

(No Model.)

D. MILLS.

BUTTON HOLE SEWING MECHANISM.

No. 319,835.

Patented June 9, 1885.

FIG. 1.

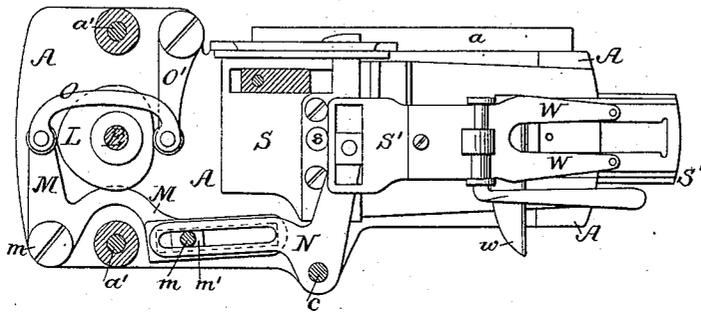


FIG. 2.

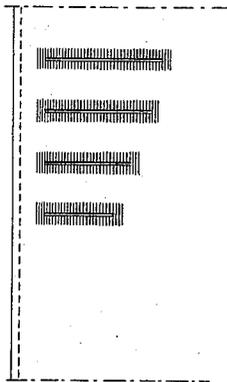
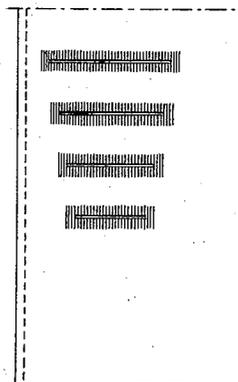


FIG. 3.



WITNESSES:

Henry Bossert

Harry Drury

INVENTOR:

Daniel Miller
by his Attorneys
Howson & Son

UNITED STATES PATENT OFFICE.

DANIEL MILLS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO MILLS
BUTTONHOLE ATTACHMENT COMPANY, OF CAMDEN, NEW JERSEY.

BUTTON-HOLE-SEWING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 319,835, dated June 9, 1885.

Application filed January 30, 1885. (No model.)

To all whom it may concern:

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

The object of my invention is to so construct a button-hole-sewing mechanism that adjustment of the parts to change the length of the button-hole will not cause any variation in the distance of the ends of the button-holes from the edge of the fabric; and this object I attain by so constructing the slotted levers which transmit the motion from the feed-cam to the clamp-slide that the slots in the levers shall coincide with each other when the clamp-slide is at the limit of its outward movement, as more fully described hereinafter.

In the accompanying drawings, I have shown my improvement as applied to the button-hole-sewing mechanism for which I obtained Letters Patent No. 305,624, September 23, 1884.

Figure 1 of the drawings is a view corresponding precisely with Fig. 7 of the drawings of said patent, and illustrating the application of my present improvement to the patented device. Figs. 2 and 3 are diagrams illustrating the manner in which button-holes are made on the patented and improved attachments.

The same letters of reference are used in Fig. 1 in the accompanying drawings as in the corresponding view in the drawings of the patent, A being the base-plate of the attachment, provided with the usual dovetailed guide-piece *a*, by which the device may be secured to the bed of the sewing-machine in the ordinary throat-plate guide. The upper part of the attachment which is secured to the lower part by bolts or pillars, *a'*, and which imparts intermittent rotary motion to the heart-shaped feed-cam L, is not here illustrated, as it may be of any suitable construction.

S is the vibrating plate, having its pivoting center at *s*, and carrying the longitudinally-adjustable slide S', the extent of movement of which determines the length of the button-hole. In the drawings of my aforesaid patent

the cloth-clamp to be carried by this slide S' is not represented, but in the accompanying drawings a form of clamp W is shown, provided with a guide, *w*, to determine the position of the cloth in the clamp.

The construction of clamp here shown is that described in an application for Letters Patent filed by me, of even date herewith, Serial No. 154,405; but it will be understood that other forms of clamps may be used.

The intermittent feed-motion is imparted to the slide S' from the cam L through the medium of the two pivoted bell-crank levers M and N, the former pivoted at the point *m*, and the latter at *c*, and the lever M being connected to a radius-bar, O', by a connecting-link, O, as described in my said patent. The two levers M and N are connected together by a bolt, *m*, passing through a slot in the lever N, and having a block, *m'*, adapted to a slot in the lever M, while the usual thumb-nut is employed to retain the bolt in place after adjustment. By adjusting this connecting device in these slots the extent of movement of the slide S', and consequently the length of button-hole, may be varied.

With the levers N constructed and arranged relatively to each other, as shown in my patent, adjustment of the connecting-pin *m* in the slots of the said levers will affect the button-hole at both ends, and result in the formation of button-holes which are at different distances from the edge of the fabric, as shown in Fig. 3. To remedy this, I construct the levers so that the slots of the two levers M N shall always coincide or be in line with each other when the clamp-slide S' is at the limit of its outward movement, as shown in Fig. 1. Consequently whatever may be the extent of adjustment of the connecting-pin *m* in the slots of the levers, it will not cause any change in the outward limit of motion of the slide, but will vary the inward limit only. Therefore, if the edge of the fabric is always placed up to the guide-plate *w*, all the button-holes will be at the same distance from the edge of the material, no matter what the length of the button-holes may be.

I claim as my invention—

1. The combination of the clamp-slide of a button-hole sewing mechanism and a feed-

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cam for imparting intermittent feed-motion thereto with levers for transmitting motion from the cam to the slide and an adjustable connecting-pin therefor, the said levers having coinciding slots when the slide is at the limit of its outward movement, substantially as set forth.

2. The combination of the clamp-slide of a button-hole-sewing mechanism having a guide, *w*, and a cam for imparting intermittent feed-motion to the slide with levers for transmitting motion from the cam to the slide

and an adjustable connecting-pin therefor, the said levers having coinciding slots when the slide is at the limit of its outward movement, substantially as set forth. 15

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

DANL. MILLS.

Witnesses:

GEO. D. MILLS,
HARRY SMITH.