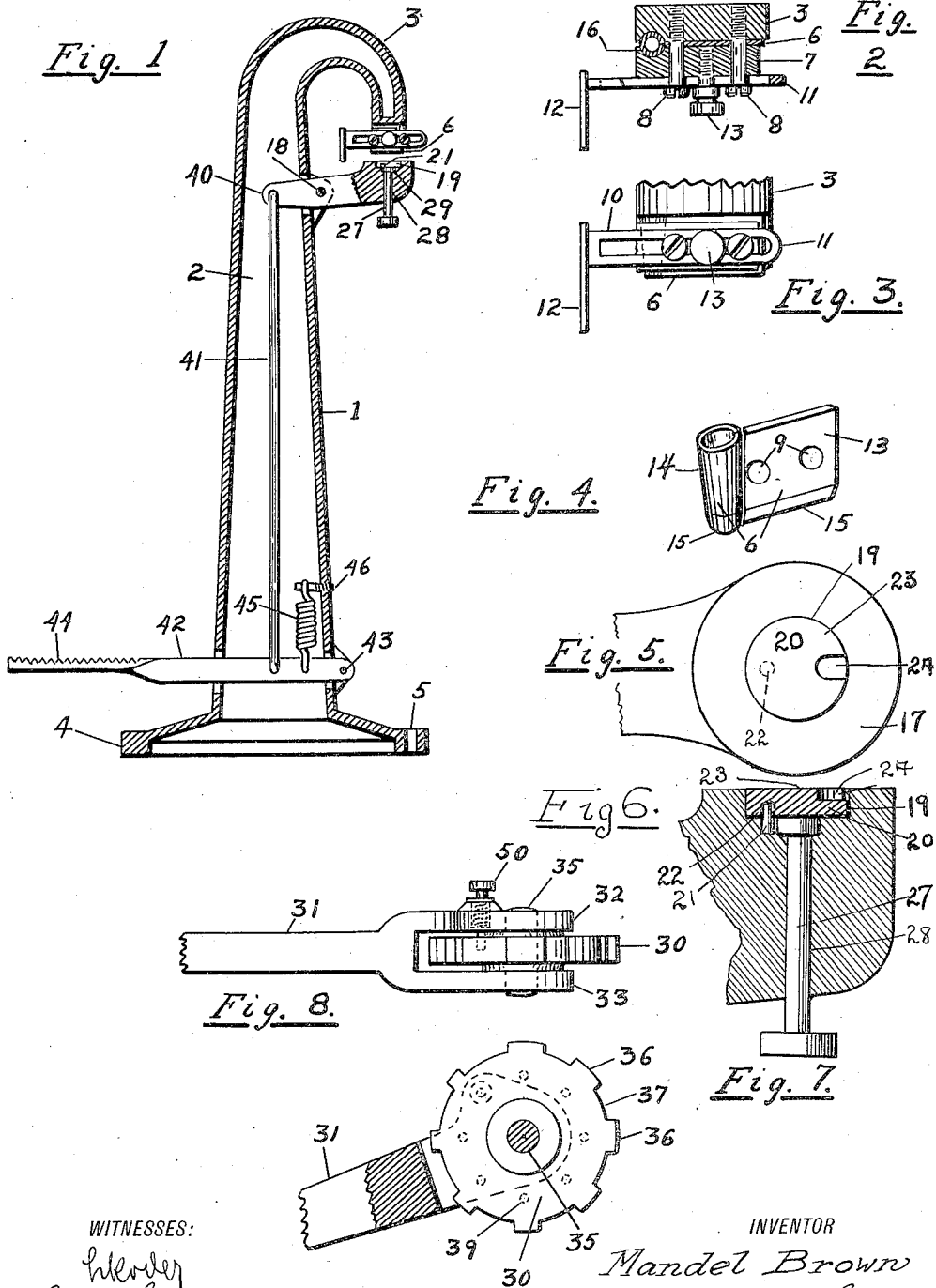


M. BROWN.
 BUTTONHOLE PUNCHING MACHINE.
 APPLICATION FILED JULY 3, 1912.

1,057,523.

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WITNESSES:
H. K. Ober
Carl H. H. H. H.

INVENTOR
Mandel Brown
 BY *Felix Stern*
 ATTORNEY

UNITED STATES PATENT OFFICE.

MANDEL BROWN, OF CHICAGO, ILLINOIS.

BUTTONHOLE-PUNCHING MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MANDEL BROWN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Buttonhole-Punching Machines, of which the following is a specification.

This invention relates to a machine for cutting or punching button holes in fabrics and such like.

An object of the invention is to provide an improved machine wherein the portion of the garment in which a button hole is to be cut, is held stationary, while a counter-plate presses said portion against a cutter of suitable configuration to cut a button hole shaped slot in the garment.

Another object of the invention is to provide a support for the counter-plate, adapted to hold plates of varying operative length, so that button holes of different size may be cut without exchanging the cutter.

Another object of the invention is to provide means for actuating the machine by foot power in contradistinction from hand cutters which are frequently used in the art, and which are extremely difficult to operate, particularly when button holes have to be cut in heavier fabrics, like cloth for men's garments, overcoats or such like.

With these and other objects in view, the invention is described in the following specification and illustrated in the drawings and defined in the appended claims:—

In the drawing: Figure 1 is a longitudinal section through a button hole cutting machine, partly in elevation; Fig. 2 is on a larger scale a horizontal section through the cutter and the means for securing the same in the machine; Fig. 3 is an elevation of the part shown in Fig. 2; Fig. 4 is a perspective view of the cutter blade. Fig. 5 is a top plan view of a counter-plate and its support; Fig. 6 is a section through the same, showing the removing pin in elevation. Fig. 7 is an elevation, partly in section, of a modification of a support for the multiple counter-plate. Fig. 8 is a top plan view thereof.

The upright 1 is a casting, preferably of a circular cross section, cored out so as to provide a hollow inner space 2, and terminating in a bent head portion 3, at the top, and in a broad base plate 4, at the other end, in which holes, 5, for the reception of bolts

(not shown) are provided, whereby the machine may be secured to the floor of the workroom. At the depending end of the head portion 3, a cutter 6, is fastened by means of clamping plate 7, which is detachably secured to the head portion by screws 8 extending through the holes 9, in the cutter blade and threaded into the head portion 3. A gage 10 is adjustably connected with the stationary cutter; the gage comprising a frame portion 11 and an angular projection 12. A clamping screw 13 extends through the frame into the plate 7.

The cutter comprises a straight portion 13^a, provided with holes 9 for the passage of screws 8, and a circular, preferably tapering portion 14, adapted to cut the enlarged portion of a button hole, as will be well understood by persons skilled in the art. The circular and straight portions are sharpened at their lower end to provide a cutting edge 15. The clamping plate 8 has a suitable recess 16, in which the tapering portion 14 is secured when the parts are clamped together.

A counter-plate support 17 is pivotally secured at 18 to the upright, and terminates in a seat 19 for the counter-plate 20. The latter is preferably circular to conform with the circular recess of seat 19, so that the counter-plate may be inserted into its seat and centered with respect thereto by rotating the plate until it is in proper position. It is then locked against rotation in this position by a pin 21, projecting from the seat into a recess 22 of the plate. The latter comprises a raised portion 23 and a lower offset portion 24. When the counter-plate support is advanced toward the cutter, the raised portion only comes into operative engagement with the cutter 6. The latter will then punch a slot corresponding to the length of the line of contact of the raised portion of the counter-plate with the edge, while the offset portion remains out of contact.

A pin, 27, is slidably disposed in an aperture, 28, of the counter-plate support and is provided with a head, 29, which holds the pin from dropping out of the aperture. When it is desired to remove a counter-plate from its seat, the pin 27, is pushed upwardly, engaging thereby the lower face of the inserted counter-plate and forcing the same out of the seat.

When it is desired to cut button hole slots of a different length, other counter-plates may be inserted which have the raised

portions 23, of different lengths respectively. The length of the slot produced will be equal to the length of the line on which the raised portion contacts with the cutting edge of the blade.

In the modification illustrated in Figs. 7 and 8, a multiple counter-plate 30, is shown. The tines 32 and 33, of a bifurcated support 31, are provided with registering transverse apertures, through which a pin 35, extends. The pin 35 serves for holding the rotatable counter-plate. The latter has a circumference composed of raised portions 36, alternating with recesses 37. The raised portions 36 have different lengths, so that by rotating the counter-plate 30, on this support, a raised portion of suitable length may be brought into opposition with the cutter blade 6, and upon actuating the support the respective raised portion will be brought into operative position with respect to the blade. For the purpose of locking the multiple counter-plate 30, in adjusted position, a spring-controlled pin 50, is provided, which extends through a tine 32 of the support 31, and projects into one of the apertures 39, provided in the plate 30. These apertures 39 are disposed at equal distances from the center of the pin and in suitable position with respect to each of the raised portions 36, so that the plate is locked when a raised portion is opposed to and parallel with the edge of the cutter blade. By withdrawing the spring-controlled pin 50 from the respective aperture 39, of the plate, a further rotation of the plate may be effected. An extension 40, on the support 17, projects into the hollow space 2, of the upright, and is connected by means of the link 41, with a lever 42, pivoted at 43, to the upright 1, and provided with a treadle portion 44, at its projecting end. For the purpose of automatically restoring the lever 42 to initial position when the pressure thereon is eased, a spring 45, is connected with the lever, the other end of the spring being connected to a hook 46, which is threaded into the metal of the upright.

The operation of the device is as follows: A counter-plate having a suitable operative length, is brought into opposition with respect to the cutter blade, 6. The gage 10 on the blade 6, is adjusted in accordance with the distance which the button holes shall have from the edge of the garment. The places where button holes are to be provided

in the garment are usually marked with chalk lines or in some other suitable manner on the fabric. The operator holds the fabric with the marked portion against the stationary cutter, 6, and depresses the treadle 44 with his foot, whereby the support 17 or 31, and the counter-plate thereon, is oscillated toward the edge, which in this manner produces a slot in the garment, having an enlarged end. Upon the release of the treadle 44, the counter-plate is withdrawn from engagement with the garment and the latter may be shifted so as to bring another marked line in engagement with the cutting edge 15.

I claim:

1. A button hole cutting machine comprising a standard having a depending cutter support, a cutter removably secured thereto and projecting downward, a counter plate support below the cutter support having a circular recessed seat in its upper face, provided with a central opening extending through the support and an eccentrically located, upwardly projecting pin, a movable pin in the central opening, and a counter plate rotatably adjustable in said recessed seat, said counter plate having a portion of its upper surface cut away to shorten the operative surface opposed to the cutter.

2. A button hole cutting machine comprising a hollow standard having a hollow bent head portion, a cutter rigidly secured to said head portion and having the cutting edge directed downwardly, a gage adjustably secured to the head, means for holding said gage parallel to the cutting edge, a counter-plate support pivotally mounted on the standard and projecting into the interior thereof, another portion of said counter-plate support projecting into opposition to said cutter, a rotatably adjustable counter-plate carried by said support, said counter-plate having surface portions at different distances from the cutting edge, a treadle pivotally mounted in said standard and projecting into opposite direction with respect to said counter-plate support, and a link connecting said treadle inside the standard with said support.

Signed at Chicago, this 28th day of June, 1912.

MANDEL BROWN.

Witnesses:

L. MARTHAND,
CARL SIEGMUND.