute the heat within the incubating chamber of the apparatus in such a manner as to equalize the same therein; and this is accomplished by warming the sides of the interior of the incubating chamber, where the heat is more quickly absorbed than at the center, to a greater degree than at the center." Inasmuch as this function is accomplished by the device of defendant in substantially the same way, I think it infringes the third claim of said patent.

After an examination and independent consideration of the case presented under the sixth and seventh claims of letters patent No. 258,295, granted May 23, 1882, to Augustus M. Halstead, I see no reason to modify the views expressed at the hearing on the motion for a preliminary injunction. Said claims are as follows:

"6. In an egg-holding tray, the combination, with the wires or cross bars, of a web of muslin or similar material on which the eggs rest, and which is movable, so as to turn the eggs, substantially as set forth.

"(7.) The combination, in an egg holding and turning tray, of cross wires or bars, a web, and a roller upon which the web may be wound, substantially as set forth."

The specification and drawings are limited to a construction in which the eggs lie between cross wires and are supported by a netting. Where the web covered by the claims in suit is employed, it is described and shown as passing around the netting and below the cross wires. Rollers on which the eggs rest are disclaimed. In the defendant's device there is no netting; the web passes around and above the rollers; the eggs are supported by the rollers, and the web is used to turn the eggs. The defendant's construction, therefore, does not infringe said claim. The prior art shows several constructions embodying the principles involved in the operation of defendant's device. Let a decree be entered for an injunction and an accounting upon the third claim of patent No. 368,249.

PITTSBURGH REDUCTION CO. v. COWLES ELECTRIC SMELTING & ALUMINUM CO.

(Circuit Court, N. D. Ohio, E. D. November 9, 1894.)

1. EQUITY-REHEARING-NEW EVIDENCE.

A rehearing will not be granted to allow the introduction of evidence which, by due diligence, could have been introduced at the original hearing, on the ground that the party and his counsel were misled as to the real issue by the arguments of the opposing counsel.

2. PATENTS-ANTICIPATION-ALUMINUM BY ELECTROLYSIS.

The Hall process of making aluminum by electrolysis, after dissolution of alumina in fused cryolite (letters patent No. 400,766), is patentable, even if the solubility of alumina in fused cryolite was previously well known, alumina having never previously been disrupted by electrolysis into its constituent parts. 55 Fed. 301, affirmed.

8. SAME.

Discovery of the fact that fused cryolite would freely dissolve alumina, which was essential to Hall's process, was not anticipated by the discovery of De Ville that cryolite would dissolve or flux alumina to a slight extent, he having compared its power to dissolve alumina to that of fluoride of sodium and fluor spar, the former of which would, and the latter was supposed to, dissolve about 1 per cent. of alumina, though fluor spar has since been discovered to dissolve about 25 per cent. of alumina. 55 Fed. 301, affirmed.

On rehearing. Denied.

For former opinion, see 55 Fed. 301.

W. Bakewell & Sons and George H. Christy, for complainant. M. D. Leggett and Loren Prentiss, for defendant.

Before TAFT, Circuit Judge.

TAFT, Circuit Judge. This is a bill to enjoin the infringement of a patent for a process of making aluminum by electrolysis, and to re-