

gle-thread stitch, and pushes a looper thread forward through it for a double one. The same action is found in defendants' machine. As the looper moves forward, it reaches a position when the curved metal of the upper jaw (down to the dotted line) no longer holds it. It slips off that portion of the metal. It does not fall upon the lower jaw, since the jaws are here united, but slides down on it, and the further forward movement of the lower jaw completes the stitch. From the moment the loop slides down on to the lower portion of the looper (below the dotted line), the upper portion of said looper (above the dotted line) plays no further part in the operation. Evidently, then, the defendants' looper is composed, as is complainant's, of two parts or members (which, as they form a mouth, may properly be called "jaws"), which, although united together, do not act concurrently, but successively, and the upper one of which has a hooked portion to engage the needle-thread loop. Although there is a difference of form, we are unable to find any substantial difference of parts or of functions, between the two stitch-forming mechanisms, and are therefore of the opinion that defendants' machine infringes claims 2 and 5 of No. 472,094, permitting a high rate of speed to be attained in taking off the loop of needle thread, and bringing it up into position above the fabric (a rate of speed not known to the art before patentees' application), by substantially the same combination of parts disclosed in the patent, and covered by these claims.

The decree of the circuit court is reversed, and cause remitted, with instructions to dismiss the bill as to No. 472,095, and to enter the usual decree as to claims 2 and 5 of No. 472,094. Since appellant prevails as to one patent, and fails as to the other, the decree should be without costs to either side.

WILLCOX & GIBBS SEWING-MACH. CO. v. MERROW MACH. CO. et al.

(Circuit Court of Appeals, Second Circuit. March 1, 1899.)

No. 113.

PATENTS—VALIDITY AND INFRINGEMENT—SEWING MACHINES.

The Willcox & Borton patent, No. 472,094, for improvements in sewing machines intended especially for making overseams in sewing knit goods, construed, and held valid, and infringed as to claims 2 and 5.

Appeal from the Circuit Court of the United States for the District of Connecticut.

This cause was submitted upon oral argument May 17, 1898, and an opinion reversing decree of the circuit court and directing the usual decree as to claims 2 and 5 of United States letters patent No. 472,094 was filed October 26, 1898. 93 Fed. 206. An application for rehearing was made by defendants November 18, 1898, and reargument was allowed upon the single "question of similarity of equivalency of defendants' hook looper to complainant's double-jawed looper." After rehearing upon briefs and oral arguments (January 30, 1899), the following memorandum of decision is now filed.

Edmund Wetmore and Chas. Howson, for appellant.
Melville Church and Chas. E. Mitchell, for appellees.

Reargued before WALLACE, LACOMBE, and SHIPMAN, Circuit Judges.

LACOMBE, Circuit Judge. In the original opinion (93 Fed. 206) this court discussed at considerable length the details of structure, characteristics, and functions of complainant's double-jawed looper and of defendants' hook looper. In the course of this discussion it was remarked that when the upper jaw or member in complainant's device has caught the loop of needle thread, and thereupon pulls away from the line of the needle's play, "the loop of needle thread goes with it, even when it rises above the edge of the fabric, because it is still retained in the curved, forward (i. e. nearest the seam) portion of the metal jaw which caught it." The opinion then proceeds:

"Precisely this is the action of defendants' device, as may be seen [from certain figures referred to]. Here, too, the upper jaw or member inserts its hook between needle and needle thread, and pulls away from the line of the needle's play, and the loop of needle thread goes with it *even when it rises above the edge of the fabric, because it is still retained in the curved, forward portion of the metal jaw which caught it.* * * * Having now raised the needle thread above the fabric, the next step of the process [in complainant's machine] is a forward movement of the looper. This causes the loop of needle thread to slip off the curved portion of the jaw which held it, whereupon it falls upon the lower jaw. * * * *The same action is found in defendants' machine. As the looper moves forward, it reaches a position where the curved metal of the upper jaw [down to the dotted line] no longer holds it. It slips off that portion of the metal.* It does not fall upon the lower jaw, since the jaws are here united, but slides down on it," etc.

In the petition for reargument it was pointed out that the testimony did not warrant the statement italicized above, that the curved forward portion of the metal jaw (in defendants' machine) which caught the loop of needle thread "retains" such loop "even when it rises above the edge of the fabric," and does not part with it until the "looper moves forward"; and attention was called to the fact that complainant's expert admitted that that portion of defendants' hook which he contended was the equivalent of the upper jaw of complainant's looper retained its hold of the loop of needle thread only while moving in a horizontal direction, and lost such hold as soon as it began to rise. A careful re-examination of the parts as reproduced in the models and drawings indicated that, although there might be some slight elevation of the loop before the upper portion of the hook lost it, such elevation must necessarily be inconsiderable; it was not carried substantially above the fabric. Although it was not apparent that it made any material functional difference whether the loop slipped off just as the hook began to rise or later, reargument was ordered, since the precise point had not, perhaps, been quite fully discussed on the original argument. The conclusion heretofore expressed as to the equivalency of defendants' hook looper to the complainant's double-jaw looper remains unchanged by the reargument. We have found, as may be seen by reference to the original opinion, that "no compound motion overseam machine that ran or was capable of running at a speed at all comparable to complainant's has been found in

the prior art"; that "complainant's stitch-making [looper] mechanism is so organized as to permit itself to be driven at that rate, and that it is the first stitch-making [looper] mechanism which could be so driven"; that "the patentees seem to have made an ingenious and meritorious invention of utility and novelty to support a broad patent, and to have sufficiently described such invention"; that the patentees did not, by their description or drawings, "restrict their invention to the single class of machines known as single-thread machines"; that the "claims cover the devices of the patent, whether used in a double or single thread machine"; that, given the single-thread device illustrated in the drawings of the patent, there was no patentable novelty, in view of the state of the art, in adapting it to a double-thread machine by deepening the opening between the jaws, straightening the jaws, and punching an eye in the lower one to carry the second thread; that, "inasmuch as the claims cover a combination which takes the loop of needle thread from the lower side of the fabric around the edge to the upper side, leaving the stitch to be completed either as a single-thread or double-thread, infringement is not avoided merely by completing it as a double-thread stitch, if the functional operation of the parts performing the operation of the claim are identical, although there may be differences in form." Although we did not expressly say so, the above excerpts quite clearly indicate that we are of opinion that complainant was entitled to a fairly liberal application of the doctrine of equivalents.

It will be sufficient to refer to the extended analysis (in original opinion) of the defendants' device, wherein it was found that the metal composing it is in fact a looping device, with two members or jaws united on the side towards the seam instead of on the side away from it; that the upper portion of the metal in defendants' hook performs the same function as complainant's upper jaw, and in the same way, and that the lower part of such metal performs the same function, and in the same way, as the lower jaw of complainant's description and drawings, when modified "as the mere mechanical skill of the calling" would modify such lower jaw when the use of a second thread was desired. The additional illustrative model introduced by complainant on reargument, showing one of defendants' hooks, with metal connection made on the side away from the seam, and the original connection on the side towards the seam cut through, demonstrates the accuracy of these statements far more clearly than pages of description could possibly do. Most persuasive, too, is the fact that with the mere adjustment or change in the timing of complainant's driving mechanism defendants' looper is interchangeable with complainant's looper in complainant's machine. In the original opinion it was held to be immaterial that the loop passed from upper to lower member by a slide instead of by a fall. The further difference now pointed out, viz. that a very slight part of the elevation of the loop in defendants' machine is effected by the upper member, and the elevation completed by the lower member, seems equally immaterial. The change is certainly a trifling one, and we cannot find that there is any functional difference in the operation of the two devices. The object of the looper is to take a loop of needle thread from below the

fabric, and bring it up around the edge of the fabric into position for completing the stitch. In both machines this transit is effected by the successive action of both jaws. The distribution of the period of transit between them must be held immaterial when no functional change is involved in making it earlier in the one than in the other. No cause for modifying the original decision appears.

THE MIAMI.

(Circuit Court of Appeals, Second Circuit. March 1, 1899.)

No. 83.

MASTER AND SERVANT—INJURY TO SEAMAN—MATE'S NEGLIGENCE—FELLOW SERVANTS—LIABILITY.

Where the mate of a vessel, after giving an order to certain seamen, proceeded to assist in its execution, and by their negligence another seaman was injured, the mate, while so engaged, was not acting as a master or vice principal, but as a co-employé; and hence the ship is not liable for the injuries so received.

Appeal from the District Court of the United States for the Eastern District of New York.

This cause comes here upon appeal from a decree of the district court, Eastern district of New York, dismissing the libel. 87 Fed. 757. The suit was for personal injuries sustained by the libellant, the boatswain of the steamship Miami, while lowering a topmast at sea.

Chas. C. Burlingham, for appellant.

J. Parker Kirlin, for appellee.

Before WALLACE, LACOMBE, and SHIPMAN, Circuit Judges.

PER CURIAM. The facts are fully set forth in the opinion of the district judge. We are satisfied from the evidence that the negligent act which caused the precipitate descent of the topmast was not any improper casting off of one of the turns of the chain from around the drum. The subsequent experiments indicate quite clearly that the remaining turns gave a sufficient purchase to control the descent of the topmast, if only the free end of the chain had been held taut, as it might readily have been, and paid out gradually. There is no force, therefore, in any suggestion that an improper or negligent order of the mate caused the accident. That officer undertook to carry out his own order. He cast off the turn (or two), checking any slip of the chain by pressing it against the drum. Had he not released that pressure until the seamen who held the free end had it well in hand, there is nothing in the record to indicate that the chain would have got beyond control. The seamen, however, supposed that he was intending to pay out himself, and had relaxed their hold; while he, supposing they still maintained it, released the pressure, and in a few seconds the weight of the topmast imparted an impetus to the chain which none of them could overcome. The negligence was that of the three men (the mate and the two seamen) in carrying out the instruction to reduce the number of turns around the drum. When participating in this particular work, the mate was not acting