

D. T. WARD.
Sewing Machine.

Patented Jan. 2, 1855.

No. 12,146.

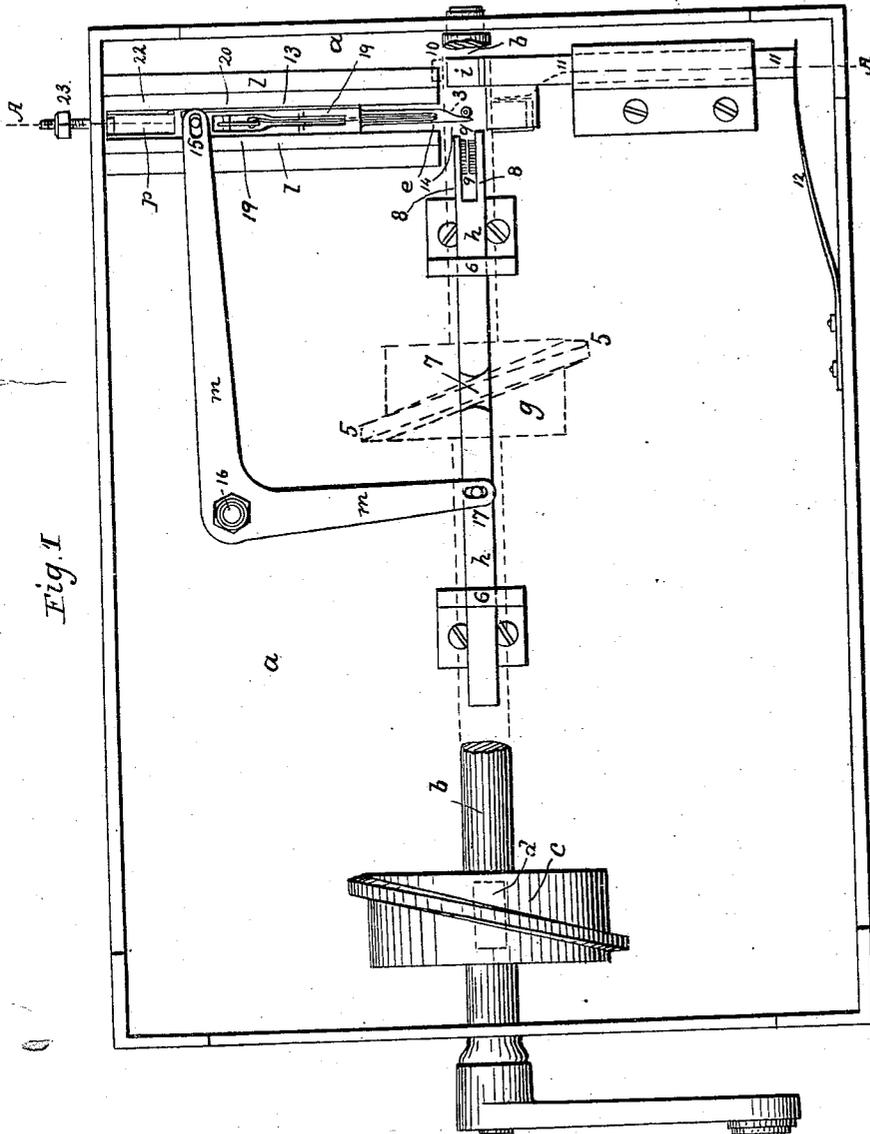


Fig. 1

Witnesses:
Samuel H. Eberrell
Thomas G. Ward.

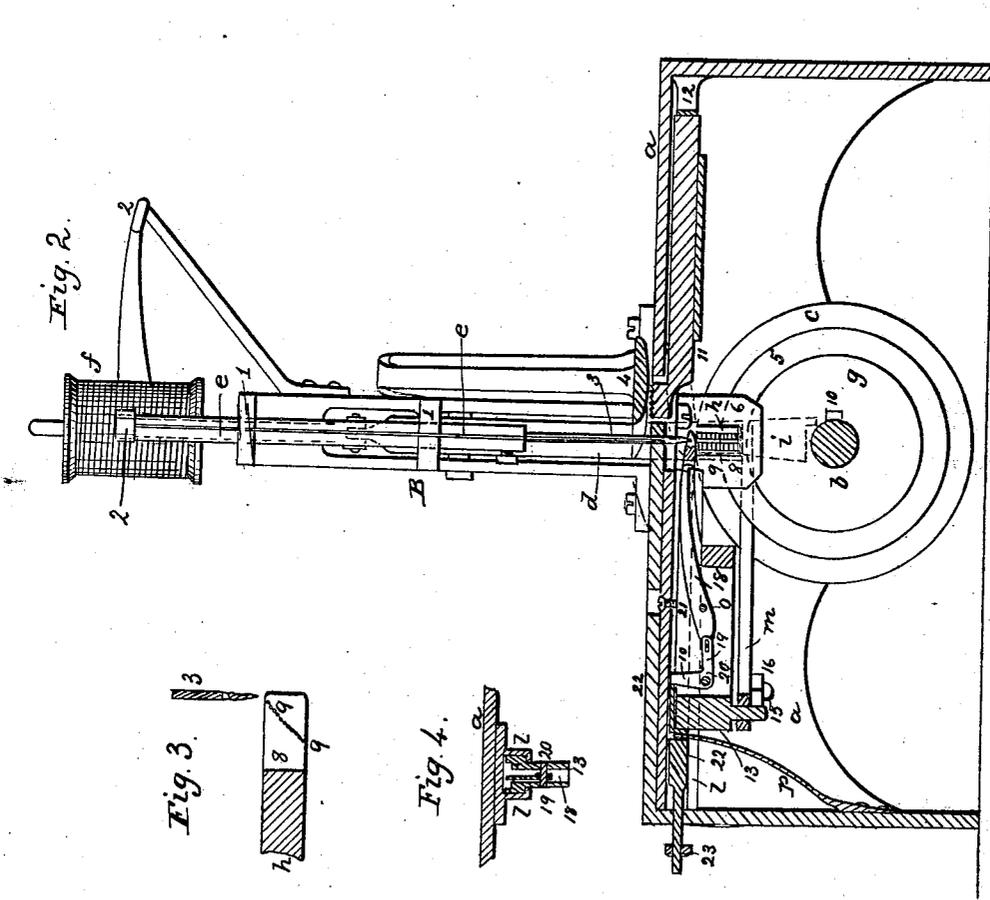
Inventor:
Samuel T. Ward.

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2 Sheets—Sheet 2.

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Witnesses:

Samuel W. Ferrell,
Thomas C. Kauler.

Inventor:

Samuel T. Ward.

UNITED STATES PATENT OFFICE.

DANIEL T. WARD, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 12,146, dated January 2, 1855

To all whom it may concern:

Be it known that I, DANIEL T. WARD, of Newark, in the county of Essex and State of New Jersey, have invented, made, and applied to use certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a plan of the machine from the under side of the bed. Fig. 2 is a cross-section through line A A, representing the needle and needle-carrier in elevation. Fig. 3 is a section of the loop-catcher, and Fig. 4 is a cross-section of the looper and slide.

The like marks of reference denote the same parts in all the figures.

My improvements consist in means for drawing out the thread, so as to form a loop as the needle rises to insure the passage of a shuttle through the same, or the looper in single-thread machines.

a represents any frame or bed-plate of the desired size and shape. *b* is a shaft set in suitable journal boxes or bearings in the bed-plate, and driven by any competent power. *c* is a cam of the required size and shape to communicate (by a rib or groove in the face thereof) a vibrating motion to the vertical part of the lever *d*, which is set in an arm, B, projecting over the top of the bed-plate, and provided with slides 1 1 at the end to receive the needle-carrier *e*, to which the horizontal arm of the lever *d* is connected by a link. These parts so described can be of any desired form, size, or character, as usual, so as to communicate to the needle 3 the necessary vertical motion, and therefore need not be further described.

f is the spool, and 2 the thread-guide, as usual, and 4 is a spring-clamp to hold down the goods operated on.

10 is a cam on the shaft *b*, taking an arm, *i*, on a slide, 11, and kept toward the shaft *b* by a spring, 12, which slide has a plate passing through the bed, to which motion is communicated by said cam 10 in its rotation, and feeds the cloth; but this feeding motion does not form any part of my invention. Therefore any other means may be used for this purpose.

g is a cam on the main shaft, which by a rib, 5, (or groove, if preferred,) communicates

motion to a slide, *h*, set in guides 6 6. The cam *g* and shaft are shown dotted in Fig. 7, as if removed to show this slide *h*, 7 being the notch in which the rib 5 operates. 8 is a forked end to the slide *h*, in the faces of which are diagonal rows of bristles facing each other, so that the points of the bristles nearly touch each other. The operation of this part is as follows: The parts are so timed and adjusted that the slide *h* comes up as the needle descends. Thereby the point of the needle passes between the rows of bristles, and, as the needle draws up again, the bristles hold onto the thread and draw the same out sidewise as the slide *h* retires, holding onto the same just sufficiently to form a good loop for the shuttle, in case of a two-thread machine, or the looper in a single-thread machine, to pass through, and that with unerring certainty, the bristles releasing the thread when pulled on to allow the needle to operate again, and that without wear or any tendency to break the thread. Springs might be used in place of the bristles, but I do not prefer the same.

It will be evident that if the slide *h* and fork *g* were used without the bristles the fork would form a guide in which the loop would be formed by the retraction of the needle, preventing said loop from turning to either side out of the way of the shuttle or looper, and the very retraction of said fork to allow the looper or shuttle to pass would pull out said loop even by the friction should the thread be against one of the interior faces of the fork.

l are slides attached to the under side of the bed-plate, which carry a sliding carriage, 13, having a point or projection, 14, which passes through the loop in the thread as the carriage 13 is slid along in the slides *l* by means of a right-angle lever, *m*, set on a fulcrum, 16, and receiving motion from a pin, 17, on the slide *h*, taking a slotted hole in one arm of said lever, and the other arm taking by a similar hole the pin 15 in the carriage 13. This carriage 13 and point 14 have a slot or mortise through them vertically, in which is a lever, 18, on a fulcrum, *o*, at the outer end of which is a point, *o'*, projecting from the under side of said lever, and at the other end a small bent lever, 19, on a fulcrum, 20, is connected, so that one arm of said bent lever is vertical. We will suppose that the point 14 of the looper is passing into the loop, the le-

ver 18 is in the position shown in Fig. 2, with the hook or point *o'* retracted within the lower edge of the slot in the point 14, and when said point 14 is sufficiently projected through the loop the upper arm of the lever 19 takes a screw point or projection, 21, on the under side of the bed-plate, and a slight continuation of the motion of the slide or carriage 13 causes the point *o'* to be depressed below the lower surface of the point 14, which catches the thread as the slide 13 is withdrawn by the operation of the lever *m*. The parts are so timed that the needle descends just before the point 14 has entirely moved back, catching the loop off the point of the looper by passing down by the side thereof. At this moment the lever 19 comes in contact with the sliding spring-stop 22, which reverses the said lever 19, raising the point *o'*, and dropping the loop as the needle passes through the same. This spring-stop 22 is fitted so that it slides in the bearings *l*, and is kept toward the slide 13 by means of a spring, *p*, which spring yields as the slide 13 and stop 22 move along back together, and in order to regulate the exact position of the

stop 22 toward the needle, and by consequence the retraction of the point *o'*, so as to drop the loop at the right time, I continue a small screw-rod through the side of the bed-plate, and adjust the amount that the spring *p* is allowed to carry said stop by the nut 23.

I do not claim any particular method of moving the needle; neither do I limit myself to using my improvements with the arrangement of needle and levers to the same herein shown; but

What I desire to secure by Letters Patent is—

The sliding fork 8, with or without the bristles 9, to detach the thread from the sides of the needle or form a guide to the loop for the passage of the looper or shuttle, in the manner and as described and shown.

In testimony whereof I have hereunto set my signature this 27th day of June, 1854.

DANIEL T. WARD.

Witnesses:

LEMUEL W. SERRELL,
THOMAS G. HAROLD.