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Inventor,
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IMPROVEMENT IN BUTTON-HOLE-CUTTING ATTACHMENTS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 158,574, dated January 12, 1875; application filed June 5, 1874.

To all whom it may concern:

Be it known that I, ISAAC S. CRAIG, of Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Button-Hole-Cutting Attachments for Button-Hole-Stitching Machines, of which the following is a specification:

The mechanical arrangement heretofore employed in connection with button-hole-stitching machines for the purpose of cutting the hole, after the material to be stitched has been secured in the clamp, consists of a bracket made fast to the top of the bed of the machine, and having a projection which passes down through the bed to the under side, and to which is attached, by a pin on which it turns, an arm or lever, having at its opposite end the cutter-blade. To the bracket above the bed is secured, in a similar manner, a lever, having at its outer end a brass block, upon which the cutter acts, the lever being confined to the bracket by a pin, on which it is turned to a horizontal position when not in use. To the lever below the table, and about midway between the pin on which it turns and the cutter, is attached a link, which projects up through an opening in the table, having at its upper end a hook. The lever above the table, having been swung down from its horizontal position, is brought in contact with the link from the lever below, and by means of a wedge-shaped cam, which swings on a stud on the top of the upper lever, and operated by a handle, the wedge is forced under the hook of the link, and thus the cutter and block are brought together with sufficient force to cut the material, an opening through the table allowing the passage of the cutter.

My improvements consist in new arrangements and combinations of mechanical devices for cutting the button-hole in the material after it has been secured in the clamp, which holds and guides the same during the process of stitching, and are fully shown in the accompanying drawings, and therein represented as applied to the button-hole-stitching machine patented by Daniel W. G. Humphrey, of Chelsea, in said Commonwealth, February 6, 1872.

Drawing No. 1 is a top view of my cutting attachment as applied to the bed of said ma-

chine. Figure 2 is a horizontal section of the same drawn through the dotted lines *xy*, Fig. 1. Figs. 3, 5, and 6 are views of detached parts. Fig. 4 is a section drawn through the dotted line *vs*, Fig. 1.

The principal parts of this device are the bracket A A, cutter-lever B, cam-lever C, and cam-lever screw D, Figs. 1 and 2. The cam-lever screw D terminates below in an oblong head, having on either side of the bolt an inclined surface, (more fully shown in Fig. 5,) which inclinations are in a direction opposite to those of the left-hand screw-threads on the bolt, and the top of the screw is squared to fit the hole in the cam-lever C, which is secured to the same by a small screw turned into the end of the larger one, as shown. The bracket A is attached to the bed T of the machine by screws from the under side, and the cutter-lever B is attached to said bracket by the pin *e*, upon which it turns, and holds in its opposite end the cutter, secured therein by a set-screw, as shown. The bed T has an oblong slot, through which the end of the screw D passes when in the horizontal position shown in Fig. 2. This is the position of the attachment when ready to cut the hole. The dotted outlines in the same figure show the position of the cutter-lever and its attachments when thrown up out of use while a button-hole is being stitched.

The operation of my cutting device is as follows: When the clamp *d*, containing the material to be cut, is adjusted to the cutter-block *t*, as described in the patent referred to, the cutter-lever B, Fig. 2, is swung down from the position of the dotted lines into the horizontal position shown, with the cutter resting upon the material in the clamp and upon the block; then the cam-lever C is pulled forward until a quarter-turn is given to the screw D, during which the inclined surfaces of the screw D, Fig. 5, operate against the under side of the bed of the machine, and, in conjunction with the threads of the screw working in an opposite direction through the lever B, cause said lever to bring its cutter down upon the cutter-block with sufficient force to cut the material as desired. The cam-lever C, being then swung back into line with lever B, releases the screw D from the bed of the machine, and

allows the whole to be swung up into the resting position shown.

In connection with this cutting device I use a clamp-slide, *n*, Figs. 3, 4, and 6, for the purpose of regulating the position of the clamp to the block. Through the plate *m*, Fig. 3, is a slot to allow the clamp-guide pin *p* to pass down into the hole *r*, Fig. 6, in the slide *n*. This slide *n*, of which only a top view is shown in Figs. 3 and 6, works under the plate *m*, and slides backward and forward in a groove in the bed of the machine. It is curved down over the side of the machine-bed, and has a screw, *s*, Fig. 4, through it into the bed, by which its movement is regulated. When the guide-pin *p* of the clamp is in the hole of the slide, turning the screw *s* in will set the central portion of the clamp nearer the cutter-block,

while turning said screw out will draw said portion of the clamp farther from the block, and thus the position of the eyelet part of the button-hole is regulated before cutting.

I claim as my invention—

1. The combination, with the stationary cutter-block *t* and table *T*, of the lever *B*, its cutter, and the screw *D*, having its head inclined in the opposite direction to its screw-thread, all combined and operating as set forth.

2. The combination, with the table-top *T*, cutter-block *t*, and clamp *d*, provided with the locking-pin *p*, of the slide *n* and screw *s*, as and for the purpose specified.

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Witnesses:

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