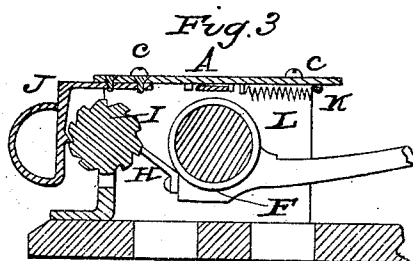
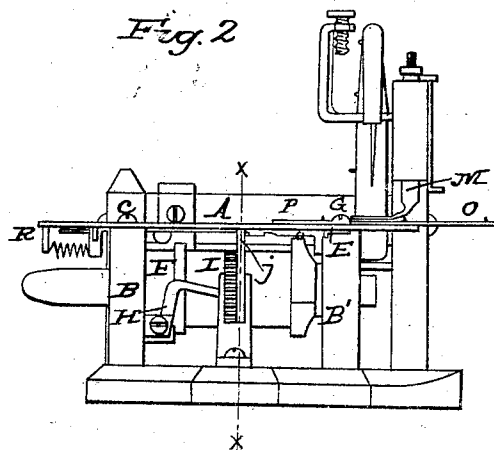
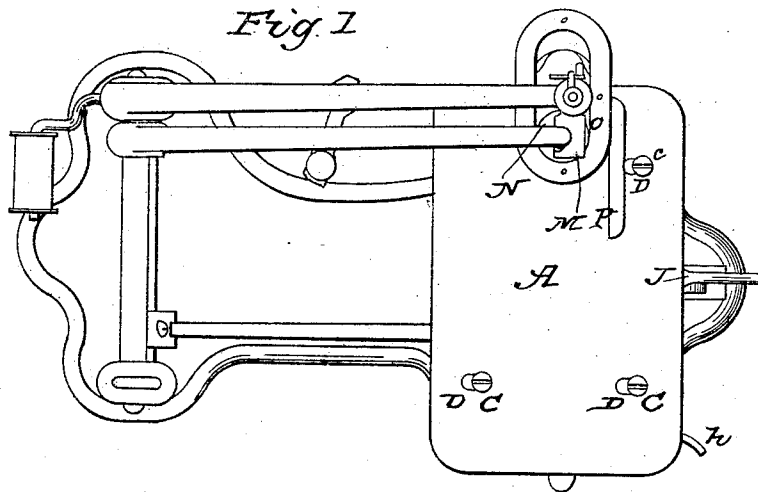


W. B. BARTRAM.

Sewing Machine.

No. 50,870.

Patented Nov. 7, 1865.



WITNESSES

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UNITED STATES PATENT OFFICE.

WALKER B. BARTRAM, OF REDDING, ASSIGNOR TO HIMSELF AND HENRY B. FANTON, OF DANBURY, CONNECTICUT.

IMPROVEMENT IN BUTTON-HOLE SEWING-MACHINES.

Specification forming part of Letters Patent No. 50,870, dated November 7, 1865.

To all whom it may concern:

Be it known that I, WALKER B. BARTRAM, of Redding, in the county of Fairfield and State of Connecticut, have invented certain Improvements in Sewing-Machines, of which the following is a specification.

My invention consists of certain improvements attached to a sewing-machine, to adapt it to making button-holes, as hereinafter more fully described.

In the drawings, Figure 1 is a top view of a sewing-machine with my improvement attached. Fig. 2 is an end view of the same. Fig. 3 is a vertical longitudinal section of the front part of the machine through the line *xx*, Fig. 2.

The general construction of the machine to which my improvements are represented as being attached is that of the well-known Wheeler & Wilson sewing-machine.

In my improved machine the cloth-plate A is kept in place upon the supports B B' by screws C, passing through slots D in the said plate, so as to allow the plate to have a backward-and-forward motion to enable the stitch to be transferred alternately from the cloth to the slit which forms the button-hole, as hereinafter more fully described.

The play of the plate A is regulated by stops on the under side of the plate acting against the supports B B', one of which stops is shown at E, Fig. 2.

To the eccentric-strap F is attached, in the manner represented in Fig. 2, an arm, H, which, as the eccentric revolves, takes hold of one of the teeth of the spur-wheel I and turns it, for the purpose hereinafter stated.

The spur-wheel I is double, or rather the half of said wheel which is shown in Fig. 2 is furnished with a set of teeth which are one-half the size of the teeth of the other half. (Shown in section in Fig. 3.) Said spur-wheel I is pivoted to a standard attached to the bed-plate of the machine, as represented in Figs. 2 and 3.

J is a catch attached to the underside of the plate A, as shown in Fig. 3, which said catch has a projection catching into the larger set of teeth of the wheel I.

K is a rod or bar extending across the machine and resting against the supports B B', as shown in Fig. 3.

To the bar K, near its ends, and to the lower side of the plate A, are attached two springs, one of which is shown at L, Fig. 3.

R is a stop-lever, which is attached or pivoted to the under side of the plate A in such a way that it may at will be moved forward against the end of the feed-bar and stop the feed of the machine, when required.

To the upper side of the plate A, beneath the presser M, is attached a small circular plate, N, provided with slots for the passage of the needle and feed.

O is a cloth-holder for holding the cloth in which the button-hole is to be made. The ends of this cloth-holder are semicircular, but the sides are straight, as represented in Fig. 1. Its central part is also cut away, so as to form a slot with circular ends. Said slot is of such a size as to exactly fit the small circular plate N and allow the holder O to slide along the top of the plate A, and to be turned around thereon, the circular plate N being all the time within the slot of said cloth-holder.

P is a guide attached to the top of the plate A, and at a distance from the circular plate N equal to the breadth of the side of said holder, between the outer edge of the slot and the outer edge of said holder, so as to guide the holder as it slides along the plate A and is turned about the circular plate N.

The upper side of the cloth-holder O is furnished with projecting pins to keep the cloth from changing its position upon said cloth-holder while the button-hole is being made. Button-holes of any size may be made on this holder O by beginning at the inner end of the button-hole, working around the outer end, and back to the place of beginning; or a set of holders may be provided graduated in size to the size of the intended button-hole.

In forming a button-hole it is necessary, where a square end is needed in order to strengthen it, to bar the ends. To do this the extent of the backward-and-forward motion of the plate A must be doubled. This is accomplished as follows: The stop-lever R is forced up against the end of the feed-bar, so as to force the feed away from the cam which operates said feed and stop the feed. Then, by pulling upon the ring or handle of the catch J, I increase the

throw of the plate A, the stops E preventing the plate from moving farther than just enough to double the length of the stitch and allow the barring to extend from the outer row of stitches on one side of the button-hole to the outer row of stitches on the other side of the button-hole, thus finishing and strengthening its ends.

Operation: As the eccentric draws the end of the eccentric-rod forward and raises it to operate the needle it also throws forward and raises the arm H, which forward-and-upward motion causes the arm H to take hold of one of the smaller teeth of the wheel I and revolves said wheel one notch. This partial revolution of the wheel I causes the projection of the catch J to slide up the inclined side of one of the larger teeth of the wheel I, and leaves said projection resting upon the broad end of the tooth instead of being in the notch between two teeth. This moves the plate A, the cloth-holder O, and the cloth forward, so that the next stitch will be taken within the slit for the button-hole instead of being taken through the cloth. The next revolution of the eccentric causes the arm H to revolve the wheel I one notch farther. This brings the projection of the catch J into the next notch, between the larger teeth of the wheel I, and allows the plate A, the cloth-holder O, and the cloth to be drawn back by the springs, one of which is shown at L. The stitch is now taken through the cloth, and so on continuously until the button-hole is completed. When the end of the button-hole is reached, if a square end is needed, it is strengthened and barred

across the end by stopping the feed by means of the stop-lever R and doubling the throw of the plate A by operating said plate by means of the ring or handle of the catch J, as hereinbefore described.

I claim—

1. The combination of the arm H with the wheel I and the eccentric of the driving-shaft, or its equivalent, of a sewing-machine, substantially as and for the purpose set forth.

2. The combination of the wheel I with the arm H and the catch J, substantially as and for the purpose set forth.

3. The combination of the catch J with the wheel I and the plate A, substantially as and for the purpose set forth.

4. The combination of the cloth-holder O with the movable plate A and the circular plate N, substantially as described, and for the purpose set forth.

5. The combination of the guide P with the movable plate A and the cloth-holder O, substantially as and for the purpose set forth.

6. The combination of the plate A with the wheel I and the springs L, or equivalent, to give an alternate backward-and-forward motion to the plate A, substantially as described, and to the effect stated.

7. The combination of the stop-lever R with the feed-bar of a sewing-machine, substantially as described, and for the purpose set forth.

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Witnesses:

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