

(No Model.)

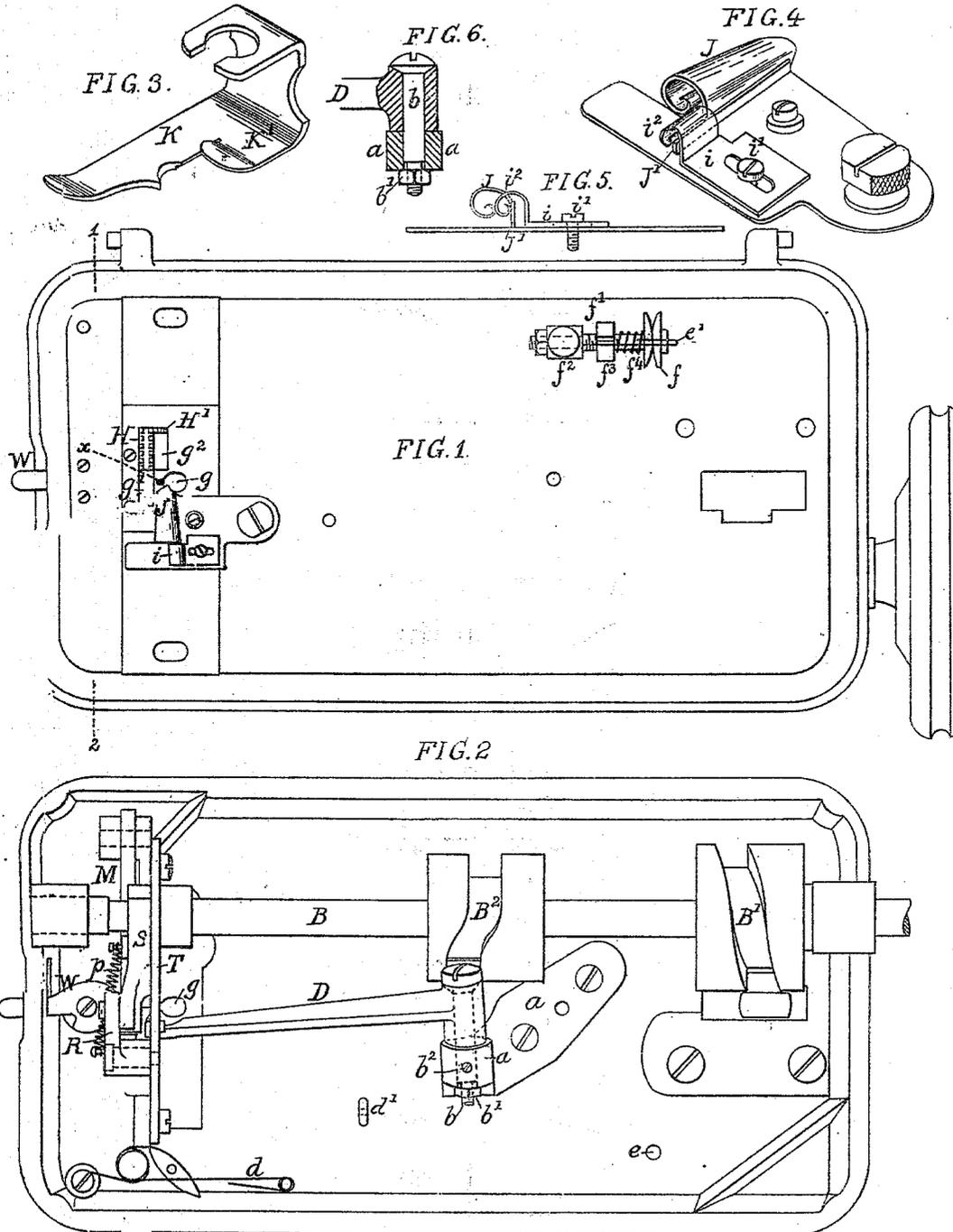
3 Sheets—Sheet 1.

G. S. ROMINGER.

BUTTON HOLE SEWING MACHINE.

No. 296,626.

Patented Apr. 8, 1884.



WITNESSES:

Alexander Barkoff

Harry Drury

INVENTOR

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By his atty.
Howson and Ford

(No Model.)

3 Sheets—Sheet 2.

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FIG. 7.

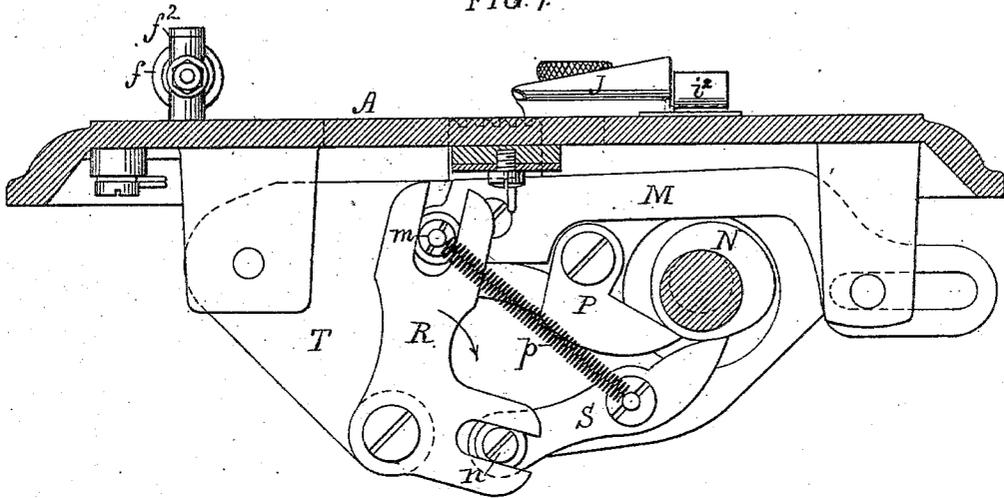
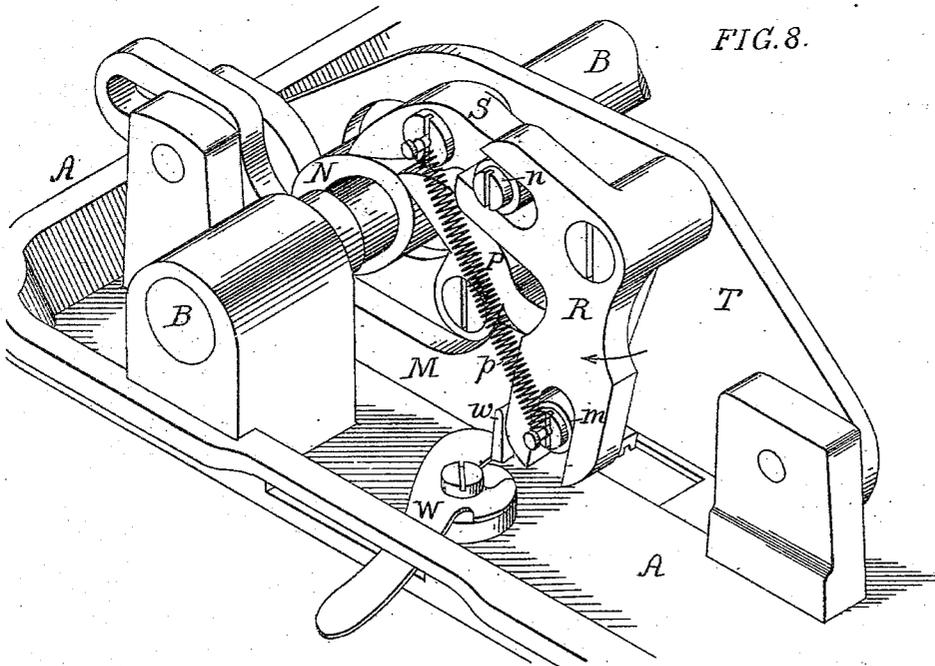


FIG. 8.



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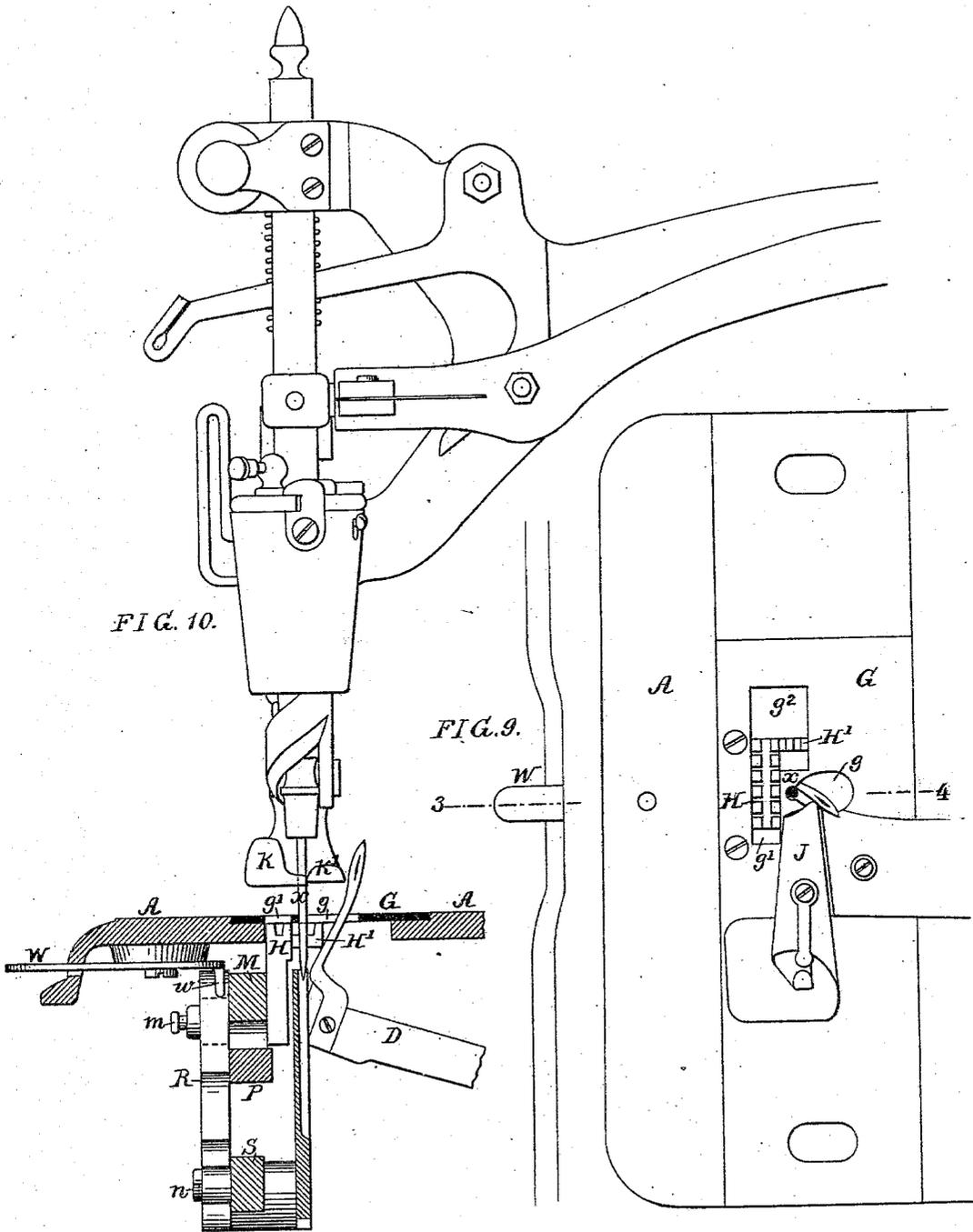
(No Model.)

3 Sheets—Sheet 3.

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BUTTON HOLE SEWING MACHINE.

No. 296,626.

Patented Apr. 8, 1884.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE S. ROMINGER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE AMERICAN BUTTONHOLE, OVERSEAMING AND SEWING MACHINE
COMPANY, OF SAME PLACE.

BUTTON-HOLE SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 296,626, dated April 8, 1884.

Application filed December 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. ROMINGER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Button-Hole Sewing-Machines, of which the following is a specification.

My invention relates to certain improvements in the "American Button-Hole Sewing-Machine," my improvements comprising certain details in the construction of different parts of the machine, as described hereinafter.

In the accompanying drawings, Figure 1, Sheet 1, is a plan view of the table or bed of the machine with my improvements; Fig. 2, an inverted plan view of the same; Fig. 3, a perspective view of the presser-foot; Fig. 4, a perspective view of the edge guide and folder; Fig. 5, a front view of the same; Fig. 6, a sectional view of the pivoting device for the looper-arm; Fig. 7, Sheet 2, a transverse section on the line 1 2, Fig. 1, but drawn to a larger scale; and Fig. 8, an inverted perspective view of the feed mechanism on the same scale as Fig. 7. Fig. 9, Sheet 3, is a sectional plan view, and Fig. 10 a longitudinal section on the line 3 4, Fig. 9, of sufficient of the machine to show the needle and looper, and to illustrate their relation to each other and to the feed-plate.

A is the table or bed of the machine, on the under side of which are formed bearings for the driving-shaft B, the latter having, as usual, two cams, B¹ and B², the former for operating the needle-arm, and the cam B² for actuating the looper-arm D, Fig. 2. Said arm D is hung to a bracket, a, on the under side of the table, by means of a bolt, b, which passes through a central opening in the hub of the arm, and through an opening in the bracket a, part of the opening in the hub being tapered for adaptation to the tapered head of the bolt, as shown in Fig. 5. The end of the bolt is threaded for the reception of the nut b', which bears against the bracket and serves to maintain a snug fit of the hub on the bracket and a like fit of the bolt in the hub, so as to compensate for the effects of wear, loosening of the bolt being prevented by a set-screw, b². The

thread for the looper passes from a spool suitably located above the base-plate A through an eye or loop, c', thence between tension-disks f, thence through an opening, e, in the plate A, thence through an eye in a lug, d', beneath the said plate, and finally through an eye on a spring, d. The friction-disks f are carried by a bolt, f', secured to a stud, f², on the bed-plate, said bolt being threaded for the reception of a nut, f³, between which and the inner plate, f, intervenes a coiled spring, f⁴, so that by properly manipulating the nut f³ the pressure exerted by said spring upon the friction-plate f can be readily governed, and the degree of tension imparted to the thread thereby regulated. The nut f³ is slotted, and is adapted to grip the bolt f', so that the friction exerted will prevent the accidental loosening of the nut.

G is the work-plate of the machine, having the usual opening, g, for the needle and looper, and an opening, g', for the feed-plate H. The needle is represented at x in Fig. 1.

Instead of making the opening and plate of uniform width throughout, however, I enlarge the opening in the rear of the needle, as shown at g², Figs. 1 and 9, and form on the feed-plate H a projection, H', adapted to this enlarged portion of the opening and projecting laterally beyond the needle, as shown in Fig. 1, so as to provide for a more effective feed than usual of the fabric which is being sewed, owing to the hold of the portion H' of the feed-plate on the fabric immediately in the rear of the needle and laterally beyond the same.

Machines of the character shown in the drawings are extensively used in overseaming the edges of blankets, &c., and in order to provide for the proper turning or folding of the edge of the blanket prior to the overseaming of the same, I combine with the sewing and feeding mechanism of the machine an edge guide and turner, J, which may be similar in general construction to the usual hemming attachments of sewing-machines. I provide the device, however, with an adjustable gage-plate, i, Fig. 4, said plate being secured by means of a set-screw, i', to the base of the guide. The guide J has a projecting plate, J',

and the plate *i* has a portion, *i*², overhanging said projection, and constructed to form an edge-turner in the same manner as the guide J. By adjusting the plate *i* in respect to the guide J, therefore, the character of the turned or folded edge may be varied.

The use of the feed-plate with projection H', in combination with the edge guide and turner, is an important feature of my invention, as the feed-plate thus constructed acts upon the fabric up to the very edge, and thus insures a straight pull of the fabric through the guide. The presser-foot K, Fig. 3, has a projection, K', for properly acting upon the fabric above the projection H' of the feed-plate, said projection K' being preferably recessed for receiving the hem. The feed-plate is carried by a guided bar, M, on the under side of the bed-plate, as usual, and the necessary vertical and longitudinal reciprocating movements are imparted to said feed-plate by a cam, N, on the shaft B, through the medium of the three levers P, R, and S, all of which are hung to a plate, T, the latter being bolted to lugs on the underside of the bed-plate, and having formed in it the necessary openings for the driving-shaft and looper-arm. One arm of the lever P is acted upon by the cam N, and the other arm of said lever bears upon the under side of the feed-bar M, so that as the lever is vibrated a vertical movement will be imparted to the end of the feed-bar which carries the feed-plate, and upon which said lever P acts. The longitudinal reciprocation of the feed-bar is effected by the action of the cam and the levers R and S. The lever R is a bell-crank lever, both arms of which are forked, and the forked end of one arm embraces a pin, *m*, on the feed-bar, the other forked arm of the lever embracing a pin, *n*, on one arm of the lever S, the opposite arm of which is acted upon by the cam. A coiled spring, *p*, is connected at one end to a stud on the pin *m*, and at the opposite end to a similar stud on the pivot-pin of the lever S, said spring thus tending to draw the end of the feed-bar downward, and keep the same always in close contact with the lever P, a further tendency of

the spring being to draw the feed-bar backward. In other words, the spring acts in opposition to the cam, the tension of the spring being exerted to depress and retract the feed-plate, while the cam acts to raise said plate and impart to it the movement necessary for the feeding operation. The extent of feed and length of stitch are governed by the adjustment of a lever, W, which is pivoted to a stud on the under side of the bed-plate, the long arm of said lever projecting through a slot in the plate, and the short arm carrying a stop, *w*, which is adapted to come in contact with the upper forked arm of the lever R, and thus restrict the movement of the same in the direction of the arrow, Figs. 6 and 7, thereby limiting the retraction of the feed-bar, due to the action of the spring *p*.

By hanging the levers P, R, and S to a plate detachably secured to the under side of the bed-plate, the attachment of said levers to the plate can be effected before the latter is secured in position, and the fitting together of the machine is thereby materially facilitated.

I claim as my invention—

1. The combination of sewing mechanism and the feed-plate H, having a projection, H', extending laterally beyond the needle, with the edge guide and turner J, as set forth.
2. The combination of the needle and looper of an overseam-sewing machine, the feed-plate extending laterally beyond the needle, the presser-foot having a projection, K', and the edge guide and turner J, as set forth.
3. The combination of the shaft B, having a cam, N, with the feed-bar M and the levers R, S, and P, as set forth.
4. The combination of the shaft B, having a cam, N, the feed-bar M, the levers R and S, and the regulating-lever W, having a stop, *w*, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE S. ROMINGER.

Witnesses:

WM. J. BARR,
JAMES W. BARR.