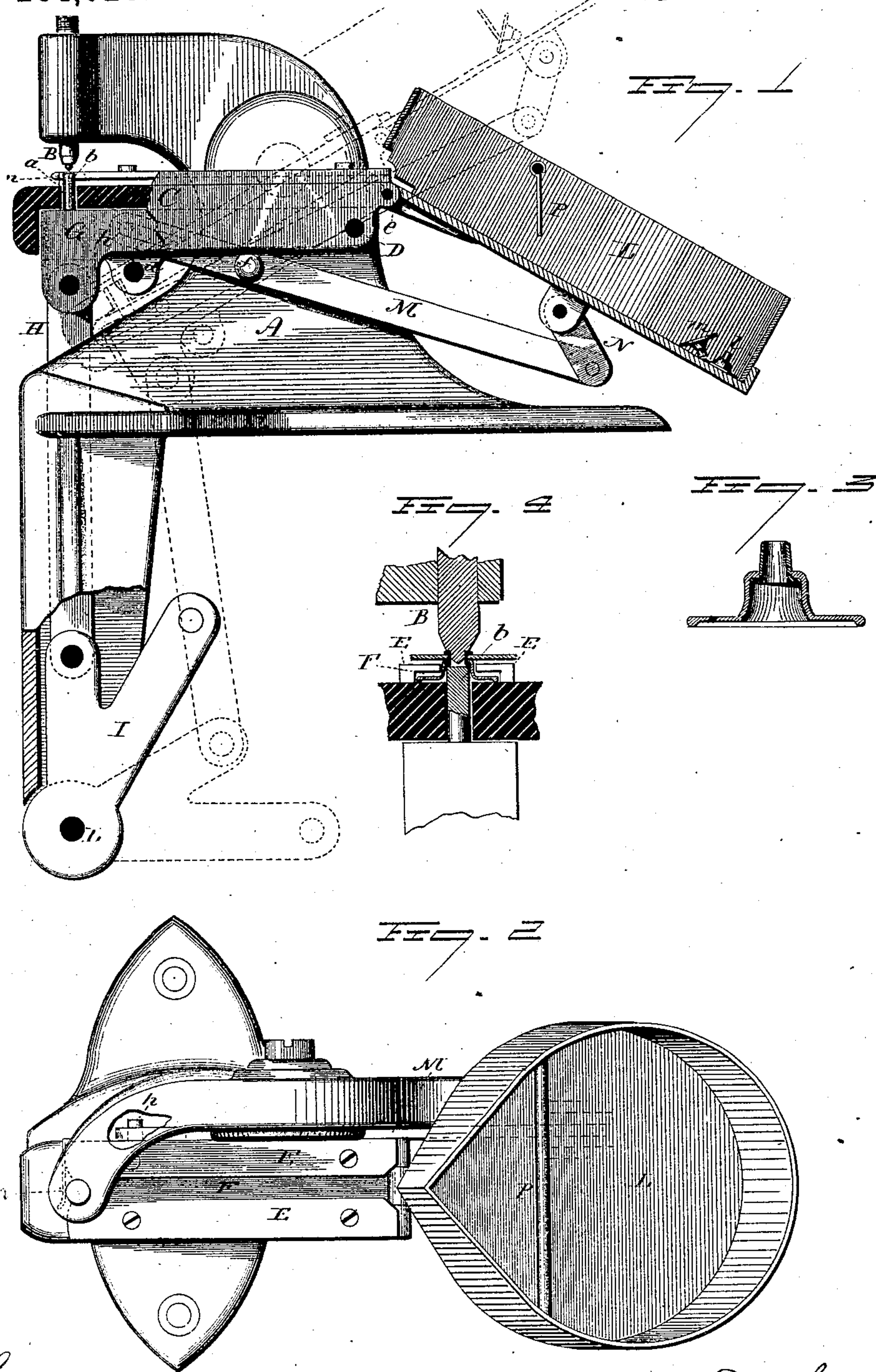


(No Model.)

E. D. WELTON.
BUTTON SETTING MACHINE.

No. 284,928.

Patented Sept. 11, 1883.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN D. WELTON, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE
SCOVILL MANUFACTURING COMPANY, OF SAME PLACE.

BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 284,928, dated September 11, 1883.

Application filed August 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWIN D. WELTON, of Waterbury, in the county of New Haven and State of Connecticut, have invented new Improvements in Button-Setting Machines; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a sectional side view; Fig. 2, a top view; Fig. 3, a section of the button, enlarged; Fig. 4, a vertical section through the anvil and follower, enlarged.

This invention relates to an improvement in machines for attaching buttons to garments, particularly to that class of buttons which are constructed with a central recess on their face, with a hollow rivet extending from their rear, and such as shown in section in Fig. 3, the object of my invention being to construct the machine so that a punch will enter the recess in the face of the button and take a firm bearing upon the bottom of the recess to resist the upsetting of the rivet upon the opposite side, and also the construction of the hopper, whereby the buttons therein are prevented from clogging the passage, and their proper presentation to the channel is insured; and it consists in the construction, as hereinafter described, and more particularly recited in the claims.

A represents the frame, carrying in its upper arm a vertical anvil, B. The point of this anvil is constructed to enter the tubular rivet and cause it to spread in the usual manner for such setting devices.

C is the conductor, hung upon a pivot, D, at the rear, and so as to vibrate on said pivot, as its center of motion, to the position seen in broken lines, Fig. 1. Upon the upper side of this conductor guides E E are arranged, forming a channel-way, F, for the shank of the buttons, the guides recessed upon their underside, as seen in Fig. 4, to permit the passage of the buttons from the hopper. Through the conductor, directly beneath the anvil, is an opening, a, through which the follower b may freely work. This follower is hung upon a lever, G,

the said lever extending rearward through a recess in the conductor and hung upon the same pivot, D, as indicated in broken lines, Fig. 1. From this lever G a connecting-rod, H, extends downward, and connected to one arm of a bell-crank lever, I, hung upon a pivot, L, below. To the other arm power is applied by foot or otherwise to turn the lever I as from the position in Fig. 1 to that in broken lines, same figure. Such vibratory movement of the lever I will impart a corresponding vibratory movement to the lever G.

Below the lever G a stop, d, is arranged on the conductor. This, as here represented, is by a pin extending across beneath the lever, but at a little distance below the lever, and so that, starting from the position seen in Fig. 1, the lever G will be first moved downward until it shall strike the stud d, and from that point the lever G will carry the conductor with it to the position seen in broken lines, which is the extreme down position.

L is the hopper, of any convenient shape, hinged at its mouth end to the conductor, as at e.

M is a lever hung to the frame at f, one arm extending rearward and connected by a link, N, to the hopper. Its other arm is slotted, and in this slot a stud, h, on the conductor works. The normal position of the hopper is inclined backward and downward, as seen in Fig. 1; but as the conductor C, turning upon its pivot D, descends, it correspondingly turns downward the forward arm of the lever M and raises the rear arm of that lever, and that rear arm being considerably longer than the forward arm, the hopper is raised much faster than the conductor descends; hence when the conductor has dropped to its lowest position, the hopper will have been raised to a position substantially in the plane with the channel, and so that the buttons in the hopper may pass directly into the channel. Then, when the conductor returns, the hopper descends proportionately faster than the conductor rises, and brings the hopper back to its inclined position. There is therefore imparted to the hopper a vibratory movement much greater than that of the channel, and whereby the mass of buttons in the hopper is constantly agitated,

so as to compel them to change their positions. The bottom of the hopper is flat, and the proper position of the buttons is with the face downward, as at *l*, and in this position they
 5 will properly pass to the channel, being conducted thereto by the contraction of the sides of the hopper toward its mouth; but as the mass of buttons will fall toward the mouth, those which should stand in inverted position,
 10 as seen at *m*, would clog the way, and prevent those which are properly positioned from entering the channel. To prevent these improperly-arranged buttons from clogging the passage, I hang a plate, *P*, across the hopper
 15 near its upper edge, the plate, below the hinging-point, being free to swing, and the distance between the lower edge of this plate and the bottom of the hopper is slightly more than the thickness of the button, including the rivet,
 20 and so that when the buttons pass down the hopper those which are in proper position will pass freely beneath the plate *P*; but those which are inverted, necessarily occupying a greater vertical space, cannot pass beneath,
 25 but will be arrested, as seen in broken lines, Fig. 2, thus leaving the lower part of the hopper only for the reception of those which may have been properly presented. The plate is hinged, so as to permit all the buttons that may
 30 be in the hopper to return after they shall have passed to the mouth, for the reason that sometimes one or more of the buttons, after they have properly passed the plate or check *P*, will become disarranged or inverted, and then
 35 would serve to clog the passage of other buttons; but because the check *P* is hinged, all the buttons can return, and those which have been thus inverted may have an opportunity to be again set right side up. The hinging of the
 40 check is not essential, but desirable to provide against a possible emergency. When hinged, a stop must be provided to prevent its swinging forward beyond its vertical plane—that is, the plane at substantially right angles
 45 to the bottom of the hopper. The sides of the hopper, converging, as they do, from the point where the check is hung, may serve as such stop; or a stop may be arranged at any desirable point to prevent such too far forward
 50 swinging movement.

The material to which the button is to be attached is placed over the first button in the channel when the channel is in its depressed position, as seen in broken lines, Fig. 1. At
 55 this time it will be understood the follower *b*

is below the face of the conductor, and so as to have permitted the button to have passed down into its proper position over the follower. Then, as the lever *G* and conductor rise, the follower *b* enters the recess in the button, as
 60 seen in Fig. 4, and takes its bearing upon the bottom of that recess, and, continuing the movement of the lever *G*, the tubular end of the button is forced through the material and upset by the anvil *B* in the usual manner.
 65 This depression or dropping of the follower, it will be observed, is necessary for this particular class of buttons, for the reason that were it not thus dropped it would prevent the passage of the first button to a position be-
 70 tween the follower and anvil. The follower thus arranged also serves to apply a bearing upon the button for the upsetting of the rivet at the point where it is most needed, and takes the strain of such upsetting from all other
 75 points on the button. After the button has been thus attached, the garment is drawn from its position, the spring *n*, which serves as a stop at the lower end of the channel, yielding
 80 for the escape of the button, and then returns to stop the next button.

I claim—

1. In a button-setting machine, the combination of the stationary anvil *B*, the vibrating conductor *C*, and the follower *b* with mechanism, substantially such as described, to with-
 85 draw said follower from the channel for the presentation of the button and return it to take its bearing in the recess of the button, substantially as described.
 90

2. In a button-setting machine, the combination of an anvil and follower for setting the button, the vibrating conductor *C*, the hinged hopper *P*, and mechanism, substantially such as described, to impart a greater vibratory
 95 movement to the hopper than that which is imparted to the conductor, substantially as described.

3. In a button-setting machine, the combination of the button-setting mechanism, sub-
 100 stantially such as described, a channel to present the buttons thereto, a hopper and mechanism, substantially such as described, for imparting a vibrating movement thereto, with the check *P*, arranged across the hopper
 105 above its mouth, substantially as described.

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Witnesses:

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