(Model.)

J. W. LUFKIN.

BUTTON HOLE CUTTER.

No. 262,961. Patented Aug. 22, 1882.

Fig. 1.

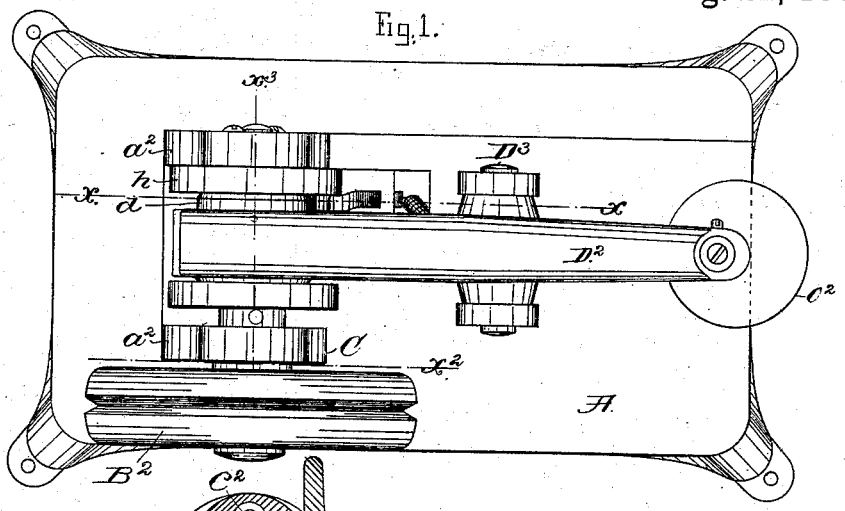


Fig. 2.

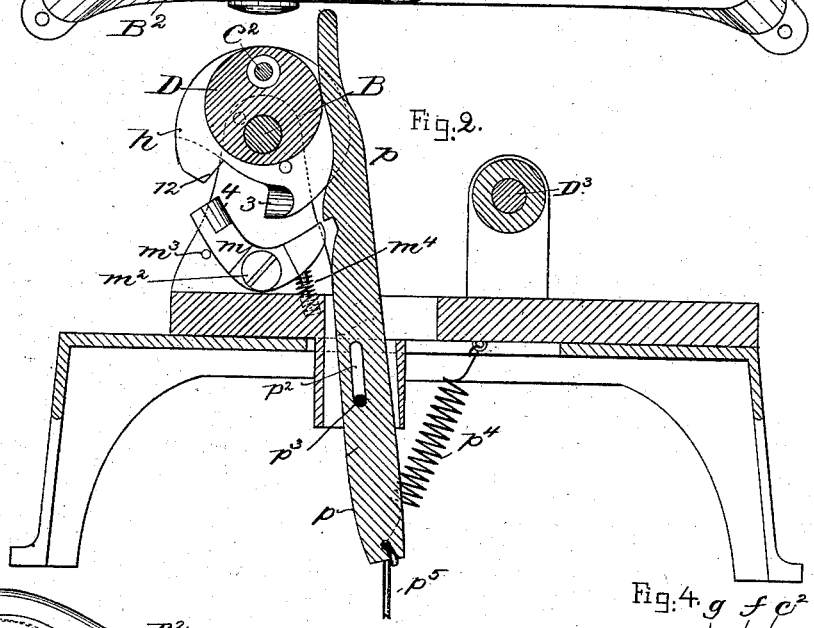


Fig. 3.

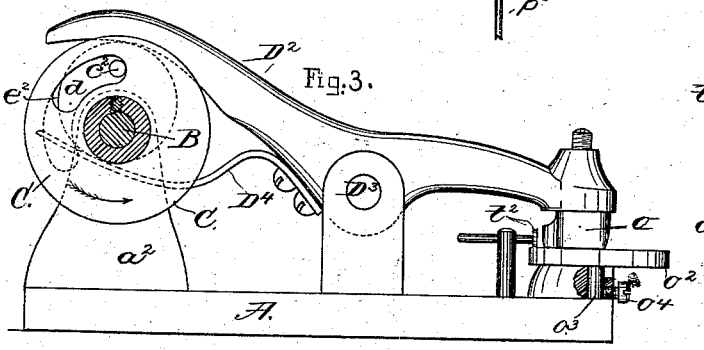
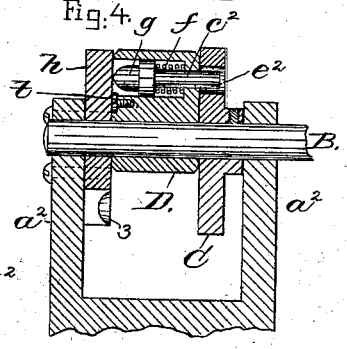


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

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BUTTON-HOLE CUTTER.

SPECIFICATION forming part of Letters Patent No. 262,961, dated August 22, 1882.

Application filed May 29, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOHN W. LUFKIN, of Chelsea, county of Suffolk, State of Massachusetts, have invented an Improvement in Button-Hole Cutters, of which the following description, in connection with the accompanying drawings, is a specification.

In this invention the cutter is carried at the forward end of a lever of the first order, and the material to be cut is placed upon a bed which may be turned about its axis, as the cutter in long use wears the bed. The cutter-carrying lever is actuated by an eccentric normally loose on the main shaft, but which at times is moved with the said shaft by means of a notched disk fast on the said shaft, the eccentric carrying a spring-pin, which, when thrust out from one side of the said eccentric, is engaged by the said disk, and which remains in engagement with the said pin sufficiently long to turn the eccentric once, when the spring-pin, passing beyond its holding device, flies out of engagement with the said notched disk and stops the movement of the lever until the pin is again forced out from one side of the eccentric in opposition to its spring, the pin being forced in such direction by contact with a movable wedge controlled preferably by the foot of the operator.

Figure 1 represents in plan view a button-hole cutter embodying my invention; Fig. 2, a partial longitudinal vertical section thereof on the line $x\,x$; Fig. 3, a section and side elevation on the line x^2; and Fig. 4, a partial section along the line x^3, Fig. 1.

The bed A of the machine has standards a^2 to support the main shaft B, which has fast upon it the driving-wheel B^2 and the disk C, notched or slotted at e^2.

The lever D^2, which carries at its front end the usual cutter or knife, o, is pivoted at D^3 upon uprights erected on the bed A. The rear end of lever D^2, with its connected spring D^4, (shown at Fig. 3,) constitutes a fork, which receives within it the eccentric D, loose on shaft B. The eccentric D is provided at one side with a recess, (see Fig. 4,) in which is placed the clutch-pin C^2, having a foot-piece, g, and surrounded by a spiral spring, f. The normal condition of the pin c^2 is with the foot-piece g extended out from one side of the eccentric, in position to be struck by the inclined face 4 of the pin-moving device, (shown as a lever, m, pivoted at m^2,) the said lever being normally held in the position Fig. 2 by a spring, m^4.

With the parts as described the eccentric is loose on the shaft B, and the cutter o is elevated above the cutting-bed o^2.

The pawl p, having a long slot, p^2, and placed on a pin or fulcrum, p^3, and normally lifted or held up by a spring, p^4, and connected by a rod or link, p^5, with a suitable treadle, if depressed by the operator will, by its link, engage the end of lever m, turn it on its fulcrum, and cause the inclined face 4 of the said lever to strike the foot-piece g of the pin c^2 and force it toward the right, (see Fig. 4,) the slot e^2 of the notched disk C, fast on shaft B, at that time being opposite the end of the pin c^2, thus forcing the said pin against its spring f, out from the eccentric into the said slot, as in Figs. 3 and 4. As soon as the ends of the slot e^2 strike the pin c^2 the eccentric starts to rotate with the shaft B, and the foot-piece g of the pin rides up the incline 3 of the pin-holding device h, or holding-plate, which is made as a plate or disk screwed fast to one of the standards a^2, the said holding device being cut away at one edge, as shown in Fig. 2, so that as soon as the foot-piece g of the pin c^2, in the rotation of the eccentric d, arrives opposite the heel or corner 12 of the said pin-holding plate the pin c^2, no longer held pressed into the eccentric and notch e^2 by the said plate h, is retracted by the spring f from the notch e^2, which leaves the eccentric at rest. The hook of the pawl p holds the lever m against the pin until the foot-piece g gets started on the pin-holding plate, after which the projecting end of the eccentric d strikes the pawl p, removes it back from the lever m, and lets the said lever turn against its back stop m^3. The pin c^2 is prevented escaping from the eccentric by the head of a small screw, t. (See Fig. 4.) The edge of the material being cut will rest against the adjustable edge-gage t^2. The shank o^3 of the cutting-bed o is extended down into a portion of the frame-work where it is held by a set-screw, o^4, which permits the bed to be rotated or turned axially into any desired position.

The mechanism for moving the lever D and leaving it at rest may be employed to good advantage in other than button-hole cutters.

I claim—

1. The lever, its cutter *o*, the cutting-bed, the shaft B, the notched disk fast thereon, the eccentric loose on the said shaft, the spring-held pin therein, and the pin-moving device to force the pin into the notch of the said disk, combined with a pin-holding plate to retain the pin in the notch of the said disk during a partial rotation of the said eccentric, substantially as described.

2. The rotating shaft B and notched disk connected with it, and the eccentric loose on the said shaft and provided with a pin, combined with a pin-holding plate to retain the pin in engagement with the notched plate, substantially as described.

3. The shaft B, its connected notched disk, the eccentric loose thereon, and pin carried by the eccentric, and the plate to hold the pin in engagement with the notched disk, combined with the lever or device having the incline 4 to start the pin upon the plate which keeps it engaged with the notched disk, substantially as described.

4. The shaft B, its attached notched plate, and pin-carrying eccentric loose on the shaft, combined with the lever or device having an incline, 4, to effect the engagement of the pin with the notched disk, substantially as described.

5. The lever *m*, combined with the pawl to engage and move it, and an eccentric to release the said pawl from the said lever, substantially as and for the purpose described.

6. The lever *m* and the eccentric, combined with the pawl *p*, having a long slot, and the fulcrum p^3 for the pawl, and with means, substantially as described, to move the said pawl longitudinally, as and for the purpose set forth.

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

JOHN W. LUFKIN.

Witnesses:
G. W. GREGORY,
W. H. SIGSTON.