

NETTLETON & RAYMOND.
Sewing Machine.

No. 17,049.

Patented April 14, 1857.

Fig. 3.

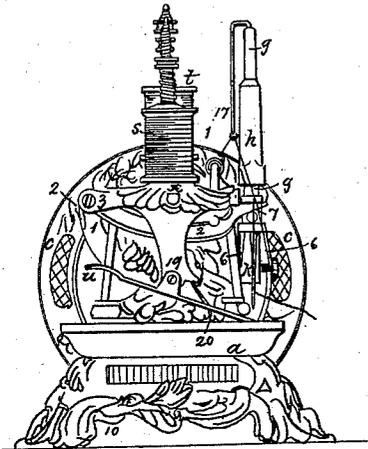


Fig. 1.

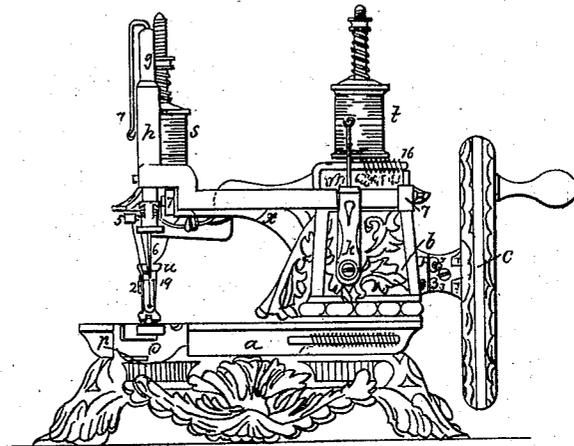


Fig. 4.

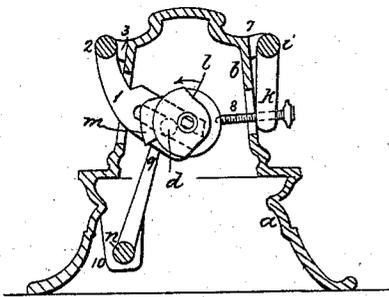


Fig. 2.

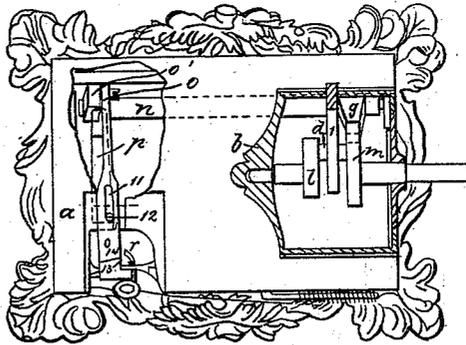


Fig. 5.

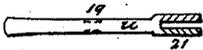


Fig. 7.

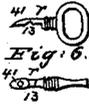


Fig. 6.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 17,049, dated April 14, 1857.

To all whom it may concern:

Be it known that we, WILLFORD H. NETTLETON and CHARLES RAYMOND, both of Bristol, in the county of Hartford and State of Connecticut, have invented, made, and applied to use certain new and useful Improvements in Sewing-Machines; and we 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 side elevation of the machine. Fig. 2 is a plan of the same with the upper parts removed, and the bed-plate also partly removed to show the parts beneath the same. Fig. 3 is an end elevation, and Fig. 4 is a side view, of the cams made use of for moving the machine.

Similar marks of reference denote the same parts.

The nature of our said invention consists in a peculiar construction of notched looper, to which a sidewise motion is given, as herein-after detailed; also, in a peculiar construction of press-bar, by which the feeding motion of the cloth has a tendency to stretch the said cloth widthwise, and avoid any puckering that might arise from the feeding apparatus.

In the drawings, *a* is the bed of the machine, suitably shaped or ornamented.

b is a box-standard containing the driving-shaft and cams, and *x* is an arm supporting the working parts above the bed.

c is the main or driving wheel, propelled by a handle or other suitable device, and rotates the main shaft and crank *d*, which plays in a slot in the arm *l*, and gives a vibrating motion to the rock-shaft 2, set in bearings 3 3, causing the arm *e* to ascend and descend and propel the needle-bar, as next set forth.

4 is a socket receiving a suitable needle, to which the same is secured by the screw 5, and said socket is on the end of the needle-bar *g*, which slides in the pipe *h*, set on an arm from the vibrating shaft *i*. This shaft *i* is set in bearings 7 7, and provided with a spring, 15, that always tends to throw the depending arm *k* toward the cam *l* on the main shaft, (see Fig. 4,) and the amount of motion given to said arm, shaft, and needle is regulated by a set-

screw, 8, the point of which, taking the cam *l* sooner or later, regulates the extent that the arm *k* is pressed away from the frame, and consequently the length of stitch. The parts are so timed and the cams so shaped, that the needle descends through the cloth, and then the cam *l* comes into operation to move the needle sidewise and feed the cloth along the desired amount, and retain the needle in that position until the same has been drawn out clear of the cloth, when the cam *t* passes clear of the screw-point 8, and the arm *k* is forced toward the standard *b*, and the needle returned to place, ready for taking another stitch. If the needle alone were used as a feed, as has heretofore been done, the power required for feeding the cloth would be apt to bend the needle, particularly such needles as are used for fine sewing. We have therefore introduced the feeding-points 6 6, attached to the socket 4, which passes down and into the cloth at the time the needle reaches its extent of downward motion, and feed the cloth along by the sidewise motion of the needle carriage or bar, and entirely relieve the needle.

u is a press-bar kept down onto the cloth by a spring, 20, and said bar is formed as a lever on a fulcrum, 19, so that it can be raised for inserting the articles to be sewed, and the under side of said press-bar, on each side of the slot in which the needle and feeding-points operate, is formed with grooves 21, diverging from each other, as seen in Fig. 5, so that as the cloth is fed along the divergence of the grooves stretches the seam widthwise, rendering the seam flat and preventing any puckering or wrinkling by the needle-feed points.

m is a cam (see Fig. 4) properly placed and shaped to act on a lever, 9, on the shaft *n*, set in bearings 10, and provided with a suitable spring, *p*, to keep the lever 9 to the cam *m*.

o' is a lever at the other end of the shaft *n*, connected to a slide, *o*, in which a slot, 11, is formed, as seen in Fig. 2, with a straight part, and then a diagonal part at the end next the needle. 12 is a pin in this slot, passing into the bed of the machine. The end of this slide *o* is formed with an arm to receive the stitcher or looper *r*, which has an eye, 14, and a notch, 13. (See also Fig. 6.)

s is a spool supplying thread to the needle,

and the thread passes through the end of a helical relieving-spring, 16, and through a guide, 17, on the needle-bar *g*.

t is a spool supplying thread through the end of the helical relieving-spring 18 to the eye of the stitcher or looper *r*.

The spools being confined by the necessary force from a spring and nut or similar means, the operation is as follows: The needle in descending passes into the notch 13 of the looper. The said looper then is forced diagonally backward by the slot and pin 12, and then back the required distance to leave a loop around the needle. At this moment the lever 9 is relieved from the cam *m*, and the looper takes a stitch or loop from the side of the needle-thread, which is left over the looper as the needle ascends and the first loop is dropped by said needle, and thus the sewing progresses, forming loops on one side and stitches through the material sewed.

In cases where but one thread is to be used we substitute the looper *v*, Fig. 7, for the looper *r*. This looper *v* is formed with the notch 13, into which the needle descends through the previous loop left around the looper and draws the same off as the looper recedes diagonally, and thus on returning said looper passes into the needle or thread on the needle, taking off another loop therefrom.

In place of the slot 11 and pin 12, cam-shaped projections on the sides of the bar *o* may be used, acting against stationary set-screws to give the sidewise motion to said bar; and in place of said slide *o* the rock-shaft *n* might be placed on the other side and carry the looper *r* or *v* on the end of an arm, the sidewise motion to clear the notch in the looper

from the needle being given the arm by a stationary cam, as aforesaid.

We do not claim a single or double loop stitch, as that is well known; neither do we claim a needle-feed, as this has also been used; neither do we claim the slide-cam *o* and slot 11 in themselves, as these have before been used; and we are well aware that diverging grooves have been used for stretching the cloth widthwise in shearing and similar machinery; but we are not aware that the press-bar has ever before been grooved in the manner shown to prevent the needle puckering the cloth as it is fed along in the manner shown. Therefore

What we claim, and desire to secure by Letters Patent, is—

1. Forming the face of the press-bar next the material to be sewed with diverging grooves to keep the cloth stretched widthwise and prevent puckering under the operation of the needle, substantially as and for the purposes specified.

2. The looper *r* or *v*, formed with the notch 13, into which the needle enters to insure the taking of a loop, when said looper is combined with the slide *o* and slot 11, or their equivalents, for giving the necessary sidewise motion, for the purposes and substantially as specified.

In witness whereof we have hereunto set our signatures this 6th day of January, 1857.

WILLFORD H. NETTLETON.
CHARLES RAYMOND.

Witnesses:

H. E. FICKETT,
GEO. E. FERRY.