

APPLICATION FILED JAN. 10, 1912.

2 SHEETS—SHEET 1.

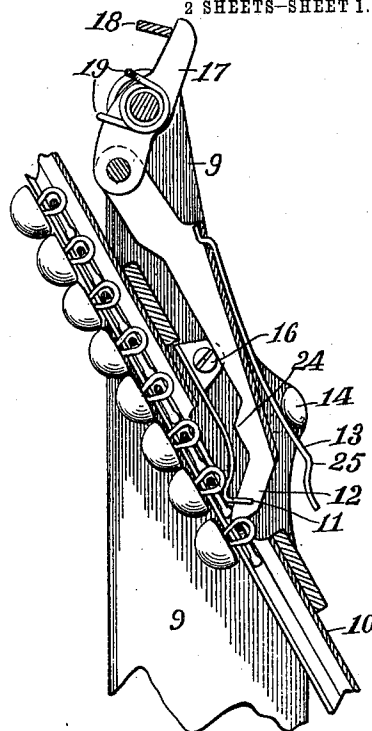


Fig. 7.

Fig. 7.

Fig. 1.

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 BUTTON FEEDING MECHANISM FOR BUTTON SETTING MACHINES.
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1,032,389.

Patented July 16, 1912.

2 SHEETS—SHEET 2.

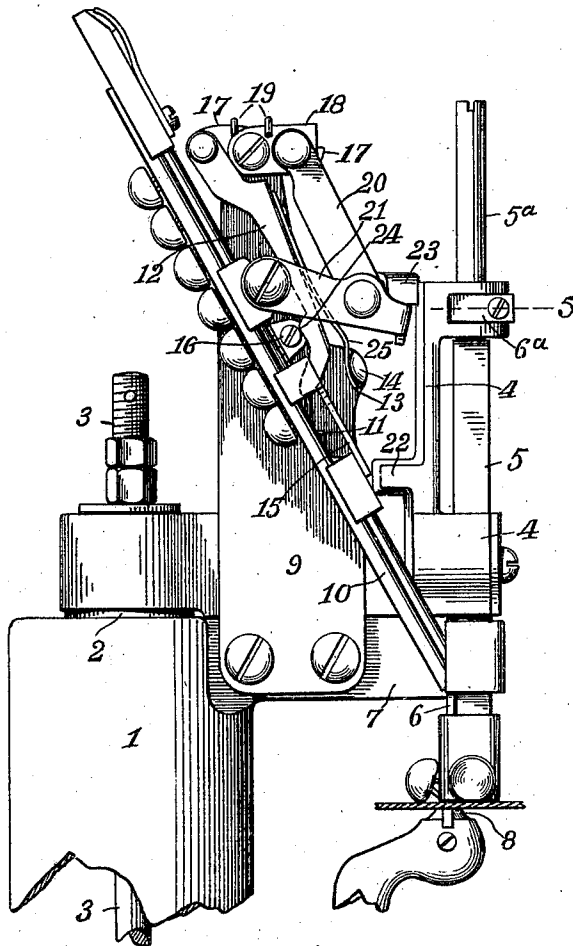


Fig. 3.

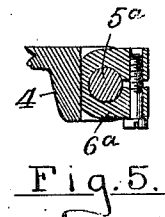


Fig. 5.

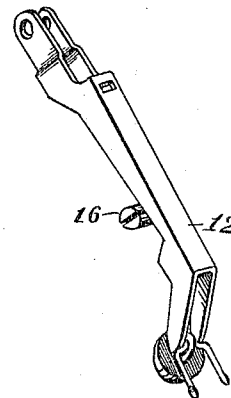


Fig. 6.

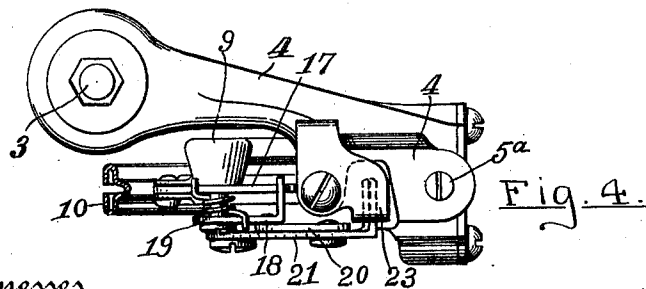


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM E. ELLIOTT, OF GRAND RAPIDS, MICHIGAN.

BUTTON-FEEDING MECHANISM FOR BUTTON-SETTING MACHINES.

1,032,389.

Specification of Letters Patent.

Patented July 16, 1912.

Application filed January 10, 1912. Serial No. 670,370.

To all whom it may concern:

Be it known that I, WILLIAM E. ELLIOTT, a citizen of the United States of America, residing at Grand Rapids; in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Button-Feeding Mechanisms for Button-Setting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to button feeding mechanism for button setting machines, and more particularly to the type of machine having a vertically reciprocable guide to engage the work opposite the anvil and a reciprocable driver movable in the guide to drive the staple or fastener, and its object is to provide a simple and reliable automatic device adapted to be detachably secured to a machine of the type described, and to provide the same with various novel and useful features as hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of a machine of the type described with my device applied thereto; Fig. 2 an enlarged detail in elevation of a portion of the button feeding mechanism; Fig. 3 a detail in side elevation showing the position of the parts at the close of the clenching movement of the machine; Fig. 4 a plan view of the same; Fig. 5 a detail of the friction collar; Fig. 6 a perspective detail of the button feeding pusher; and Fig. 7 an enlarged detail of the safety mechanism of the feeder.

Like numbers refer to like parts in all of the figures.

1 represents the frame of the machine. 2 a vertically reciprocable plunger operated by a rod 3 connected to a treadle (not shown). This plunger carries an integral laterally projecting plate 4 on which is mounted a guide 5 adapted to receive the button and staple from the feeder and carry the same to position above the anvil 8. An upward extension of this guide 5 carries a friction collar 6 slidable thereon and provided with a screw for adjusting the same whereby the guide is frictionally held in contact with the fabric as the plunger descends and is

carried up against a fixed guide arm 7 on the frame and in position to receive another button and staple as the plunger rises. A staple driver 6 is also attached to the arm 4 and reciprocates in the guide to drive and clench the staple.

The device so far described is of a well known construction and needs no further explanation.

My invention resides in the button feeding mechanism hereinafter described, in which 10 is a chute having a bottom slot traversed by the eyes of the buttons and lateral channels traversed by the staples therein. 11 is a yieldable stop projecting into this chute from above the same and adapted to engage in succession the eyes of the button as they move down the chute, and yieldingly stop the same in proper position.

12 is a pusher having parallel sides spaced apart and adapted at the lower end to embrace the eye of the button and engage the shoulders of the staple, as illustrated in Fig. 6. A pin 16 is fixed in the frame 9 close below this pusher and the latter is provided with an inclined projection 24 which engages the pin as the pusher is retracted and raises the lower end of the same to clear the next succeeding button eye and pass above the same.

When many buttons are in the chute their weight will usually cause the pusher to pass over the eye of the lower button but when the chute contains but few buttons the pusher may carry the buttons up the tube. This shoulder is so located on the pusher that should the pusher carry the eye of the last button up the tube away from the stop the shoulder will raise the pusher and release the eye which will then drop to place against the stop and below the pusher thus insuring accurate feeding at all times. This pusher 12 is reciprocated by a lever 17 oppositely projecting from its pivot which lever is operated to retract the pusher by an arm 18 connected to the lever by a yieldable spring 19 to move the pushed downward and having a lateral offset engaging the said lever to move the pusher upward. This arm 18 is reciprocated by a connecting rod 20 pivoted to a lever 21 which lever is moved upward to move the pusher down and feed a button at the termination of the up stroke of the plunger by a projection 22 on the

arm 4 and is oppositely moved at the termination of the down stroke of the machine to move the pusher up into engagement with the next succeeding button in the chute by a shoulder 23 on the upper part of the plate 4.

A spring 13 is attached to the pusher and yieldably holds the same in contact with the pin 16. This spring has an inclined shoulder 25 which when the pusher is retracted engages a rounded projection 14 on the frame and prevents the pusher from descending prematurely. As the guide nearly reaches its upper position the projection 22 raises the lever 21 and thus forces the pusher down to feed the next button into the guide which button when released from the stop 11 proceeds to place in the guide by gravity alone.

Should there be any unusual obstruction to the feeding movement of the pusher the spring 19 will yield and avoid any breakage of the machine. The described feed mechanism is preferably mounted on a detachable frame 9 fixed at its lower end to the guide arm 7.

What I claim is:—

1. In a button setting machine, button feeding mechanism, comprising a chute having a slot to receive the eye of a button and side channels to receive a button fastener, a pusher having parallel sides spaced apart and adapted at the lower end to embrace the eye of a button and engage the shoulders of a fastener, means for reciprocating the pusher, and a yieldable stop to engage the eye of a button and temporarily hold the same.

2. In a button setting machine, button setting mechanism, comprising a chute having a bottom slot to receive the eye of a button and side channels to receive a fastener, a pusher having parallel sides spaced apart and having a downwardly projecting lower end adapted to embrace the eye of a button and engage the shoulders of a fastener, a shoulder on the under side of the pusher, a pin for engagement by the shoulder to raise the said lower end, means for reciprocating the pusher, and a yieldable stop to engage the pusher and temporarily hold the eye of the button.

3. In a button setting machine, button feeding mechanism, comprising a chute having a bottom slot to receive the eye of a button and side channels to receive a button fastener, a yieldable stop to engage the eye of a button and temporarily hold the same, a pusher having a bifurcated end adapted to embrace the eye of a button and engage the shoulders of a fastener, a shoulder on the pusher on the side toward the chute, a pin for engagement by the shoulder to raise the end of the pusher, and a spring mounted on the pusher to yieldably hold it against the pin.

4. In a button setting machine, button

feeding mechanism, comprising a chute having a bottom slot to receive the eye of a button and side channels to receive a button fastener, a yieldable stop to engage the eye of a button and temporarily hold the same, a pusher having a bifurcated end adapted to embrace the eye of a button and engage the shoulders of a fastener, a shoulder on the pusher on the side toward the chute, a pin for engagement by the shoulder to raise the end of the pusher, a spring mounted on the pusher to hold it against the pin, an inclined shoulder on the spring, and a projection on the frame to engage said shoulder.

5. In a button setting machine, button feeding mechanism, comprising a chute to convey buttons and fasteners, a reciprocable pusher having a bifurcated end projecting into the chute to move the buttons, a pivoted lever to reciprocate the pusher, an oscillatory arm engaging the lever to move the same in one direction and connected to the lever by a spring to move the same in the opposite direction, to yield under stress and to permit the arm to move without moving the lever, and means for reciprocating the arm.

6. In a button setting machine, button feeding mechanism, comprising a chute to convey buttons and fasteners, a pusher having one end projecting within the chute to move the buttons and fasteners, an intermediately pivoted lever pivoted at one end to the pusher, an arm pivoted in line with the pivot of the lever and having an offset movable end to engage the lever and move the same in one direction, and a coiled spring connected at one end to the arm and connected at the other end to the lever to yieldably hold the arm and lever in contact and to yield and allow the same to separate.

7. In a button setting machine, button feeding mechanism, comprising a chute to convey buttons and fasteners, a pusher having one end in the chute to move the buttons and fasteners, a stop in the chute to temporarily hold the buttons and fasteners, an intermediately pivoted lever pivoted to the pusher at one end, a second lever pivoted at one end and engaged at the other end by projections on a reciprocating part of the machine, and means for connecting said levers.

8. In a button setting machine, button feeding mechanism, comprising a chute adapted to convey buttons and fasteners, a pusher having a bifurcated end extending into the chute to move the buttons, an intermediately pivoted lever connected at one end to the pusher to reciprocate the same, an arm pivoted co-axially with said lever and having an offset end to engage the lever, a spring coiled around said axis and connected at its respective ends to the arm and lever to yieldably hold the same in con-

tact, a second lever pivoted at one end and adapted to be oppositely engaged at the other end by projections on the reciprocating parts of the machine, and a rod connecting the last-named lever and the arm.

9. In a button setting machine, a button feeding device, comprising a frame detachably secured to the machine, and button feeding mechanism mounted on said frame

and operated by projections on a reciprocating part of the machine. 10

In testimony whereof I, affix my signature in presence of two witnesses.

WILLIAM E. ELLIOTT.

Witnesses:

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L. V. MOULTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."