

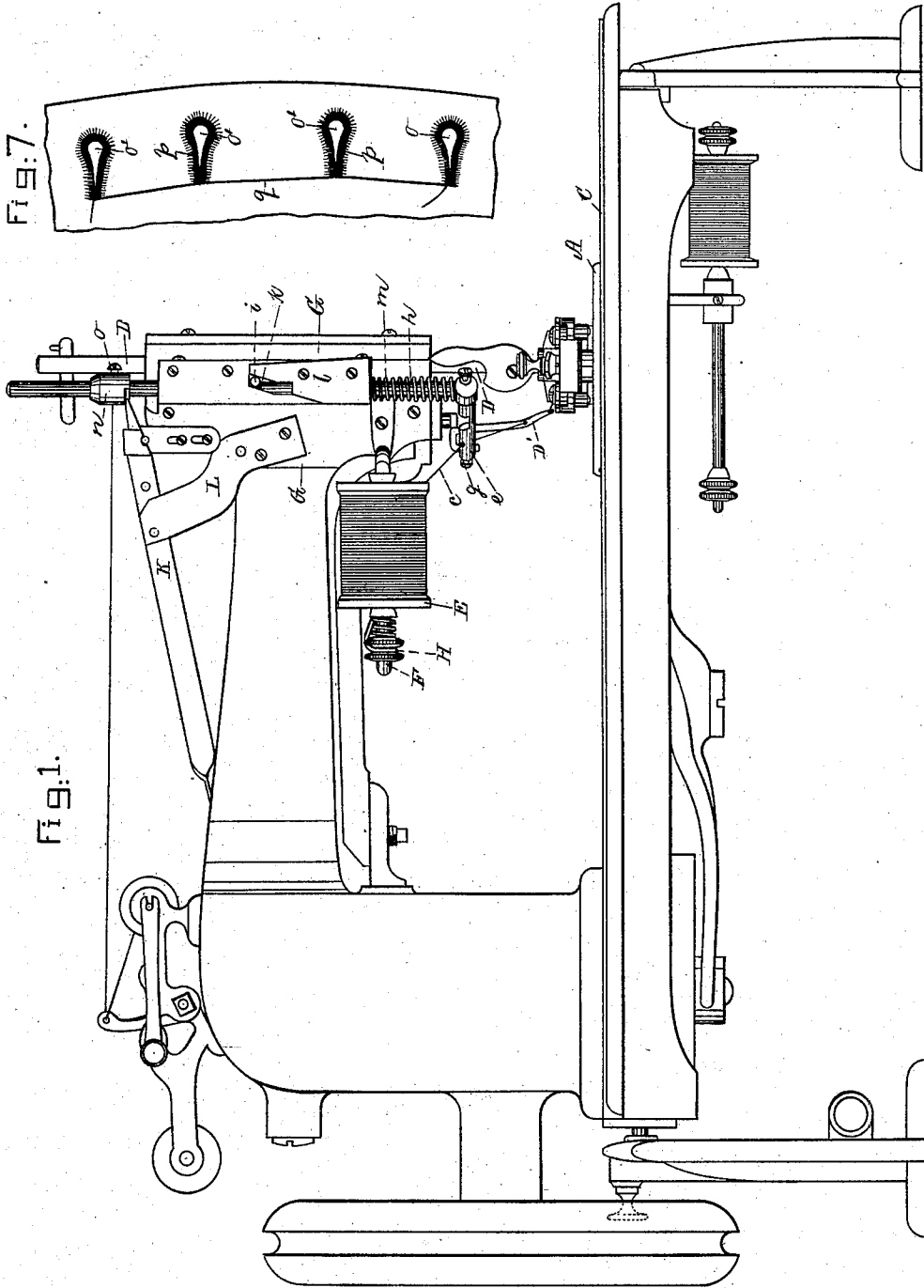
(No Model.)

2 Sheets—Sheet 1.

F. W. CROSS. Button Hole Sewing Machine.

No. 239,367.

Patented March 29, 1881.



Witnesses.
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(No Model.)

2 Sheets—Sheet 2.

F. W. CROSS, Button Hole Sewing Machine.

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Fig. 2.

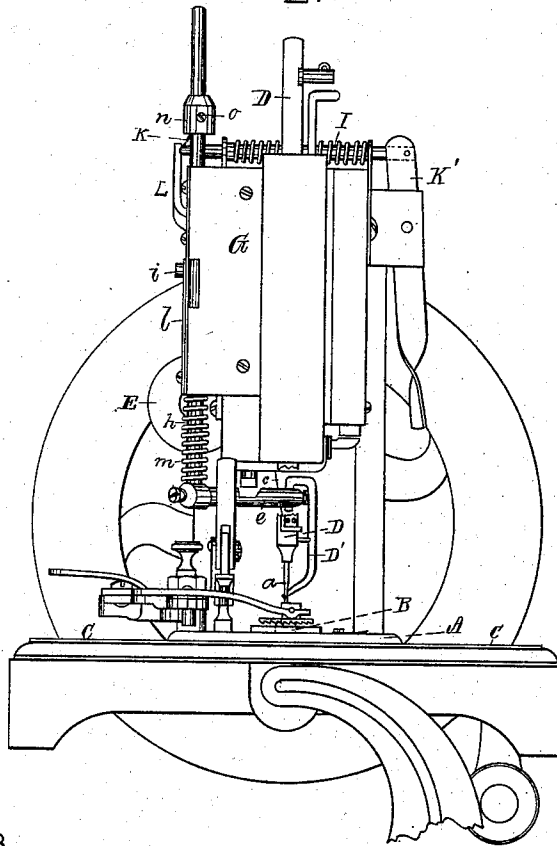


Fig. 3.

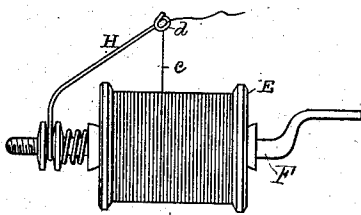


Fig. 4.

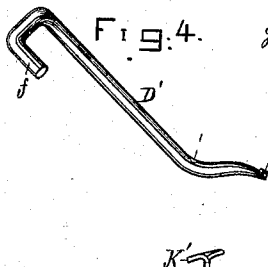


Fig. 5.

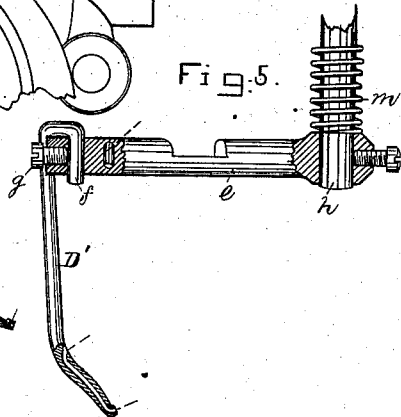
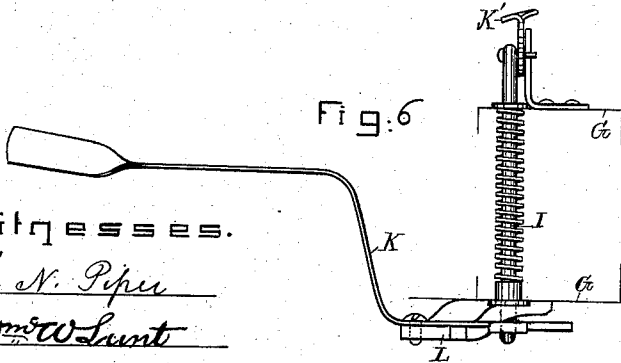


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANK W. CROSS, OF LYNN, MASSACHUSETTS.

BUTTON-HOLE SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 239,367, dated March 29, 1881.

Application filed August 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. CROSS, of Lynn, of the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Button-Hole Sewing-Machines; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side view, and Fig. 2 a front elevation, of a button-hole sewing-machine with my invention applied thereto, the nature of such invention being particularly defined by the claims hereinafter made.

The movable work-support plate of the machine is shown at A, and its perforated sustaining-button at B. Such plate rests and moves on the base-plate C of the machine, and is fed along and turned about, as occasion may require, by suitable mechanism arranged beneath or applied, in whole or in part, to the said plate. The sewing eye-pointed needle shown at a works through the button B and projects down from a carrier, D, provided with mechanism for imparting to it its proper movements and intervals of rest. As mechanism for forming the button-hole stitch does not constitute my invention, further description of such need not be resorted to.

In the drawings, the button-hole re-enforcing cord is shown at c, and its carrier at D', such cord proceeding from a spool, E, whose sustaining-spindle F projects from the arm or "goose-neck" G of the machine. From the spool the cord passes through the eye d of a "slack-take-up spring," H, projecting from the spindle F, as shown in Fig. 3, which is a top view of the spool and spindle and the take-up spring H. From the eye d the cord passes down through an arm, e, that supports the carrier D'; thence the cord goes into and through the carrier, which at its lower part is tubular, to receive the cord. A perspective view of the carrier is shown in Fig. 4. The hooked part f of the carrier extends through the arm, and is held thereto by a set-screw, g, as shown in Fig. 5, which is a section of the arm and the carrier. The arm e extends horizontally from the lower end or part of a vertical slide-rod, h, adapted to the arm or goose-neck G, to slide vertically

and turn horizontally therein. A stud, i, projects from the slide-rod into an oblique slot, k, made in a plate, l, fastened to the arm G. A helical spring, m, encompasses the slide-rod, between its arm e and the arm G, and serves to move the slide-rod downward until stopped by an adjustable shoulder, n, (which slides upon the rod, and is held thereto by a set-screw, o, screwed into the shoulder and against the rod,) which in such case rests on the top of the arm G. One object of this adjustable shoulder is to enable the cord-carrier to be adjusted to its proper distance from the button B.

A lever, K, is fulcrumed to a post, L, extending up from the goose-neck or arm G. The shorter arm of the said lever extends underneath and against the shoulder n, such lever being for effecting the raising of the slide-rod by depressing the longer arm of the lever. On such rod being so moved upward the re-enforcing-cord carrier, by the action of the slot k on the stud i, will not only be raised off the work, but be turned aside from over the button B. This moving aside of the carrier is to get it out of the way of the work in either placing the latter on or removing it from the support-plate.

In order to hold the carrier in its raised position, I use with the lever K a spring-bolt, I, applied to the arm G, and to be moved by a lever, K', fulcrumed to the said arm, such bolt, with the arm G and the lever K, being shown in top view in Fig. 6. When the rod h is raised by the lever K, the bolt I is driven, by its spring, underneath the shoulder n on rod h, and holds that rod up until the bolt I is withdrawn by pressing upon the longer arm of lever K'.

In making the button-hole stitch the needle crosses its thread over the re-enforcing cord, and confines it in place around the button-hole, all of which is well understood by persons skilled in the construction and use of button-hole sewing-machines.

Fig. 7 is a top view of a piece of leather having button-holes o' formed in it and stitched by the machine, the stitching of them being shown at p, the portions of the re-enforcing cord that are between them being represented at q.

Having thus explained my invention, what I claim is as follows:

1. In combination with the goose-neck G, the button-hole re-enforcing-cord carrier D', arranged above the work-support plate A and its perforated button B, and adjustably attached to arm *e*, projecting from and operated by the slide-rod *h*, all substantially as specified.

2. The combination, with carrier D', of the arm *e*, slide-rod *h*, stud *i*, obliquely-slotted plate *l*, adjustable shoulder *n*, spring *m*, lever K, spring-bolt I, and lever K', all arranged,

relatively to each other and the goose-neck G, essentially as and for the purpose set forth.

3. The combination of the take-up spring H, the re-enforcing-cord carrier D', the arm *e*, rod *h*, shoulder *n*, levers K and K', and spring-bolt I, substantially as described.

FRANK W. CROSS.

Witnesses:

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