

W. SAGE.
Sewing Machine.

No. 17,717.

Patented June 30, 1857.

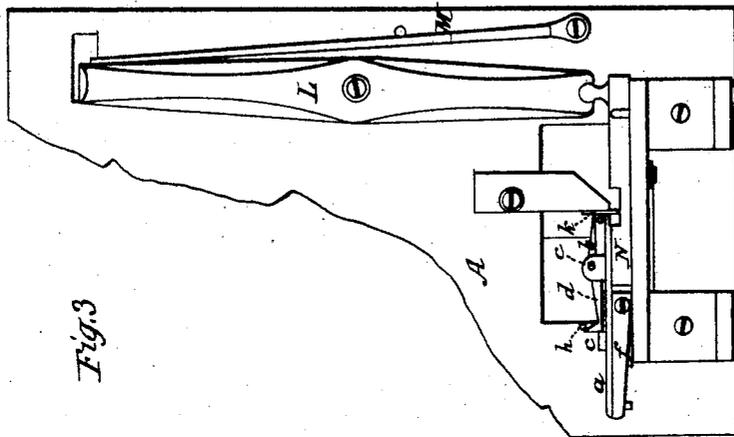


Fig. 3

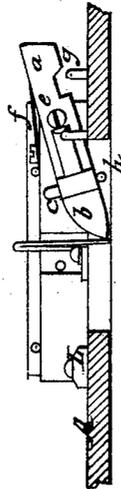


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM SAGE, OF DURHAM CENTRE, CONN., ASSIGNOR TO HENRY SAGE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 17,717, dated June 30, 1857.

To all whom it may concern:

Be it known that I, WILLIAM SAGE, of Durham Centre, in the county of Middlesex and State of Connecticut, have invented certain Improvements in Sewing-Machines, the construction and operation of which I have described in the following specification and illustrated in the accompanying drawings with sufficient clearness to enable competent and skillful workmen in the art to which it pertains or is most nearly allied to make and use my invention.

My invention consists in, first, combining a spring stop-plate with the needle and loop-former to prevent the thread from getting behind the needle, and to insure the perfect action of the former in holding the stitch, as hereinafter set forth; second, giving the point of the loop-former an upward motion as the needle rises to its highest position to relieve the loop from strain, and a return motion downward as the needle returns, as set forth; third, the construction of the former and its arrangement in connection with the auxiliary parts, by which its point is made to open as it rises to its highest position to receive the point of the needle within the loop, and close when down to receive the next loop, as set forth.

In the accompanying drawings, Figure 1 is an end elevation of my improved machine, the foundation being represented in section to show some of the under work, and part of it broken away to save room in drawing. Fig. 2 is a side elevation, also showing the foundation in section and broken away, as before. Fig. 3 is a plan of part of the machine placed in an inverted position. Fig. 4 is a detail elevation, showing the loop-former and some of the concomitant parts also inverted.

A is the base-plate or casting, which forms the foundation of the machine, from which the post B arises, which, with its arm C, supports the upper working parts.

D is the principal shaft, from which the operating parts receive their motion.

E is the fly and band wheel, and F is a wrist, by which it may be turned by the hand.

G is a crank, which, by means of the connecting-rod H, communicates motion from the shaft to the slide I, which carries the needle J. The cam K gives motion to the vibrating lever L, to operate the loop-former, said lever I being kept up to the cam by a spring, M.

The loop-former is made of two parts, *a* and *b*, the part *b* being hinged in the middle upon the pin *c* to the part *a*, and the points of the two kept together by a spring, *d*. The part *a* is hung upon a screw or journal, *e*, to the slide N, which is operated by the lever L. A spring, *f*, attached to this slide, presses upward upon the heel of the loop-former to keep the point of it down when it is not required to rise.

The cam K is so formed, and the parts connected are so arranged, that when the needle is in its highest position the loop-former will occupy the position here represented. This is attained by the incline on the principal part *a* of the loop-former striking the pin *g*, which, as the former advances and the needle rises, forces the point of the loop-former upward to relieve the loop as the needle approaches its highest position. At the same time the heel of the jaw strikes the pin *h*, which opens the point of the loop to allow the needle in its descent to pass between them, and thus enter the loop, said loop being, by the inclination of the points, held up to the spring stop-plate *k*, which is pressed away from the needle by the points of the former to allow the needle to pass inside the loop. As the needle completes its descent the loop-former is drawn back, so that its points descend and retire from the plate *k*, which now springs up to the needle, and the loop is released from the former. As the needle commences its rising motion the position of the plate *k* in immediate contact with it insures such a position of the loop that the loop-former will enter and secure it with certainty as it returns against the plate, which it does as soon as the loop is slackened enough to admit it with certainty. As soon as the point of the needle rises above the loop-former the form of the cam K allows the spring M to press the loop-former up against the plate *k* and push it away from the needle, and at the same time the points of the loop-former are raised and spread to open the loop by the pins *g* and *h*, the raising of the points of the loop-former allowing them to spread and open the loop without strain upon the thread. These parts remain in this position till the needle descends into the loop, when the points of the loop-former descend and retire, and the plate *k* returns to the needle, as before described. The cloth is fed forward by a pawl, *l*, which is

hung upon the lower end of the slide P, and kept to its work by the weight Q. As the needle rises from the cloth the wrist G strikes a cam, R, attached to the slide P, pressing it down, and thus feeding the work forward. The slide is returned against the head of the adjusting-screw *q* by the spiral springs *m*. The stroke of the slide P and the consequent feed is regulated by the adjusting-screw *q*.

The particular improvements of which I claim to be the original and first inventor are—

1. Combining the spring stop-plate with the needle and loop-former, as described, for the purpose set forth.

2. Giving the point of the loop-former an upward motion as the needle rises and the point of the loop-former expands to form the loop, substantially as described, and for the purpose stated.

3. The construction of the loop-former and its arrangement in connection with the trip *h* and slide N, by which it is made to open to spread the loop for the reception of the needle and close to enter the next loop, as set forth.

WILLIAM SAGE.

Witnesses:

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THOS. P. HOW.