

UNITED STATES PATENT OFFICE.

THEODORE S. WASHBURN, OF ROCHESTER, NEW YORK, ASSIGNOR TO EZRA B. BOOTH, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 30,031, dated September 11, 1860.

To all whom it may concern:

Be it known that I, T. S. WASHBURN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an end elevation of the front of the machine; Fig. 2, a side elevation of the looper H and its adjuncts, shown detached from the machine. Fig. 3 is a front elevation of the looper and cam. Fig. 4 is a plan view of the same. Fig. 5 is an enlarged detached perspective view of the cam F. Fig. 6 is a detached view of the feeding-plate *r'*.

Similar letters refer to corresponding parts in all of the figures.

My improvements relate to the method of forming the stitch, and to preventing a reverse or back motion of the revolving parts of the machine.

The general form of my machine is sufficiently indicated in Fig. 1, in which A is the driving-wheel, having on its axis a gear-wheel, B, which drives pinions above and below it, (not seen in the view,) one of which operates the needle-bar C and feed-plate D by mechanism in common use for that purpose, and the other rotates the cam F.

E is the spool which supplies the needle *g* with thread, and J that of the lower thread.

K is a thumb-screw for adjusting the feed.

The needle *g* works through the plate L by the side of the cam F, where it is brought in juxtaposition with the beak of the looper H, which consists of a curved piece of metal pivoted on *d* at its lower extremity, while its upper end is held by the coiled spring *e* in contact with the cam F. The pivot *d* is surrounded by a coiled spring, *h*, Figs. 2 and 4, which allows it to yield laterally to the influence of the cam, as will be hereinafter explained.

The cam F is of a disk form, having a spur, *m*, projecting boldly from its face at its periphery on one side, and a crescent-formed

cam, *o*, on the other. As the cam F revolves, the spur, acting against a projecting part, *p*, of the looper, carries it back to the position shown in Fig. 1, (the needle having taken the loop from the lower thread, which is passed through two holes in the beak, as represented by the blue line,) when, the spur having passed the point of *p*, the looper suddenly darts forward, its beak passing through the loop formed by the upper thread, which is then immediately drawn up by the rising of the needle. As the looper springs forward by the contraction of the spring *e*, it begins to rise on the incline *o* of the cam, which moves it laterally from the track of the needle so far that when the needle descends it is certain to pass between the looper and the lower thread, and the end of the beak begins to recede, and it in turn draws a loop around the needle, and throws off from its point the loop of the upper thread, previously taken, and the two are drawn in, forming the "double-loop stitch." A needle-guide (partly shown at *e*, Fig. 2) is employed in the usual manner to form the loop on the right side of the needle. As the looper falls off of the spur *m*, it strikes the center pin, *i*, where it rests during about three-fourths of the revolution of the cam-disk, during which period it is subjected to the lateral motion of the cam, as described, for the purpose of spreading the lower thread for the succeeding loop. As the spur passes the point of *p*, it falls into a deep notch or recess, *r*, in the body of the looper, which acts as a stop to prevent the motion of the machine being reversed, by which means, if the treadle acts in the wrong direction at starting, the cam-wheel can only turn backward a part of a revolution. This is an important feature, as it prevents the snarling of the thread and much inconvenience arising therefrom in working the machine.

I construct the feeding-foot *r'* with an elastic sole or spring-pressure pad, which consists of the small serrated plate *s*, pivoted at or near the front end of the foot, and provided with a light spring, *t*, which bears upon its upper side, and gives a slight elastic pressure on the cloth, sufficient to insure the holding of the

material firmly. This gives great certainty to the feed without exerting any injurious pressure on the cloth.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the spur *m* on the cam *F* with the abrupt notch or recess *r* in the looper *H*, when so arranged as both to allow the looper to more speedily enter the loop of the

needle-thread and to prevent any reverse motion of the parts at the most critical moment in forming the stitch, substantially as herein specified.

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Witnesses:

J. FRASER,
S. J. ALLIS.