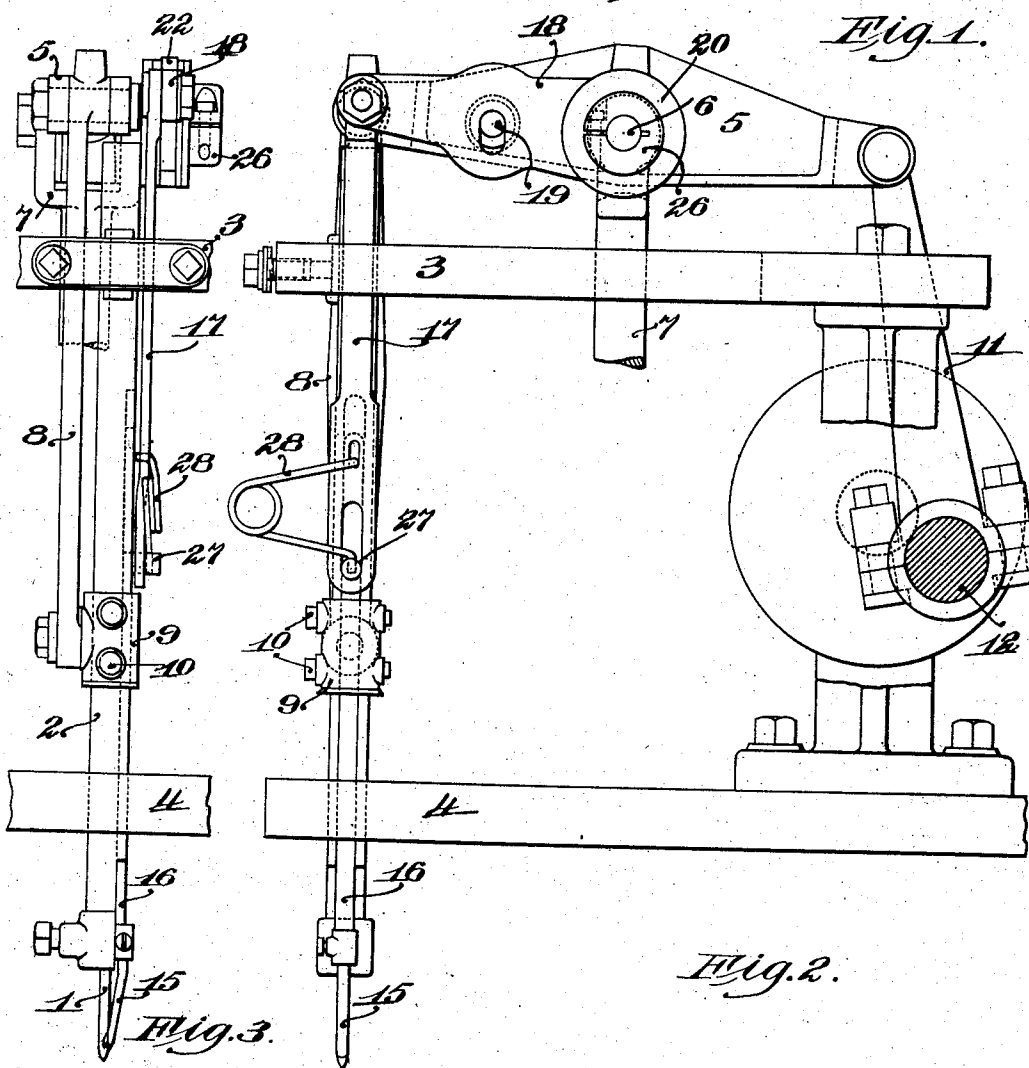
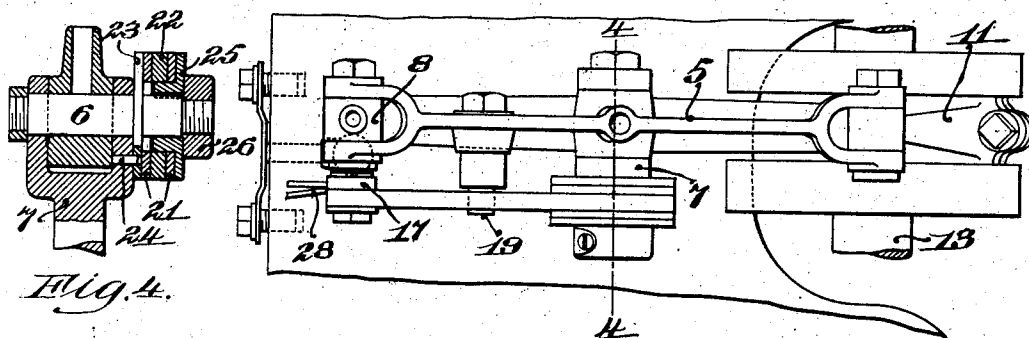


J. R. SCOTT.
SEWING MACHINE.

APPLICATION FILED JUNE 10, 1909. RENEWED JUNE 28, 1912.

1,049,612.

Patented Jan. 7, 1913.



Witnesses
Edward S. Day
A. C. Richardson.

Inventor
Jacob R. Scott
by his Attorneys
Phillips, Van Orman & Smith

UNITED STATES PATENT OFFICE.

JACOB R. SCOTT, OF NORTH WEYMOUTH, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SEWING-MACHINE.

1,049,612.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JACOB R. SCOTT, a citizen of the United States, residing at North Weymouth, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to sewing machines and more particularly to a cast off actuating mechanism for the same.

In machines employing a hook needle and operating to form a chain stitch, a movable guard or slide is generally provided which covers or closes the hook or barb of the needle while the new loop of thread is being drawn through the old loop, the hook being uncovered while the needle is moving in the opposite direction to permit the loop last drawn through the work to be freed from the hook. The cast off, therefore, not only has movement with the needle but also movement relative thereto.

The object of the present invention is to devise a mechanism for producing these desired movements of the cast off which shall be simple in construction, certain in action and not liable to derangement or excessive wear.

In the accompanying drawings which illustrate what is now considered the preferred form of the present invention as applied to a shoe sewing machine employing a straight hooked needle and of the well known McKay type, such as is shown and described with substantial accuracy in United States Patents Nos. 36,163 dated August 12, 1862, and 45,422 dated Dec. 13, 1864, Figure 1 is a top plan view of the needle and cast off actuating mechanisms; Fig. 2 is a side elevation of the same; Fig. 3 is a front elevation of the needle and cast off and a portion of their actuating mechanism; and Fig. 4 is a detail in vertical transverse section on line 4-4, Fig. 1.

In the McKay shoe sewing machine, the straight hook needle 1 is secured at the bottom of a vertically reciprocating needle bar 2 mounted in bearings in the top and bottom plates 3 and 4 respectively of the frame of the machine. The needle bar is actuated by means of a rocking lever 5 pivoted

midway its ends upon a stud 6 carried by the fulcrum post 7. The front end of the rocking lever is connected by the link 8 to the sleeve 9 fixedly secured upon the needle bar by the taper pins 10. The rear end of the rocking lever is connected by the link 11 to the crank pin 12 upon the main shaft 13 of the machine.

The cast off 15 is secured at the bottom of a slide 16 mounted in a guide-way or groove in the needle bar, and this slide is actuated by a link 17 the upper end of which is pivotally connected to the cast off actuating lever 18 pivoted upon the fulcrum stud 6 and given an intermittent up and down movement through a pin and slot connection 19 with the rocking lever 5, the friction clamp 20 on the fulcrum stud holding the lever 18 stationary at the beginning of movement of the rocking lever 5 until the lost motion between the pin and slot has been taken up. As shown in Fig. 4, this friction clamp comprises two friction washers 21 of leather or other suitable material, one on each side of the hub 22 of the cast off lever and clamped tightly against the same between the flange 23 on the fulcrum stud held from rotation by the pin 24 and the clamping piece 25 splined upon the stud and forced toward the flange by the split adjusting nut 26.

In order to permit the needle to pass downwardly through the work leaving the cast off in contact with the upper side of the work, a yielding connection has been provided between the cast off slide 16 and the link 17. This connection, as shown in Fig. 2, is in the form of a pin and slot connection 27, a spring 28 normally holding the pin on the slide at the bottom of the slot.

The operation of the cast off mechanism is as follows: Assuming the needle to have reached the limit of its upward movement with a loop of thread in its hook which is then covered by the cast off, as the forward end of the rocking lever 5 begins to move downwardly, carrying with it the needle bar and needle, the cast off remains stationary, being held in its highest position by the friction device until the pin on lever 5 reaches the bottom of the slot on the cast off actuating lever 18. This does not occur until the hook of the needle has passed entirely beneath the cast off when, as the forward end of the rocking lever 5 continues

to descend, the needle and cast off will move downwardly together, the loop being cast out of the hook of the needle and up around the cast off 15. When the needle reaches the stock it penetrates the same leaving the cast off, however, resting upon the upper surface, the spring 28 at this time yielding and permitting the continued downward movement of the cast off lever 18 and link 17 without moving the cast off. A loop of thread having been laid in the hook of the needle, the latter begins to rise, the actuating lever 18 of the cast off remaining; however, in its lowest position until the lost motion in both of the pin and slot connections 19 and 27 have been taken up, by which time the hook of the needle carrying the new loop has risen through the work and is beneath the cast off. Both needle and cast off then rise together, drawing the new loop through the old loop until the needle reaches its highest position and the cycle of operations is completed.

Having thus described the invention, what is claimed as new, is:—

1. A sewing machine, having, in combination, a hooked needle, means for actuating the same, a pivoted cast-off lever, a friction device normally tending to hold said lever stationary, said device having provision for adjustment to vary the friction, and connections having lost motion between the needle actuating means and the cast-off, substantially as described.

2. A sewing machine, having, in combination, a hooked needle, a rocking lever for actuating the same, a fulcrum for said lever, a cast off actuating lever mounted upon the fulcrum of the rocking lever, a friction device normally tending to hold the cast off actuating lever stationary, a pin and slot connection between the rocking lever and the cast off actuating lever, and yielding connections between the cast off actuating lever and the cast off, substantially as described.

3. A sewing machine, having, in combination, a hooked needle, means for actuating

the same, a cast off, a cast off actuating lever having a hub, friction washers on each side of the hub, means for clamping the friction washers against the hub, lost motion connections between the needle actuating means and the cast off actuating lever, and yielding connections between the cast off actuating lever and the cast off, substantially as described.

4. A sewing machine, having, in combination, a straight hooked needle, a needle bar provided with a groove to receive the cast off slide, a rocking lever for actuating the needle bar, a fulcrum stud for said lever, a cast off slide mounted in said groove, a cast off carried by the slide, a cast off actuating lever pivoted upon the fulcrum stud of the rocking lever, a link pivotally connected at one end to the cast off actuating lever and having a slot at its other end, a pin on the cast off slide entering said slot, a spring normally holding the pin in engagement with the end of the slot, pin and slot connections between the rocking lever and the cast off actuating lever, and a friction device for the cast off actuating lever normally tending to hold said lever stationary, substantially as described.

5. A sewing machine, having, in combination, a hooked needle, means for actuating the same, a cast-off, a pivoted cast-off actuating lever provided with a hub, a friction device normally tending to hold said lever stationary, said device comprising a friction washer and means held from movement with the lever for clamping the washer against the hub of the lever, and connections having lost motion between the needle actuating means and the pivoted lever, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

JACOB R. SCOTT.

Witnesses:

WARREN G. OGDEN,

ALFRED H. HILDRETH,