(No Model.)

G. N. RAYMOND.

BUTTONHOLE SEWING MACHINE.

No. 556,717. Patented Mar. 17, 1896.

FIG. 1

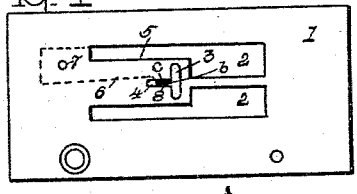


FIG. 2

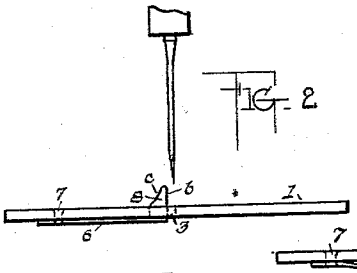


FIG. 3

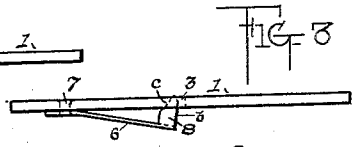


FIG. 5

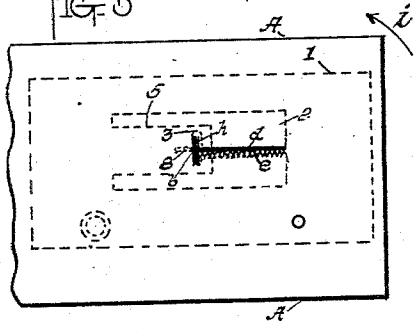


FIG. 4

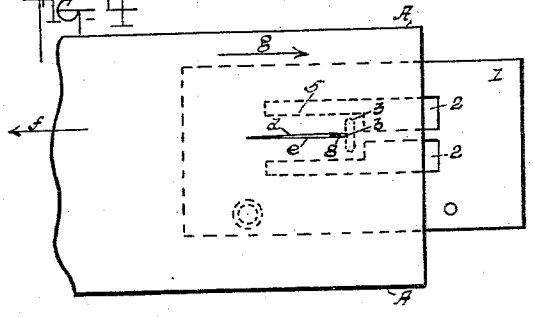


FIG. 6

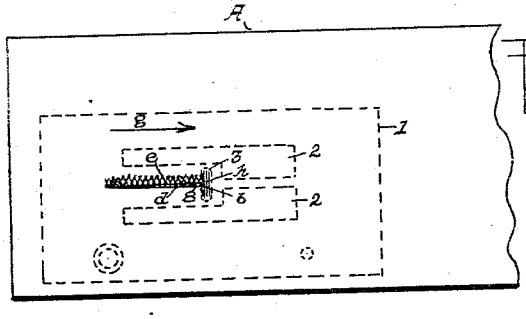


FIG. 7

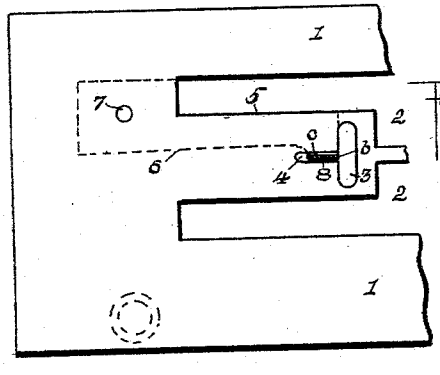
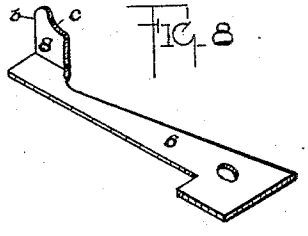


FIG. 8



WITNESSES:

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HIS ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE N. RAYMOND, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-HALF TO GEORGE B. PERKINS, OF SAME PLACE.

BUTTONHOLE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 556,717, dated March 17, 1896.

Application filed October 9, 1894. Serial No. 525,380. (No model.)

To all whom it may concern:

Be it known that I, GEORGE N. RAYMOND, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in a Combined Guide and Separator for Buttonhole-Stitching Machines, of which the following is a specification.

My invention relates to an improvement in buttonhole-stitching machines; and it consists of certain details of construction to be more fully set forth in the following specification and particularly pointed out in the claim to follow.

To enable others to understand my said invention, reference is had to the accompanying drawings, in which—

Figure 1 represents a detached upper plan view of a throat-plate with my improvement attached thereto; and Fig. 2 is an edge view of the throat-plate, looking in the direction of arrow *a*, Fig. 1, showing the separator and guide in its normal position, also a broken view of a needle-bar and needle therein. Fig. 3 is an edge view of the throat-plate similar to Figs. 1 and 2, showing the separator and guide depressed. Fig. 4 is an upper plan view of the throat-plate with a section of a garment overlying the same with the buttonhole embracing the separator preliminary to stitching. Fig. 5 shows the stitching operation of one side of the buttonhole completed and the separator and guide depressed. Fig. 6 shows the buttonhole reversed and placed in position for stitching the opposite edge. Fig. 7 is an enlarged broken plan view of the throat-plate, showing more clearly the position of the separator and guide with respect to the needle-hole. Fig. 8 is a detail perspective view of the spring separator and guide.

Its construction and operation are as follows:

1 represents the throat-plate arranged to be attached to any suitable machine, but which forms no part of my invention.

2 is the opening for the feed-surface, (not shown;) 3, the elongated needle-hole.

4 is a narrow kerf or slot formed through the tongue 5, Figs. 1 and 7, and opening into the needle-hole 3.

6 (see also Fig. 8) is a spring-plate attached to the throat-plate by the rivet 7 at its rear end, while its free end is provided with the upturned tongue 8, whose front edge *b* nearest the needle is preferably straight, while its rear edge *c* is concave or inclined to the front edge, for the purpose to be hereinafter more fully described.

Figs. 4, 5 and 6 will fully explain the operation of my device.

A, Fig. 4, represents a section of a garment with a buttonhole cut therein and laid upon the throat-plate 1 in readiness for stitching the edges *d e* thereof. The tongue 8 projects through the buttonhole-cut and the garment is pulled taut in the direction indicated by arrow *f*, thus bringing the edge of the buttonhole-cut against the front edge *b* of the tongue 8. (See also Figs. 2 and 8.) This slight strain on the garment gives the buttonhole longitudinal alignment and centers it true with the needle. The garment is then fed forward in the direction indicated by arrow *g*, stitching the edge *e*, as shown at Fig. 5. The opposite end of the buttonhole engaging with the inclined edge *c* of the tongue 8 will depress the same (see also Fig. 3) and permit such end to be carried forward and barred by the stitches *h*. The garment is then turned, as indicated by arrow *i*, Fig. 5, and the opposite end of the buttonhole brought against the front edge *b* of the tongue 8 and the side *d* stitched and such end barred, as before described.

The tongue 8 separates the raw edges or lips of the buttonhole and prevents the ravelings thereof being stitched across and thereby close the buttonhole, a trouble heretofore of frequent occurence; but by the use of the tongue as a separator such cannot take place. The separator-tongue serves not only as a guide to locate the buttonhole-cut with respect to the needle, but such tongue projecting through the said cut is readily seen by the operator, and as the garment is fed along the dark point of the tongue will indicate when the opposite end of the buttonhole is reached. Without a guide of this kind it is difficult for the operator to see and locate a thin buttonhole-cut, especially in white cloth. Therefore, this tongue acting in its capacity as separator and guide will cause to be pro-

duced a buttonhole representing even stitching, and thus give a neater and more finished appearance than formerly.

The object of opening the guide-slot into the needle-hole is to keep the front edge of such guide as close to the needle-hole as possible. I hold, therefore, to set the guide back, so as to form a thin partition or bridge between the end of the guide-slot and the needle-hole but a modification of my construction and not productive of as good results.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a buttonhole-sewing machine, the combination with the stitch-forming mechanism thereof and a throat-plate having an elongated needle-hole for the lateral movement of the needle and a narrow slot central with and at right angles to said needle-hole and opening into the same, of a buttonhole-guide and separator comprising a thin tongue normally projecting through said narrow slot above the throat-plate, said tongue having a spring-base attached to the under side of said throat-plate, one edge of said tongue being situated close to the needle-hole and the opposite edge inclined, so that when the end of the buttonhole is strained against said inclined edge by the action of the feed-dog the tongue will be automatically depressed below the throat-plate sufficiently to permit the feeding forward of the fabric to bar the end of the buttonhole, as described and for the purpose set forth.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 8th day of October, A. D. 1894.

GEORGE N. RAYMOND.

Witnesses:

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DAVID M. LACKIE.