S. BORTON.

Sewing-Machine.

No. 214,089. Patented April 8, 1879.

Fig. 1.

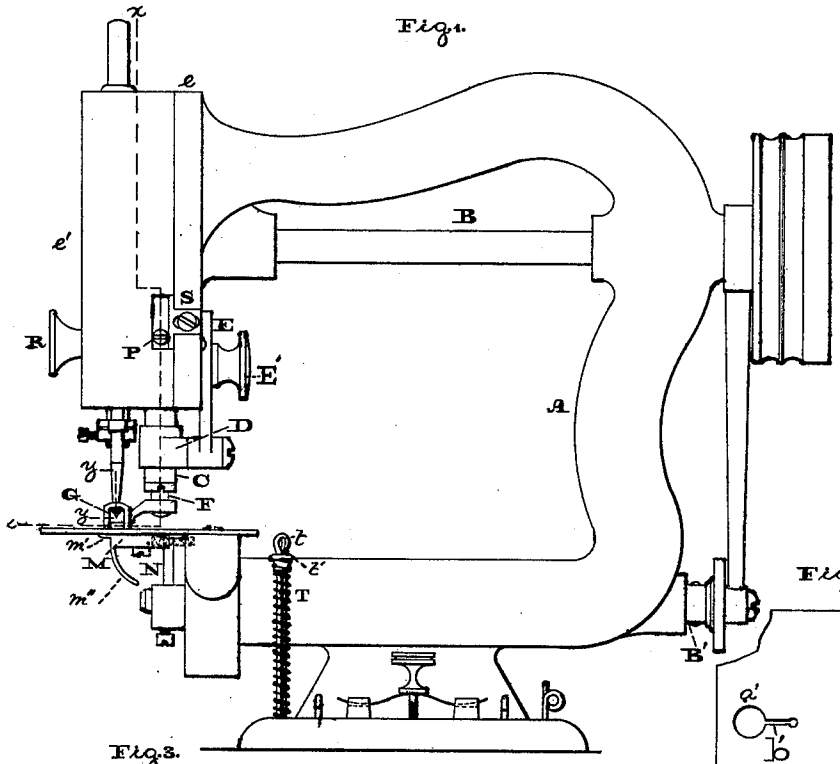


Fig. 7.

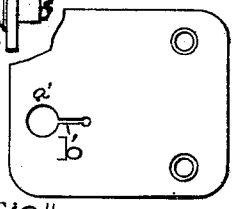


Fig. 3.

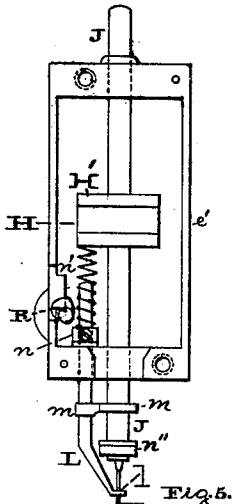


Fig. 2.

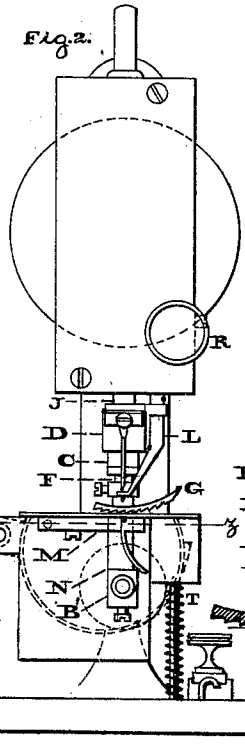


Fig. 4.

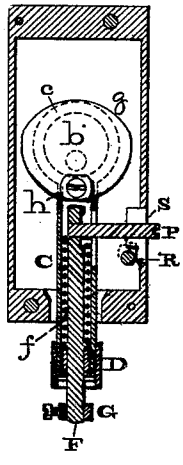


Fig. 5.

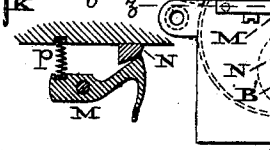
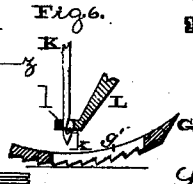


Fig. 6.



Witnesses:

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A. F. Kircher

Inventor:

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UNITED STATES PATENT OFFICE.

STOCKTON BORTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO O. F. DAVIS, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **214,089**, dated April 8, 1879; application filed November 25, 1878.

To all whom it may concern:

Be it known that I, STOCKTON BORTON, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Sewing-Machines, which improvement is fully set forth in the following specification.

In the drawings, Figure 1 is a side elevation of a sewing-machine embodying my invention. Fig. 2 is a front view thereof. Fig. 3 is a view of the head of the machine with the covering removed. Fig. 4 is a vertical section taken on line *x x*, Fig. 1. Fig. 5 is a horizontal section taken on line *z z*, Fig. 2. Fig. 6 is a section of a detached portion, taken on line *y y*, Fig. 1; and Fig. 7 is a top view of the cloth-plate.

My invention relates to that class of sewing-machines in which the work is fed by a four-motioned presser-foot, which rises when the needle is in the fabric.

My improvement relates to the hereinafter-described combination of the driving-shaft, eccentric, yoke, sleeve, spring, feeding presser-bar, and adjustable guide; also, to the combination of a rock-shaft, passing through a lower arm of the goose-neck, with a vertical arm upon said shaft, the looper, and a spring, all of the above-said parts being constructed and adapted to operate substantially as hereinafter described.

In the drawings the head of the machine is secured to the upper end of an ordinary goose-neck, A.

B represents the driving-shaft, and *g* a disk, which actuates the needle-bar J. This needle-bar has the usual reciprocating movement, a suitable or ordinary guide, L, being employed for the purpose of pressing down upon the fabric while the hooked needle passes through the same. Upon the shaft B, and in rear of the disk *g*, is an eccentric, *b*; and upon the upper end of a cylindrical sleeve, C, is a yoke or ring, *c*, arranged to encircle the said eccentric, the yoke and eccentric being shown in dotted lines, Fig. 4. The sleeve C carries a rod or bar, F, to which the presser-foot G is secured.

In order that the presser-foot shall have the requisite vibratory or oscillatory movement for the purpose of feeding forward the work, the sleeve passes through an ordinary swiveled guide, D.

The plate E, to which the guide is swiveled, is made adjustable upon the head of the machine by means of a set-screw, E′.

Within sleeve C, and around the bar F of the presser-foot, is arranged a coiled spring, *f*, fastened in any suitable way at its upper end to the sleeve, and bearing at its lower end against a shoulder formed upon the bar, whereby the presser-foot will act upon the work with a yielding pressure.

The presser-bar may be elevated during the elevation of the needle-bar by means of a suitable cam mounted upon rod R, the cam being arranged to strike against an arm, P, which extends from the presser-bar.

To the under side of the cloth-plate is pivoted a looper, M. This looper has a short horizontally-projecting finger, *m′*, and also a downwardly-projecting finger, *m″*, the latter being curved inwardly, as shown.

Upon the forward end of a rock-shaft, B′, which passes through a lower arm of the goose-neck, is an arm, N, arranged to vibrate in a vertical plane and actuate the looper.

Spring-pressure applied to the heel of the looper, as shown in Fig. 5, tends to maintain the rear edge of the looper in contact with the arm N, whereby during the vibrations of the arm the looper will be alternately thrown forward and forced back.

During the descent of the needle and guard the sleeve C is elevated through the medium of the eccentric and encircling-yoke, but not sufficiently to raise the presser-foot until after the lower extremity of the guard is brought down upon the work and the needle commences to pass through the same. After the presser-foot has been raised, and the sleeve C has reached the end of its upward stroke, both the sleeve and the presser-foot will descend until the latter is arrested in advance of the sleeve by pressure upon the work.

The needle has an ordinary hooked or barbed end, and the guard an eye, as usual in such machines.

The looper is operated during the vibration of the needle-bar and needle by the rock-shaft

below the work-plate, and, on being thrown forward, assists the needle in forming a chain-stitch, the loops of which are above the fabric. This operation need not be further described.

What I claim as my invention is—

1. The rock-shaft B′, passing through a lower arm of the goose-neck, and the vertical arm N upon said shaft, in combination with the looper M and spring *p*, substantially as shown and specified.

2. The combination, substantially as hereinbefore set forth, of the driving-shaft B, eccentric *b*, yoke *c*, sleeve C, spring *f*, feeding presser-bar F, and adjustable guide D, as and for the purposes specified.

STOCKTON BORTON.

Witnesses:

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