No. 688,078. Patented Dec. 3, 1901.

E. FLAGG.

BUTTON SETTING MACHINE.

(Application filed June 5, 1901.)

(No Model.)

Fig. 1,

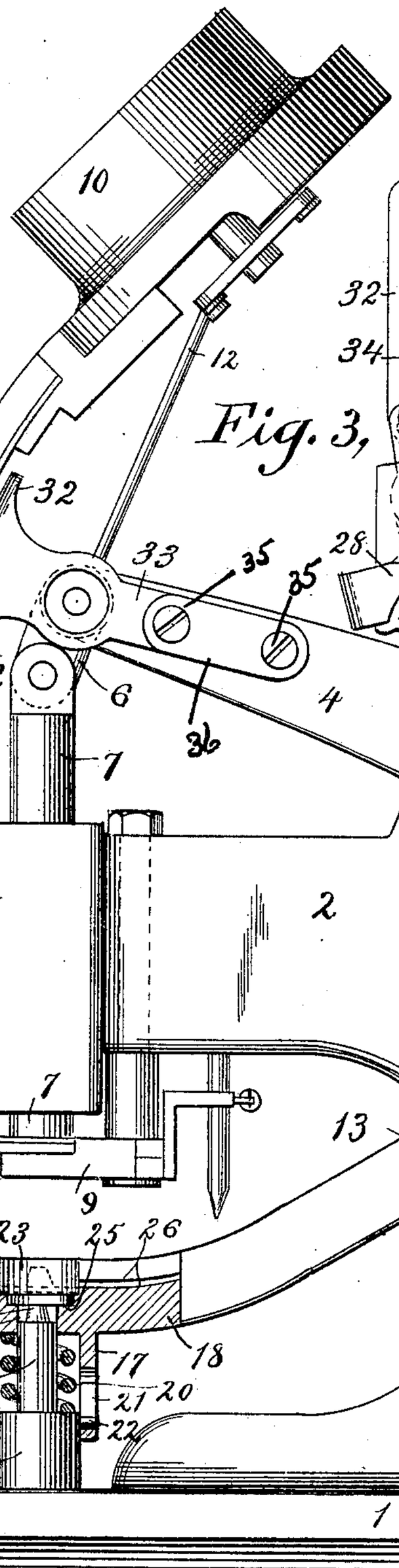


Fig. 2,

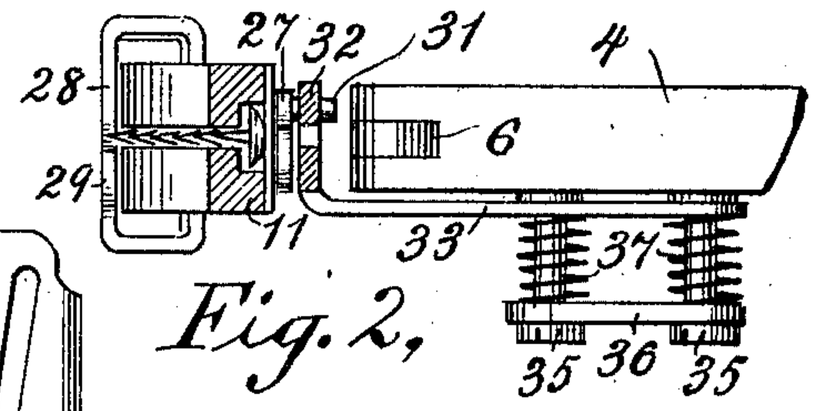
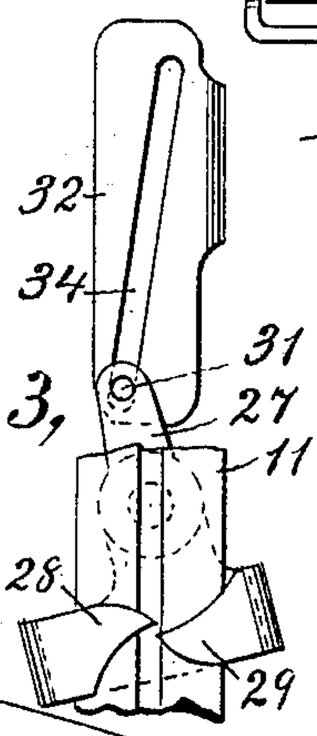


Fig. 3,



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UNITED STATES PATENT OFFICE.

ELISHA FLAGG, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE PATENT BUTTON COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,078, dated December 3, 1901.

Application filed June 5, 1901. Serial No. 63,178. (No model.)

To all whom it may concern:

Be it known that I, ELISHA FLAGG, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented a certain new and useful Improvement in Button-Setting Machines, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings, forming part of this specification.

This invention relates to an improvement in button-setting machines, and more particularly to that kind or class thereof wherein tacks or metal fasteners are automatically fed from a hopper or hoppers to the setting devices, the object of the same being to provide a cut-off for the fastener-chute so constructed and arranged that in the event a tack or fastener becomes jammed therein no injury will result to any part of the machine by reason of the further operation thereof.

With this and other ends in view the invention consists in certain novel features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a part of a button-setting machine having my improved cut-off applied thereto. Fig. 2 is a horizontal sectional view of the cut-off, and Fig. 3 a front view thereof.

The fasteners are driven downward through the garments with this machine, the button-holder being below the space in which the garments are held.

The frame is a casting having a flat base 1, body 2, and head 3. A lever 4, which is pivoted on a pin 5, extending through projections on the body, is connected at its front end by a link 6 with a plunger 7, which extends through the head. A rod 8, pivoted at its upper end to the rear end of the lever 4, is connected at its lower end with either a treadle or some other device by which it is forced upward to actuate the lever and plunger. The fastener-holder 9 is movable vertically, with a fastener supported therein, from the position in which it is shown nearly to the button-holder by the action of the plunger on the head of the fastener, the stem of the fastener projecting below the fastener-holder. This holder is connected with the frame behind the head 3 and is restored to its highest position after each action of the plunger upon it by a spring contained in a recess in the frame. The fastener-chute extends downward from the fastener-reservoir 10 in front of and under the head 3, the lower end of the chute 11 being over the fastener-holder, with which the chute connects when the holder is in its highest position, as shown, and forming a stop to limit the upward movement of the holder. The reservoir 10, which turns on a spindle, is actuated by the lever 4, with which the spindle is connected by a ratchet and pawl at the back of the reservoir and a rod 12. Another reservoir, which is mounted on a support behind the frame, but which is not shown, supplies buttons to the button-chute 13, from the lower end of which the buttons are discharged one at a time into the button-holder. This device surrounds and is supported on a post which is fixed on the base 1 and is composed of the lower section 14 and smaller upper section 15, there being on the section 15 a die 16, in which the fasteners are upset and which fits in the hubs of the buttons. The lower part of the button-holder is a sleeve 17, and on the back of the upper part is an extension 18, which matches the lower end of the chute 13 above and behind the sleeve. The section 14 of the post fits in the sleeve, and the section 15 fits in the hole 19 at the top of the sleeve, and within the sleeve is a coil-spring 20, that acts upward on the holder, there being in the sleeve a slot 21, through which extends a pin or stop 22, fixed in the post. The upper part of the holder contains a recess 23, into which the buttons are fed and in which they lie face downward, certain buttons lying on the annular surface 24, as indicated by the dotted outline of a button in the holder, and other smaller buttons on the annular surface 25. The extension 18 contains a channel 26, like that of the chute 13, and when the holder is in its highest position,

or that in which it is shown, the channel of the extension connects with that of the chute and forms a passage from the chute to the recess 23, and the bottom of this recess is then about even with or a little above the top of the die 16, so the die does not interfere with the buttons as they are fed into the holder.

The cut-off proper is pivoted to the back of the chute 11 and connected with a slotted actuating device which is attached to the lever 4. The back of the cut-off is a plate 27, and on this plate are two bent fingers 28 and 29. This device is attached to the chute by the pivot 30, passing through the back 27. The fingers extend forward on the sides of the chute and nearly to each other in front of it, their pointed ends being close to its face and that of the finger 28 being a little above that of the finger 29. On the back of the plate 27, near its upper end, is a fixed pin 31. The actuating device comprises a curved section 32 and a supporting-arm 33. In the section 32 is a slot 34, through which the pin 31 passes, and the arm 33 is secured on pins 35, fixed in the lever 4 and passing loosely through the arm. On these pins are a connecting-plate 36 and coil-springs 37, which tend to keep the arm close to the side of the lever. When the front arm of the lever is in its highest position, the finger 28 crosses the channel of the chute, but the finger 29 does not, and the pin 31 is at the lower end of the slot 34, which extends upward from the pin and from that side of the chute which is behind the finger 28, or the upper finger. A tack and button are fed into the holders as the lever returns to the position in which it is shown after each operation. The garment is laid on the button-holder. The plunger descends on the tack and forces it downward in the holder 9, and as it pierces the garment it is released from the holder, and when the garment is pinched between the head of the tack and hub of the button, the stem of the tack having entered the button, then the tack, garment, button, and button-holder are depressed together by the action of the plunger on the tack, the pressure exerted by the plunger overcoming the upward action of the spring 20 until the hub of the button descends on the die 16 and the tack is upset in the die within the button. As the chute 13 does not extend close to the button-holder proper, but only to the rear end of the movable extension formed on the holder, the chute does not prevent the garment from descending with the holder, as described, nor is the garment liable to be pulled out of its proper position by contact with the chute. The thickness of the chute next to the extension is such that the top of the rear end of the extension is not depressed below the chute, so the garment cannot get under the chute to be caught between it and the extension when the holder rises. The holder, which is restored to its highest or normal position by the spring 20, closely follows the plunger upward.

During the downward movement of the front arm of the lever 4 the pin 31 on the back of the cut-off on the chute 11 is moved sidewise by that edge of the slot 34 which is the left edge in Fig. 3, the finger 28 being retracted from and the finger 29 being advanced across the channel of the chute. The column of fasteners then descends to the finger 29. With the return movement of the lever the finger 28 is advanced and the finger 29 retracted by the action of the other edge of the slot 34 on the pin 31 and the lowest fastener descends to the holder 9, except when a fastener gets jammed against the chute by the finger 28. Then the reaction of the pin 31 on the edge of the slot will force the arm 33 outward on the pins 35, overcoming the resistance of the springs 37, so that although the cut-off will be inoperative until the jammed fastener is displaced from in front of the finger 28, yet any part of the machine will not be broken or bent by the movement of the lever after the action of the cut-off has been thus obstructed.

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

1. In a button-setting machine the combination with a lever 4 and a chute 11 of: a cut-off pivoted to the back of the chute and having on it a pin 31; a device having in it a slot into which the pin 31 extends; and a yielding fastening securing said device on the lever; substantially as described.

2. In a button-setting machine the combination with a lever 4 and a chute 11 of: a cut-off pivoted to the back of the chute and having on it a pin 31; a device comprising a section 32 and arm 33, the section 32 having in it a slot 34 into which the pin 31 extends; pins 35 fixed in the lever and passing loosely through the arm 33; and springs 37 on the pins 35; substantially as described.

ELISHA FLAGG.

In presence of—
J. E. WOODMAN,
W. C. AYRES.