in both, though the melting chamber of the old was 12 inches as against 36 in the new, thus showing that the fining can be as complete at 12 as at 36 inches. Substantially the same facts are proven by John P. Whitney, proprietor of the works, with the additional fact that in their tank No. 3 a boot leg is employed with openings at bottom one inch deep and the shape of a caret. This shows a clear fluid depth of 24 inches. Testimony in contradiction of some of these points has been produced by the complainants. The very most that could be argued for it is that it balances the proofs of the defendants. But this will not do. Infringement is alleged. To merely meet the proofs of the defendants is to leave the question in the balance, and that is to decide against the complainants. The burden of proof being on the complainants, we are of opinion the weight of the evidence is against them and in favor of the defendants.

Our conclusions, briefly stated, are—*First.* The fluid layer and its function in a continuously worked deep tank were known before this patent was granted. *Second.* At that time the gravital action of glass and the reactions taking place during such movements were known; and no hitherto unknown and now known movement, action, or process in the melting of glass were disclosed in the patent in suit. *Third.* That the contention of complainants that depth is a necessary function in the fining of glass is not established by the weight of the evidence. *Fourth.* That it is not shown that in defendants' tanks the functions of forming "below the upper fluid portion of the metal a layer of metal in a semi-fluid or partially solid condition," as claimed in the patent, is used. The weight of the evidence is to the contrary. *Fifth.* In view of the state of the art at the date of this patent, the claim granted was not then patentable, and the letters patent No. 261,054 are invalid. *Sixth.* That the burden of proof of infringement is on the complainants, and this they have failed to meet, and the bill must be dismissed, at their cost.

ACHESON, Circuit Judge, concurs.

BROMLEY BROS. CARPET CO. *v.* STEWART *et al.*

(Circuit Court, E. D. Pennsylvania. July 1, 1892.)

1. PATENTS FOR INVENTIONS—INVENTION—MECHANICAL ADAPTATION—LOOMS.
First claim of patent No. 418,349 to Thomas Bromley, Jr., for a power loom provided with a double shuttle box on each side thereof, mechanism for operating said boxes pick and pick, and a mechanism which stops the loom after every two picks, does not embrace patentable novelty, in view of the fact that all of the elements were old, in exactly the connection in which they were used, except the stopping mechanism, which was adapted by a perfectly obvious change from a closely analogous construction.

2. SAME.
The second claim of patent No. 418,349, to Thomas Bromley, Jr., for the combination, with a mechanism which stops the loom after every two shots of weft, of a mechanism which may be started by the foot, does not embrace patentable novelty,

in view of the fact that the stop mechanism had been adapted by a perfectly obvious change from a closely analogous mechanism, and that treadle mechanisms for starting a loom were old in connection with automatic mechanism for stopping it.

3. SAME—ANTICIPATION—ABANDONED EXPERIMENTS.
A machine which had operated at least once to accomplish its desired result, and subsequently was worked satisfactorily several times, without change, is not an abandoned experiment, although several changes not relating to the main operating parts of the machine were suggested, and the use of the machine was discontinued after it had once accomplished its desired result, because the persons using it had turned their attention to other matters.

4. SAME—INVENTION.
That upon the idea of making an improvement, an adaptation of an old machine to the new purpose was proposed almost simultaneously by three distinct and independent parties, by an alteration of mechanism slightly different structurally, but the same in principle in each case, is evidence that such change was obvious, and did not involve invention.

In Equity. Suit by the Bromley Bros. Carpet Company against John Stewart and George Stewart, trading as John Stewart & Son, to restrain an infringement of patent No. 418,349, granted December 31, 1889, to Thomas Bromley, Jr., for a power loom. Bill dismissed.

John Dolman, for complainants.

Hector T. Fenton, for respondents.

ACHESON, Circuit Judge. This suit is upon letters patent No. 418,349, dated December 31, 1889, granted to Thomas Bromley, Jr., upon an application filed May 16, 1889, for an alleged invention appertaining to looms for weaving by power a class of fabrics made with two wefts, one of jute and the other of chenille, thrown "shot about." The defendants are charged with the infringement of the first and second claims of the patent, which are as follows:

"In a power loom for weaving Smyrna carpets, rugs, and such like fabrics: (1) A power loom provided with a double shuttle box on each side thereof, mechanism for operating said boxes pick and pick, and a mechanism which stops the loom after every two picks, as described. (2) The combination, with a mechanism which stops the loom after every two shots of weft, of a mechanism by which the loom may be started by the foot, as shown, described, and for the purpose specified."

Smyrna rugs and carpets are double-faced fabrics, one side being the *fac simile* of the other side. Before 1888 they were made altogether by hand, and this had been so from their first manufacture, about 14 years previously. They are woven with one warp and two wefts, one of the latter consisting of coarse jute, the other of parti-colored twisted chenille, a thread of each being shot or thrown alternately. After each weft or thread of chenille is shot, it is necessary for the weaver to set or adjust it with reference to the preceding thread of chenille, so as to form the figure, and to do this the loom must be thrown out of action, or knocked off and stopped, after every second shot or pick. To effect this stoppage of the loom after every two shots of weft is the purpose of the mechanism covered by the first claim of the patent in suit, and to start the loom again after the weaver has set his chenille weft is the purpose of the mechanism covered by the second claim. It is admitted that, while the defendants' mechanism differs structurally from that described in the patent in suit,

yet that their looms contain the constructions of the first and second claims.

At the threshold of the case we are confronted by the question whether there is any patentable novelty in either of these constructions. It is very clear from the proof that the entire mechanism described in the patent, and entering into the combinations covered by the first and second claims, had long previously been employed in power looms for weaving other fabrics. Double shuttle boxes on each side of a power loom operated by the described mechanism "pick and pick" were old, and so also was the described mechanism for stopping the loom. The specification states that the "stop motion" is constructed and operated "the same as a two-shot weft stop motion, and consists of the usual cam, *b*, (which cam is placed on the lower or 'cam shaft,' a lever, G, a pawl, *d*, slide, g^1, and trigger, g^2, all shown in Fig. 5, and which parts are all old and well known to weavers." "The two-shot weft stop motion" was quite ancient, but as used was controlled by the weft. To adapt it to stop the loom after every two shots, the patentee made a slight and perfectly obvious mechanical change to accomplish what he had in view. Again, the Crompton and Wyman United States patent of 1879 shows mechanism which automatically stops the loom after every pick or shot, and it is shown that, prior to Bromley's alleged invention, power looms which stopped automatically after every third or fourth pick, as the particular work to be done required, were well known. There is testimony to show, and, indeed, it is indisputable, that the alteration in the mechanism of the old power loom, whereby the loom could be stopped automatically after every second pick, if this were desired, was a matter entirely plain to any skillful loom builder.

Then, turning to the foot operated mechanism, we find in Crompton's United States patent of 1869 a treadle to start the loom after each stoppage; and the Crompton and Wyman patent of 1879, already referred to as disclosing a mechanism for stopping the loom after each shot or pick, also shows a treadle mechanism, substantially the same as that of the Bromley patent, whereby the loom is restarted after each stop. Now, if it were conceded that the weaving of Smyrna rugs and carpets by power instead of by hand had not been contemplated before, still did the patentee (Bromley) do anything more than simply apply an old machine to an analogous subject, with no result substantially distinct in its nature, by making obvious mechanical modifications to effect the desired purpose? It seems to me that this was all he did, and, if so, what he accomplished did not rise to the plane of invention. *Pennsylvania Railroad Co.* v. *Locomotive Truck Co.*, 110 U. S. 490, 4 Sup. Ct. Rep. 220; *Hollister* v. *Manufacturing Co.*, 113 U. S. 59, 5 Sup. Ct. Rep. 717; *Thompson* v. *Boisselier*, 114 U. S. 1, 5 Sup. Ct. Rep. 1042; *Aron* v. *Railway Co.*, 132 U. S. 84, 10 Sup. Ct. Rep. 24.

But the merit of being the first to conceive of the weaving of "Smyrnas" by a power loom, and carrying the idea into successful and practical effect, must be denied this patentee. An earlier date than the month of April, 1889, cannot be assigned to his invention. But it is proved be-

yond controversy that, as early as December, 1887, Joseph H. Bromley, a member of the firm of John Bromley & Sons, manufacturers of carpets, rugs, etc., at Philadelphia, had conceived the idea of weaving Smyrna rugs by power; and that he gave an order (which at first was verbal, but afterwards was embodied in a letter signed by his firm) to the Knowles Loom Works, of Worcester, Mass., for the construction of a power loom for that purpose, to contain the same elements as that of the first and second claims of the patent in suit, and performing the same functions. The original letter of John Bromley & Sons containing this order, bearing date December 12, 1887, and which was received by the Knowles Loom Works shortly after its date, is in evidence. That company, however, being tardy in executing this order, John Bromley & Sons, early in May, 1888, gave a verbal order to the M. A. Furbush & Son Machine Company, of Camden, N. J., to build such a power loom. This order was entered May 10, 1888, on the order book of Furbush & Son, who built the loom and delivered it to John Bromley & Sons at their establishment in Philadelphia about June 19, 1888, the date of the invoice which is in evidence. This loom was provided with double shuttle boxes on each side, with mechanism to operate them "pick and pick," mechanism to stop the loom after every second pick, and a treadle or foot mechanism to start the loom. It was set up and tested by John Bromley & Sons shortly after its delivery, and was found to be practically operative for weaving Smyrna rugs. At least one entire Smyrna rug was woven upon this loom at that time. It was not an experimental machine, but a complete and finished power loom, capable of working, and, in fact, it was then operated successfully. While this suit has been in progress, this loom, without any alteration whatever having been made in it, was set to work, and several complete Smyrna rugs, which are exhibits in this case, were woven thereon.

There is no real foundation for the argument that this Furbush loom belongs to the category of abandoned experiments. It is true that William Hanson, the superintendent of John Bromley & Sons, thought that the loom was a little too narrow, and he also suggested some minor additional improvements for the ease of the weaver, but these proposed additions did not relate to the parts of the loom involved in this controversy. They concerned other distinct parts. When this loom was procured it was the intention of John Bromley & Sons to proceed to change the weaving of Smyrna rugs in their establishment from hand to power. The change, however, was not then made, but was deferred temporarily, because they had just begun to manufacture chenille curtains, and were then engaged in putting in a number of new looms for that purpose. They commenced to make the change in the manner of weaving Smyrna rugs in December, 1889, and received power looms for the purpose from the Knowles Loom Works, the first one being shipped there December 14, 1889.

As respects the acts of the defendants here complained of, it appears that, some time in the spring of 1889, the idea of weaving Smyrna rugs by power occurred to George William Stewart, a member of the defend-

ants' firm of John Stewart & Son, manufacturers of rugs, etc., and he made drawings of a loom for this purpose. About the middle of September, 1889, he gave a verbal order for such a loom to the Crompton Loom Works. It was finished and tested satisfactorily about the middle of November, 1889, and on the 21st day of that month the defendants ordered from the Crompton Loom Works 25 such looms. The delivery thereof commenced in the last week of December, 1889, and these are the looms alleged to infringe the plaintiffs' patent. The proof thus disclosed the significant fact that the conception of weaving Smyrna rugs by power instead of by hand occurred about the same time to three different persons, namely, Joseph H. Bromley, Thomas Bromley, Jr., and George William Stewart, engaged in the manufacture of these rugs, whose respective firms, acting independently of each other, gave orders to different loom builders, who thereupon constructed power looms for the purpose, different structurally, but all having mechanism to stop the loom after every two picks, and for restarting it by the foot. This coincidence is confirmatory of our conclusion that no invention in a patentable sense was involved in the first and second claims of the patent in suit. *Atlantic Works* v. *Brady*, 107 U. S. 192, 199, 2 Sup. Ct. Rep. 225. For the reasons above discussed—*First*, the lack of patentable novelty; and, *second*, because of the clear anticipation shown in the Furbush loom made in the summer of 1888—the plaintiffs' case fails. Let a decree be drawn dismissing the bill, with costs.

A LOT OF WHALEBONE.

LEWIS *et al.* *v.* A LOT OF WHALEBONE.

(*District Court, N. D. California.* August 30, 1892.)

No. 10,269.

1. SALVAGE—WHAT CONSTITUTES SALVAGE SERVICE.
A whaling vessel with a cargo of whalebone and oil went ashore in the Arctic sea. Her rudder and keel were broken, and her machinery displaced. Every effort to get her off was unavailing, and distress signals were displayed. A similar vessel was cruising in the vicinity, but the dangerous condition of the sea prevented any response. Next morning a message was sent by the captain of the wrecked ship, to wit, that if the captain of the salving ship would "set his colors to the mizzen peak he would leave his ship, and come aboard; or, if he thought that his bone could be saved, to send his boats for it." There was some conflict as to the purport of the message, but it was decided that the weight of testimony and the surrounding circumstances indicated that the captain of the wrecked vessel was anxious to escape with his crew, and the saving of the cargo was a secondary consideration. The whalebone was rescued, and landed safely in port. *Held*, the bone must be regarded as having been *quasi* derelict, and the service in securing it a salvage service.

2. SAME—PARTIES—DISMISSAL.
When some of the owners of a salving ship are also part owners in the salved property, and their interests in the respective properties are varied and graded, and where it is necessary, in order to effect an equitable adjustment of the question of salvage, and avoid a multiplicity of suits, that all of the owners be made parties,