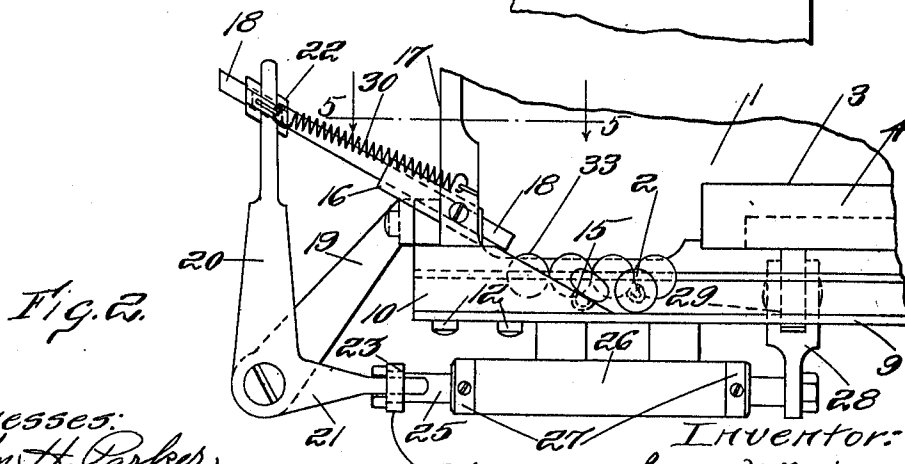
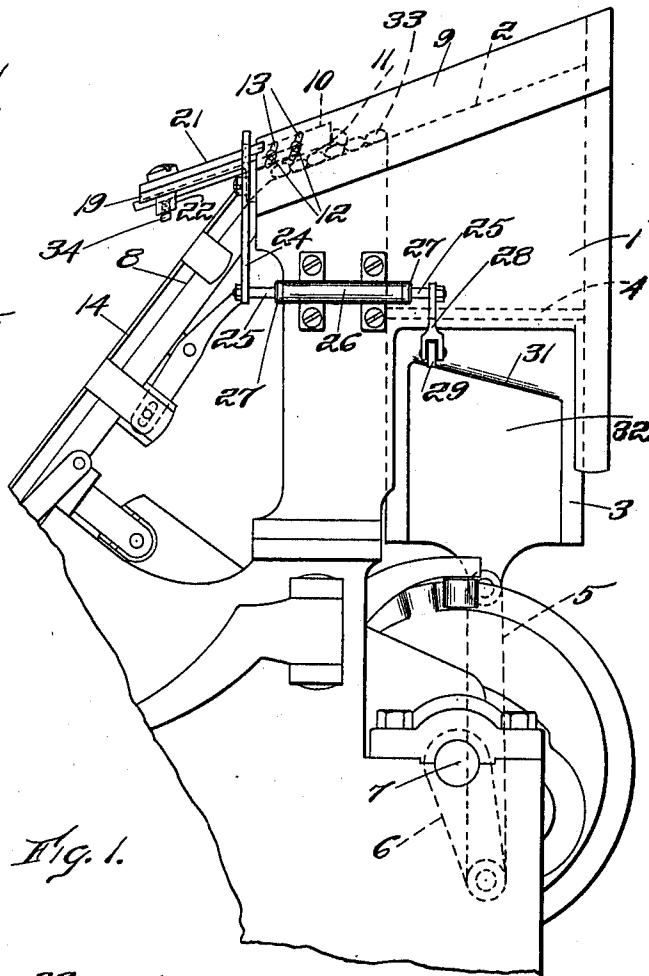
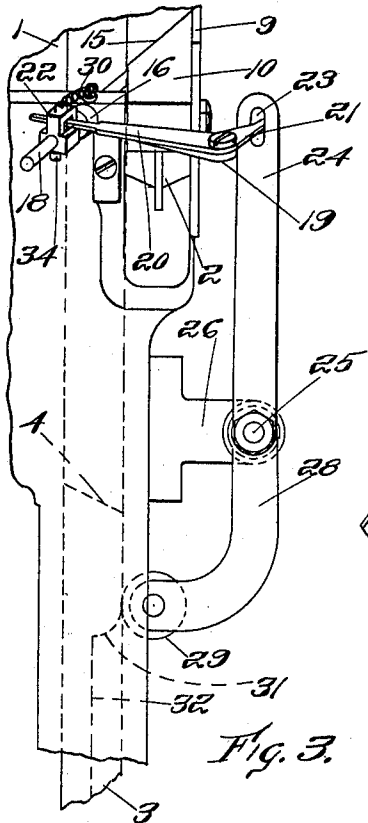


G. W. PERKINS.
 ANTICLOGGING ATTACHMENT FOR BUTTON FASTENING MACHINES.
 APPLICATION FILED OCT. 5, 1910.

992,899.

Patented May 23, 1911.

2 SHEETS-SHEET 1.



Witnesses:
 John H. Parker
 Alvin Tarr

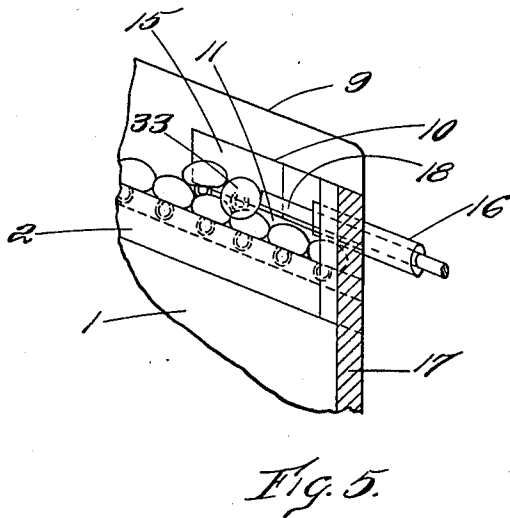
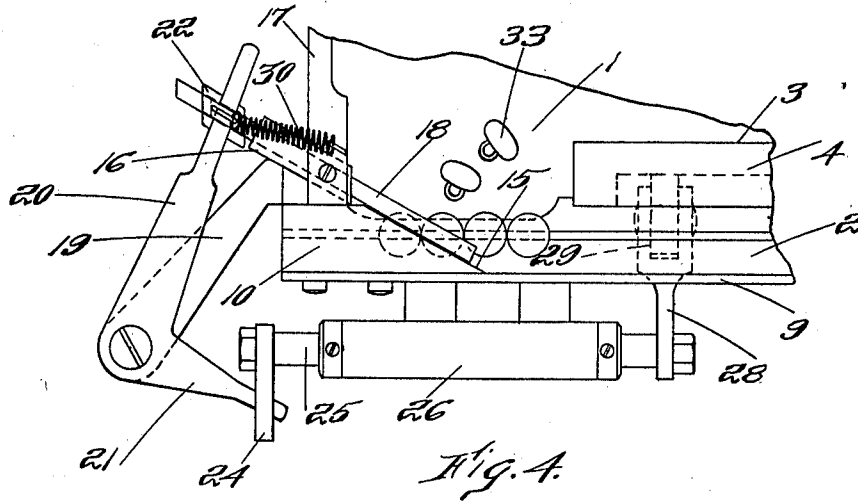
Inventor:
 George W. Perkins
 by Macdonald, Calver, Caspeland & Sike
 Attorneys.

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UNITED STATES PATENT OFFICE.

GEORGE W. PERKINS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HEATON-PENINSULAR
BUTTON FASTENER COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF
MAINE.

ANTICLOGGING ATTACHMENT FOR BUTTON-FASTENING MACHINES.

992,899.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed October 5, 1910. Serial No. 585,433.

To all whom it may concern:

Be it known that I, GEORGE W. PERKINS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Anticlogging Attachments for Button-Fastening Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to a button fastening machine and has special reference to the button feeding mechanism.

The buttons are usually fed from a hopper through a raceway to the mechanism for attaching the buttons to the boot or shoe or other article to which the buttons are to be attached. When the buttons are delivered from the hopper into the upper end of the raceway, they usually fall into the raceway in miscellaneous position, and it is necessary that they should be then properly positioned so that they will slide down the raceway in regular order, the eye moving down in a groove or slot in the raceway. Sometimes heretofore a switch so-called is employed which extends over a portion of the raceway at sufficient elevation above the throat of the raceway to allow for the thickness of the head of the button, the switch extending at an inclination parallel with the raceway in a direction toward the upper end of the raceway so as to engage the heads of any buttons which may be piled on top of others and to throw them off. Sometimes even with this construction the buttons pile up and get clogged between the switch and the raceway and the object of the present invention is to provide an automatic device for dislodging any buttons which may be piled up and tend to clog the passage under the switch.

The invention will be fully understood from the following description taken in connection with the accompanying drawings, and the novel features are pointed out and clearly defined in the claims at the close of the specification.

In the drawings,—Figure 1 is a side elevation of a portion of a button attaching machine embodying the invention, unnecessary parts being broken away. Fig. 2 is an enlarged plan view of a portion of the hopper and raceway with the attachment embodying

the invention. Fig. 3 is a front elevation of the parts shown in Fig. 2. Fig. 4 is a similar view to Fig. 2 showing the clearance member or push-rod in its forward position extending transversely of the raceway. Fig. 5 is a section on line 5—5 of Fig. 2 but with the push-rod moved part of its forward stroke engaging one of the buttons which is in the clogging position.

Referring now to the drawings,—1 represents the hopper in which the buttons are held in bulk and 2 the hopper stand raceway so termed into which the buttons are delivered by an elevator or gate 3 having the beveled upper edge 4 which lifts the buttons from the hopper and from which they overflow when the elevator has reached the upper end of its stroke and roll over into the raceway 2, the surplus buttons falling back into the hopper 1. Briefly described, the elevator 3, or gate as it is sometimes termed, is a vertically reciprocating plate moving up and down inside of the hopper along the inner face of one wall thereof, the upper edge 4 being beveled, as shown in Fig. 3, to engage the buttons on its upper surface when the said gate is at the lower end of its stroke and when it moves upward it carries with it the buttons which are lodged on its upper edge. As shown, the elevator or gate 3 is operated through a connecting rod 5, crank 6 and driving shaft 7, so as to give a vertically reciprocating movement to the gate 3.

In the preferred form of feed such as is shown in the drawings, the hopper stand raceway 2 connects with a raceway 8 of steeper descent than the raceway 2 which carries the buttons down to the proper mechanism for feeding the buttons to the position where they are to be fastened. This raceway 8 is shown broken away, it not being deemed necessary to show the connecting mechanism at the lower end of the raceway 8 as that forms no part of the present invention.

Secured to the frame or button guard 9 just above the hopper stand raceway 2 near its lower end is a switch 10 which extends for a short distance from the lower end of the raceway 2 toward the upper end, being located sufficiently above the top of the raceway 2 to afford a clearance space 11 for the passage of the head of the button when the

button is properly seated in the raceway with its eye extending down into the throat or groove of the raceway. The switch 10 is secured to the frame or button guard 9 by means of screws 12 passing through slots 13 in the button guard and extending into holes in the switch which are tapped out to receive the screws. The switch is made adjustable up and down by making the slots 13 vertically elongated, the purpose of having the switch adjustable being to accommodate buttons having heads of different sizes.

The raceway 8 is provided with a cover 14 which is also raised above the raceway so as to allow clearance space for the heads of the buttons and to keep the buttons from falling out of the raceway 8 during the descent.

As thus far described the raceway and switch and elevator are of well known construction.

Although the switch 10 is intended to prevent the buttons from clogging and to prevent the buttons from riding on top of each other in passing under the switch, sometimes if they are riding on top of each other when they reach the switch, they clog the passage, and the device of the present invention is to prevent such clogging. The upper or entrance end of the switch 10 is preferably beveled on the side toward the interior of the hopper, as shown in plan view in Fig. 2, so that its beveled edge 15 will extend in a diagonal direction crosswise of the throat or groove of the raceway 2 but, as previously stated, some distance above it.

Slidably mounted in a bearing or bushing 16 in the front end 17 of the frame of the hopper is a rod 18 which, when it is reciprocated, moves back and forth above the throat of the raceway diagonally thereof, preferably at the same angle as the beveled face 15 of the switch 10 and preferably extending alongside of said beveled face. Means are provided for automatically actuating said slide rod so that it will reciprocate back and forth diagonally above the throat of the raceway as described and thereby the end of the rod will engage any button which may be elevated above the head of the button properly seated in the raceway and push it off so that it will fall down into the hopper. The preferred method of actuating the said slide rod is by means of suitable mechanism actuated by the movement of the elevator or gate 3 in such manner that the forward thrust of the rod 18 will occur at each upward stroke of the elevator. The mechanism for doing this is shown and described as follows: Fulcrumed on the arm of a bracket 19 secured to the hopper stand is a bell crank lever, one arm 20 of which engages with a slotted block 22 secured to the rod 18, the other arm 21 of said bell crank lever engaging with a slot 23 in the upper end of a lever 24 whose lower end is fast to a

rockshaft 25 which is journaled in bearing 26 secured to the hopper stand. Two collars 27, 27, fast on the rockshaft 25, one at each end of the bearing 26 prevent endwise movement of the rockshaft.

Secured fast to the opposite end of the rockshaft 25 from the lever 24 is a curved lever 28 carrying at its lower end a roller 29 which engages the outer face of the gate or elevator 3, being normally kept in such contact by a spring 30, one end of which is attached to the upper end of the hopper, and the other end of which is connected with the slotted block 22, the tension of said spring being such that it normally holds the rod 18 at the end of its full inward stroke and thereby, through the intermediate mechanism, causing the roller 29 to remain in contact with the outer face of the gate 3.

Formed on the face of the gate 3 is a cam projection 31 which, when the elevator gate descends, turns the curved lever 28 and the rockshaft 25, thereby actuating the clearance mechanism so as to cause the backward movement of the rod 18. When the elevator rises, the tension of the spring will cause the roller to still remain in contact with the outer face of the gate so that when it passes off of the cam into the sunken portion 32 of the gate, the rod 18 will be thrust forward to engage the buttons 33, if any, piled up in the raceway and push them off.

The slot 23 in the upper end of the vertical lever 24 and the slot in the block 22 allow rocking movement of the bell crank on its stationary fulcrum and play of the arms 21 and 20 through the respective slots so that the rod 18 can reciprocate in a straight line. The block 22 is adjustably mounted on the rod 18 so as to vary the extent of stroke and is clamped in its adjusted position by a screw 34.

What I claim is:

1. In combination with a button race-way, a switch over the race-way with a space between the switch and the race-way sufficient to allow passage under the switch of the heads of the buttons properly seated in the race-way and a clearance member movable transversely of the raceway in front of the entrance to the passage under the switch at a slight elevation above the heads of the buttons properly seated in the race-way.

2. In combination with a button race-way, a reciprocable push member movable in a transverse path over said raceway at an elevation spaced above said race-way at all times sufficient to pass over the heads of the buttons properly seated therein and adapted to engage buttons that are elevated above the proper seat on the raceway, a vertically reciprocable elevator which is adapted to lift buttons to the race-way, a cam surface on said elevator and intermediate mechanism connected with said push member and

engaged by said cam whereby the movement of said elevator will through said intermediate mechanism actuate said push member to reciprocate in its transverse path over the
5 race-way.

3. In combination with an inclined button raceway having a longitudinal slot for the eyes of the buttons, a switch positioned over the raceway near the lower end thereof and
10 extending upward substantially parallel therewith toward the approaching buttons with a space between the switch and the raceway sufficient to allow free passage under the said switch of the heads of the but-
15 tons properly seated in the raceway, and a clearance member movable transversely of the raceway in front of the entrance to the passage under the switch at a slight elevation above the heads of the buttons properly
20 seated in the raceway.

4. In combination with a button feed raceway having a longitudinal slot to receive the eyes of the buttons when the heads of the buttons are properly seated in the raceway,
25 a button hopper, a vertically reciprocable member whereby the buttons are lifted from the hopper to the raceway, a reciprocable clearance member movable transversely of the raceway at an elevation above the race-
30 way slightly in excess of the heads of the buttons properly seated in the raceway and intermediate mechanism actuated by said button lifting mechanism to actuate said clearance member.

5. In combination with a button raceway 35 having a longitudinal slot to receive the eyes of the buttons with the heads of the buttons seated upon the top of the raceway, a reciprocable push-rod movable in a transverse path over the said raceway at an elevation 40 above the raceway sufficient to pass over the heads of the buttons properly seated therein, a rocking lever which engages said push-rod and means for actuating said rocking lever to reciprocate said push-rod. 45

6. In combination with a button raceway having a longitudinal slot to receive the eyes of the buttons with the heads of the buttons seated upon the top of the raceway, a reciprocable push-rod movable in a transverse 50 path over the said raceway at an elevation above the raceway sufficient to pass over the heads of the buttons properly seated therein, a rocking lever which engages said push-rod, a button hopper, a vertically reciprocable 55 elevator which is adapted to lift buttons from said hopper to the raceway, a cam surface on said elevator and intermediate mechanism connected with said rocking lever and engaged by said cam whereby the movement of said elevator will actuate said push-rod. 60

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

GEORGE W. PERKINS.

Witnesses:

JESSIE E. MORRISON,
ALICE H. MORRISON.