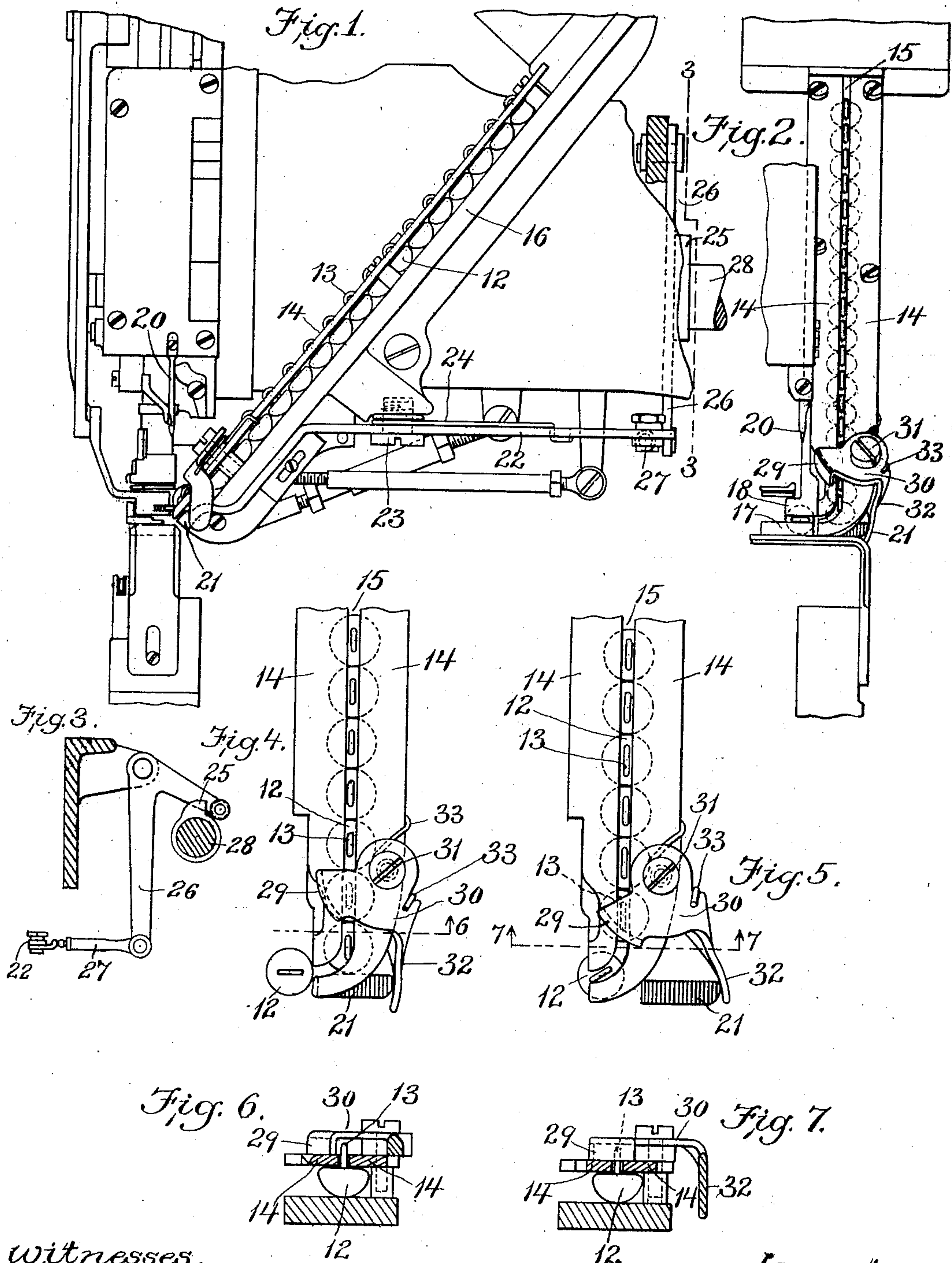


J. PERLEY.
MACHINE FOR SEWING SHANK EYED BUTTONS.
APPLICATION FILED DEC. 14, 1907.

939,161.

Patented Nov. 2, 1909.



Witnesses.

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UNITED STATES PATENT OFFICE.

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THE REECE BUTTONHOLE MACHINE COMPANY, A CORPORATION OF MAINE.

MACHINE FOR SEWING SHANK-EYED BUTTONS.

939,161.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed December 14, 1907. Serial No. 406,532.

To all whom it may concern:

Be it known that I, JOHN PERLEY, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Sewing Shank-Eyed Buttons, of which the following is a specification.

This invention relates to a machine for sewing shank-eyed buttons or buttons having substantially hemispherical heads and shanks formed as eyes projecting from the inner sides of the heads, as in the ordinary button used for boots and shoes.

The type of machine to which the invention relates is shown in Letters Patent of the United States, #690,978, dated January 14, 1902, said machine comprising an inclined button chute along which a row of buttons is adapted to slide by gravitation from a suitable reservoir, and stitch-forming mechanism adjacent to the lower end of the chute, adapted to form lock stitches engaging the eyes of the button with a boot or shoe upper or other piece of work, the stitch-forming mechanism including a reciprocating needle which passes through the eye of the lowest button in the chute.

The machine to which my invention relates, is provided with a reciprocating pusher which engages the head of the lowest button in the chute, and moves it to the exact predetermined stop required to insure the passage of the needle through the eye of the button, said pusher being reciprocated crosswise of the path in which the buttons move down the chute, and moving each button horizontally in the laterally curved mouth or outlet of the chute. When the pusher is projected to hold the button in position to receive the needle, it acts as a stop for the lowest button in the chute, and holds the entire row of buttons from descending. When the pusher is retracted, it permits the lowest button to drop to a position in front of the pusher, so that the latter will engage the button, and move it to its needle-receiving position. It sometimes happens, particularly when buttons of the minimum size are used, that two buttons will drop into the path of the pusher when the latter is retracted. This causes trouble because the buttons clog the pusher, and prevent its forward movement.

My invention has for its object to obviate this difficulty, and to this end consists in the

combination with switch forming mechanism, of a button chute, a pusher movable across the chute and coacting with the lower end of the chute to deliver a button with its eye in needle-receiving position, and to arrest the column of buttons in the chute, a movable button stop near the lower end of the chute, and means whereby the stop is moved into position to arrest the buttons in the chute when the pusher is retracted and then moved out of arresting position when the pusher is projected. Provision is thus made for preventing more than one button at a time from dropping into the path of the pusher.

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a side elevation of a portion of a button sewing machine embodying my invention. Fig. 2 represents an end elevation of substantially that part of the machine shown in Fig. 1. Fig. 3 represents a section on line 3—3 of Fig. 1, the scale in Fig. 3 being smaller than in Fig. 1. Figs. 4 and 5 represent enlargements of a portion of Fig. 2. Fig. 6 represents a section on line 6—6 of Fig. 4. Fig. 7 represents a section on line 7—7 of Fig. 5.

The same numerals of reference indicate the same parts in all the figures.

In the drawings, 12 represents the heads and 13 the shank eyes of ordinary shoe buttons which are adapted to slide by gravitation down the inclined chute of a button sewing machine. The cover or top of the said chute is here shown as composed of inclined plates 14 14, the adjacent edges of which are separated by a slot 15, adapted to guide the shank eyes of the buttons, the heads of the buttons being adapted to slide on an inclined plate or guide 16, the shank-eyes extending through the slot 15 and above the face of the chute. The plates 14 and slot 15 are curved laterally at the lower end of the chute, so that the eyes of the buttons emerging from the chute are directed horizontally between a suitable supporting bed 17 (Fig. 2) and a presser foot 18, said bed and foot holding the button eye in position to receive the needle 20 of the stitch-forming mechanism when the needle descends.

21 represents a pusher, which is reciprocated behind the lower end of the chute, and is adapted to be projected, as shown in Figs. 2 and 4, to engage the head of the lowest

button, and move the button laterally to its needle-receiving position, the said pusher when projected, serving as a stop to arrest the lowest button in the chute, and through the latter the entire row of buttons, as shown in Fig. 4. The pusher is also adapted to be retracted to the position shown in Fig. 5, and when so retracted it permits the lowest button to fall into the curved delivering end of the chute, so that it may be engaged by the pusher, and moved to its needle-receiving position. The pusher as here shown, is a head on one end of a lever 22, which is connected by a pivot screw or fulcrum 23 with a fixed part of the machine, and is reciprocated to project and retract the pusher by means of a spring 24 which normally holds the lever with the pusher 21 in the projected position shown in Figs. 2 and 4, and a cam 25 and bell crank lever 26 (Fig. 3) which act to move the pusher against the stress of the spring 24, to the retracted position shown in Fig. 5. The end of the lever 22 opposite the pusher 21 is connected with the bell crank lever 26 by means of an arm 27. The cam 25 is attached to the driving-shaft 28, which carries the cams that operate the stitch-forming mechanism and other movable parts of the machine. The cam 25 is formed to impart to the lever 22 a quick retracting movement, and to quickly release the same, so that the spring 24 is permitted to quickly project the pusher, and move the lowest button to its needle-engaging position. The mechanism above described is well known and in public use, and therefore is not claimed herein.

In carrying out my invention, I provide an upper button stop 29, which is movable over the face of the chute and across the slot thereof above the pusher, and is adapted to obstruct the path of the shank eyes of the buttons in the chute and to arrest all but the lowest button therein when the pusher is retracted, as shown in Fig. 5, and to leave the slot of the chute unobstructed when the pusher is projected, as shown in Fig. 4. The stop 29 is here shown as an ear formed on the outer end of an arm 30, which is pivoted at 31 to one of the plates 14 of the chute, said stop or ear being preferably curved, as indicated in Figs. 2, 4 and 5. The arm 30 is provided with a downwardly-bent ear 32, which is pressed by a spring 33 against the rear end of the pusher 21, the said spring yielding to allow the button stop to be moved to its button-arresting position by the retraction of the pusher, as shown in Fig. 5, and acting to move the stop 29 to its inoperative position when the pusher is projected, as shown in Fig. 4. Since the plates 14, 14 constituting the slotted cover of the chute have flat inner and outer surfaces, the inner surface presents a guiding face for the flat sides or bases of the hemispherical button

heads so that, in connection with the slot 15, the buttons are guided down the chute in a manner that will prevent their becoming jammed in any way by the operation of the stop 29 which latter oscillates across the flat outer surface of the slotted cover and acts only on the shank eyes which project through said slot 15.

The operation is as follows: Assuming the lowest button in the chute to be in the curved end of the slot 15 below the stop 29, as shown in Fig. 5, the pusher 21 is projected, and moves the said button to the position shown by dotted lines in Figs. 2 and 4, the shank of the button being then in position to receive the needle 20. This movement of the pusher permits the spring 33 to displace the button stop 29, so that the next button in the chute comes to a bearing on the upper side of the pusher, and is arrested by the latter. When the pusher is retracted, it forces the button stop 29 between the button in contact with the pusher and the one above it, just before the pusher releases the lowest button. It will be seen, therefore, that only one button can drop in front of the pusher at a time, so that there is no liability of the pusher being obstructed in its forward movement by a superfluous button.

I do not limit myself to the described means for mounting and operating the button stop 29, as the said means may be variously modified without departing from the spirit of my invention.

I claim:

1. In a machine for sewing shank-eyed buttons, the combination with stitch-forming mechanism, of a button chute, a pusher movable across the chute toward and from the path of the needle of the stitch-forming mechanism and coacting with the lower end of the chute to deliver a button with its eye in needle-receiving position and to arrest the buttons above the delivered one, a movable button stop near the lower end of the chute, and means whereby said stop is moved into position to arrest the buttons when the pusher is retracted and then moved out of arresting position when the pusher is projected.

2. In a machine for sewing shank-eyed buttons, the combination with stitch-forming mechanism, of a button chute, a pusher movable across the chute toward and from the path of the needle of the stitch-forming mechanism and coacting with the lower end of the chute to deliver a button with its eye in needle-receiving position and to arrest the buttons above the delivered one, a movable button stop near the lower end of the chute, and means whereby said stop is moved into position to arrest the buttons when the pusher is retracted and then moved out of arresting position when the pusher is projected.

jected, said means comprising devices whereby the stop is actuated in one direction by the pusher.

3. In a machine for sewing shank-eyed buttons, the combination with stitch-forming mechanism, of a button chute having a flat slotted cover, a pusher movable across the chute toward and from the path of the needle of the stitch-forming mechanism and
10 coacting with the lower end of the chute to deliver a button with its eye in needle-receiving position and to arrest the buttons above the delivered one, a button stop mov-

able across the outer face of the chute in the path of the shank-eyes projecting through the slot of the cover, and means whereby said stop is moved into position to arrest the buttons when the pusher is retracted and then moved out of arresting position when the pusher is projected. 15 20

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

JOHN PERLEY.

Witnesses:

E. BATCHELDER,
P. W. PEZZETTI.