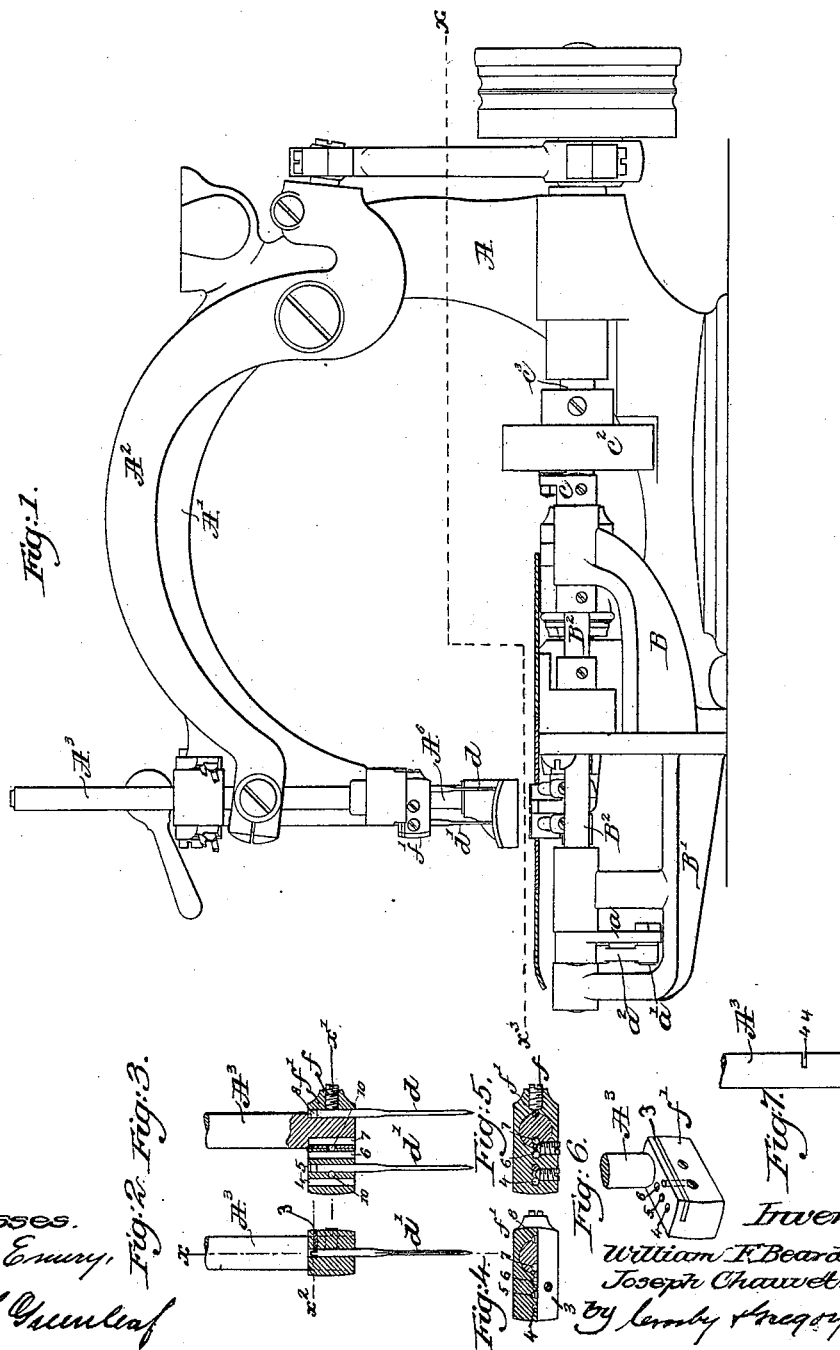


(No Model.)

2 Sheets—Sheet 1.

W. F. BEARDSLEE & J. CHAUVET.
NEEDLE CLAMPING AND LOOPING DEVICE FOR SEWING MACHINES.
No. 419,403. Patented Jan. 14, 1890.



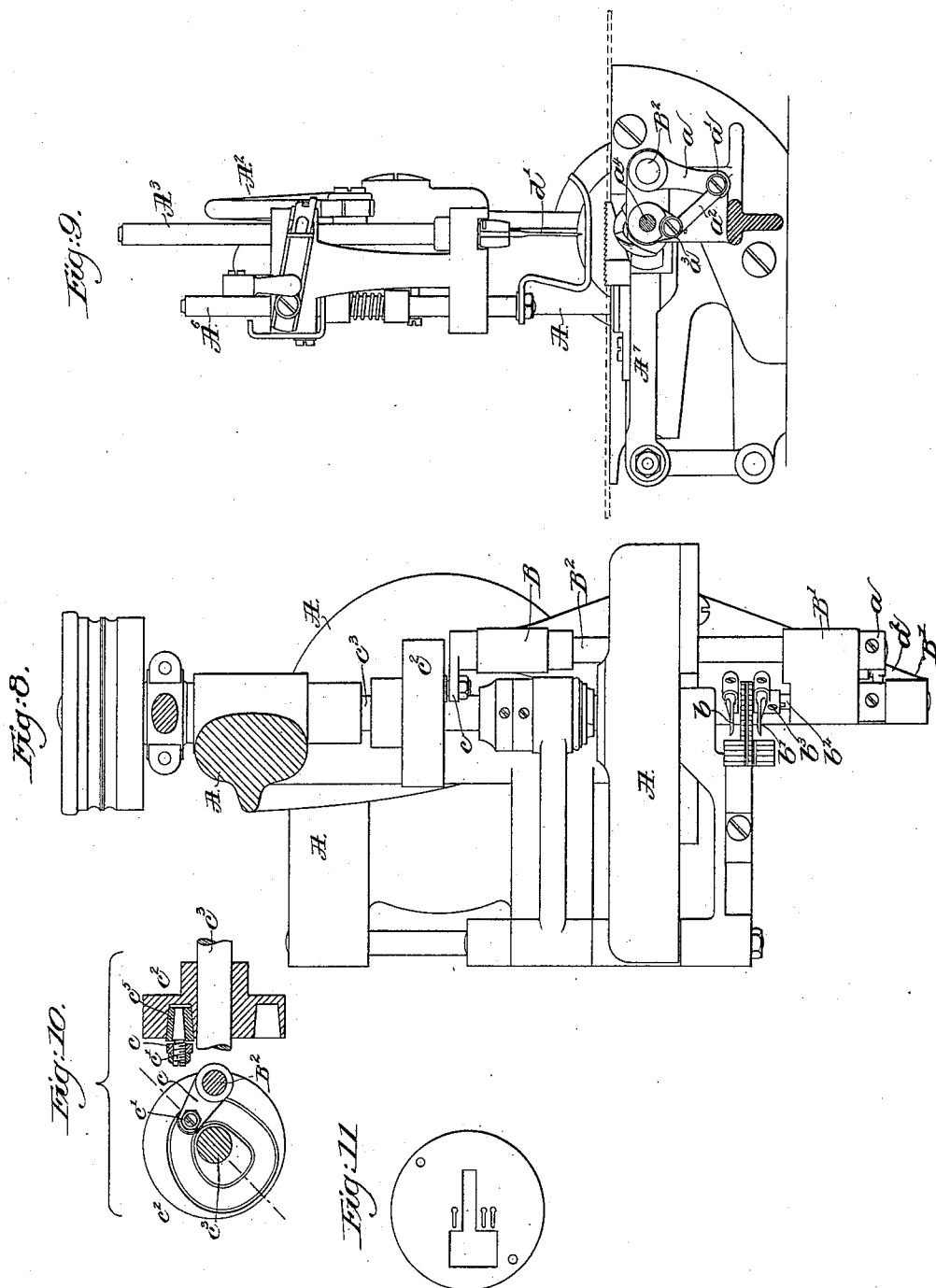
Witnesses.
Frederick L. Emery,
Fred. S. Chumleaf

Inventor.
William F. Beardslee,
Joseph Chauvet,
by Lemmy & Freely Attys

(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

WILLIAM FURMAN BEARDSLEE AND JOSEPH CHAUVET, OF NEW YORK, N. Y., ASSIGNORS TO THE MANUFACTURERS SPECIAL MACHINE COMPANY, OF DANBURY, CONNECTICUT.

NEEDLE CLAMPING AND LOOPING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 419,403, dated January 14, 1890.

Application filed July 20, 1888. Serial No. 280,544. (No model.)

To all whom it may concern.

Be it known that we, WILLIAM FURMAN BEARDSLEE and JOSEPH CHAUVET, of New York, county of New York, State of New York, have invented an Improvement in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object to improve the construction of that class of machines especially adapted to simultaneously sew two or more parallel rows of stitches.

Our invention is herein shown as embodied in a machine for making a chain-stitch, the loops of needle-thread being caught in succession and interlocked one with another by an oscillating hook or looper.

Our invention consists, essentially, in a sewing-machine, a rotating shaft, a cam-hub thereon, a rock-shaft, an arm thereon having a roller-stud, a rock-shaft carrying a plurality of hooks or loopers, and connecting mechanism between the said two rock-shafts, combined with a needle-bar, means to reciprocate it, a needle-holding block having holes for the reception of two needles, one of the said hooks or loopers and needles being adjustable with relation to the other of the said hooks or loopers or needles, substantially as will be described.

Other features of our invention will hereinafter be described, and pointed out in the claims.

35 Figure 1 is a side elevation of a sewing-machine embodying our invention, the cloth-plate being broken away. Fig. 2 is a detail of the needle-bar and its attached needle-holding block and key, the block and key being in section. Fig. 3 is a like view, but with the needle-holding block sectioned in the opposite direction, the block serving to hold two needles, the line of section being in the line x , Fig. 2. Fig. 4 is a section in the line x^2 , Fig. 2, just above the key. Fig. 5 is a section in the line x' , Fig. 3. Fig. 6 is a perspective view of the block attached to the lower end of the needle-bar. Fig. 7 is a detail of the lower end of the needle-bar, show-

ing the transverse slot therein for the reception of the key. Fig. 8 is a section below the line x^3 , Fig. 1, with the cloth-plate removed. Fig. 9 is a left-hand end elevation, partially broken out, of the machine shown in Fig. 1, the cloth-plate being shown by dotted lines; Fig. 10, details showing part of the main shaft, the cam thereon, and roller-stud to enter it, and arms to carry the said stud, and Fig. 11 is a plan view of the throat-plate.

The frame A, having an overhanging arm A', the vibrating needle-carrying arm A², the needle-bar A³, means for actuating the said arm A² from the shaft c^3 , the presser-bar A⁶, the feed-bar A⁷, and means for moving it are and may be all as usual or substantially as shown in United States Patent No. 355,053. The frame-work has fastened to it suitable arms or brackets B B', having suitable bearings for an oscillating shaft B², having at its front end an arm a , to which is jointed by a bolt a' a link a^2 , in turn jointed (see Fig. 9) to a short arm a^3 of an oscillating hook-shaft a^4 , parallel to the shaft B² and having a firm bearing in uprights erected upon the bracket B', the said shaft a^4 having fastened to its inner end the hub of a looper b , and near the said looper the said shaft has secured to it, but in an adjustable manner, preferably by a set-screw b^3 in a groove b^4 , a hook or looper b' . The inner end of shaft B² has fixed to it an arm c , provided with a stud c' and roller c^5 , (shown best in Fig. 10,) which enters a groove in the front side of a cam-disk c^2 attached to the main rotating shaft c^3 , corresponding with the main under-shaft of the usual Willcox & Gibbs machine, the said shaft in practice having suitable feed-cams (not herein shown) by which to actuate any usual or suitable feeding device.

The cam-disk c^2 oscillates shaft B², and the latter oscillates shaft a^4 to cause the loopers carried by it to engage the loops of needle-thread carried by the needles d d' , to simultaneously form, as herein provided for, two parallel rows of stitching; but it will be observed that we may employ more than two hooks or loopers and a needle for each.

The stud c' is of peculiar shape—that is,

its threaded end is of greater diameter than the diameter of the said stud within the roll c^5 entering the cam-groove, such construction enabling the stud to be readily withdrawn from the arm c and the roll c^5 , surrounding it, when it is desired to remove a worn-out roll and put in a new one. The roll c^5 is conical externally and fits a conical groove in the cam c^2 , adjustment of the stud c' longitudinally enabling wear between the roll and cam to be compensated for. In practice these rolls wear very rapidly and have frequently to be changed, and by making the stitch as herein shown it is possible to put in a new roll without disturbing the cams or arms actuated by it, which have to be properly timed, so as to enable the needle forming one part of the stitching mechanism to co-operate in proper time with relation to the looper or device under the bed-plate, which aids in forming the stitch.

The needle-holding block f' (shown in Fig. 6) is grooved longitudinally to receive a key 3 and bored vertically to receive the lower end of the needle-bar A^3 snugly, the needle-bar having in it a transverse slot 44 of the same area as that in the block, so that when the said key is inserted in the said block, as in Figs. 2, 4, and 6, the key enters the slot 44 in the needle-bar and holds the block securely to the needle-bar.

The block f' , as shown, has five holes, as 4, 5, 6, 7, and 8, in any two or more of which may be entered the shanks of the needles to be used, the holes 4 5 and 6 7 being in pairs, the block between the said pairs having like holes 10, in which may be placed a taper-pointed set-screw, (see Fig. 5,) which will hold a needle in the hole at either side of it, the needle d' being adapted to be held in either one of the holes 4, 5, 6, or 7, as may be desired, according to the distance it is desired to place the second row of stitches from the

first row to be made by the needle d and the hook or looper b , the hook or looper b' being adjustable to co-operate with the needle d' in any of its positions. The needle d is held in place by the set-screw f .

The key 3, referred to, by its inner edge enters and partially crosses all the needle-holes 4 to 8 and forms a setting or limiting stop for the shank of the needle, the shank of each needle having a shoulder at a uniform distance from the eye, as best shown in Fig. 2.

We claim—

1. In a sewing-machine, a rotating shaft, a cam-hub thereon, the rock-shaft B^2 and arm thereon, having a roller-stud, the looper-carrying rock-shaft parallel to the said rotating shaft and to the said rock-shaft and carrying a plurality of hooks or loopers, and connecting mechanism between the said two parallel rock-shafts, combined with a needle-bar, means to reciprocate it, a needle-holding block having holes for the reception of two needles, one of the said hooks or loopers and needles being adjustable with relation to the other of the said hooks or loopers or needles, substantially as described.

2. The needle-bar having a slot, as 44, and the longitudinally-grooved needle-holding block f' , provided with a plurality of holes for the reception of the shanks of the needles, combined with the key 3, to enter the longitudinal slot of the said needle-holding block, and with means to confine the said block to the needle-bar and the said needles in the block, to operate substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM FURMAN BEARDSLEE.
JOSEPH CHAUVET.

Witnesses:

A. C. MERRIAM,
B. LAVERY.