

(No Model.)

L. D. HAWKINS & E. WOODWARD.
BUTTON SETTING MACHINE.

No. 424,417.

Patented Mar. 25, 1890.

Fig. 1.

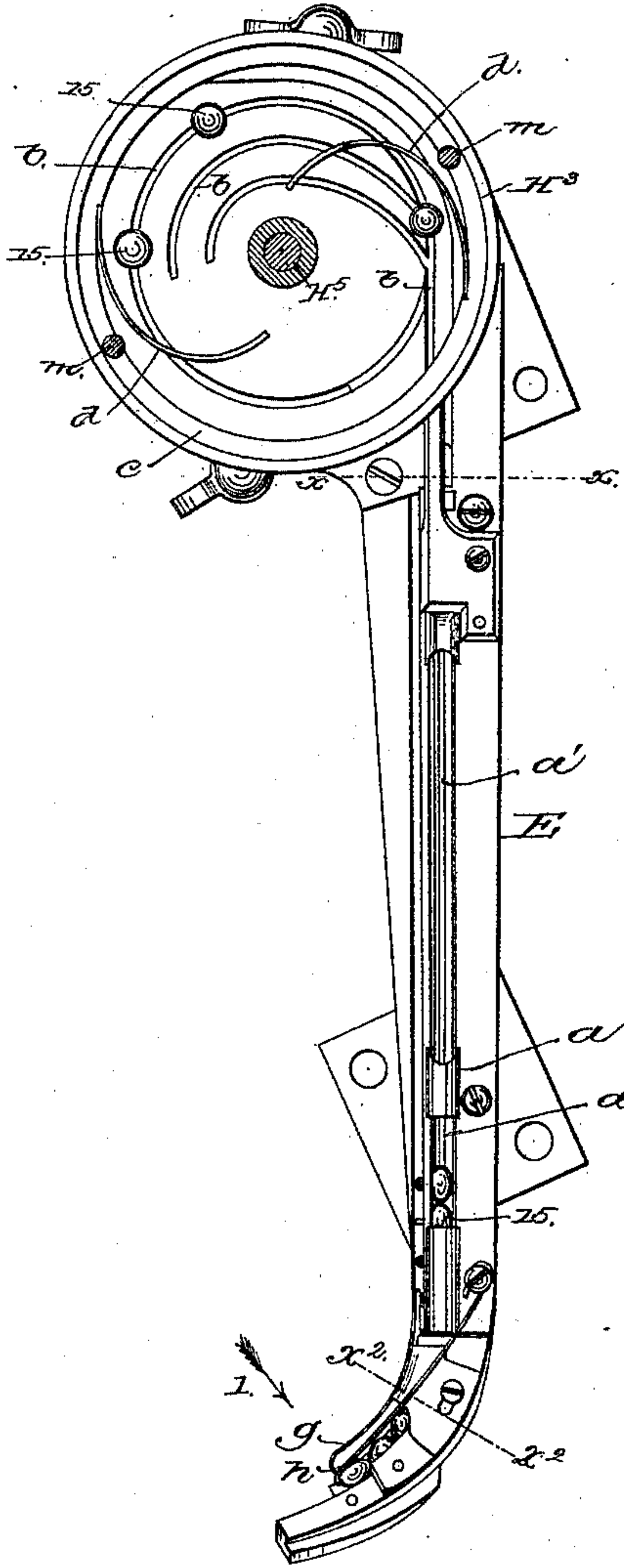


Fig. 2.

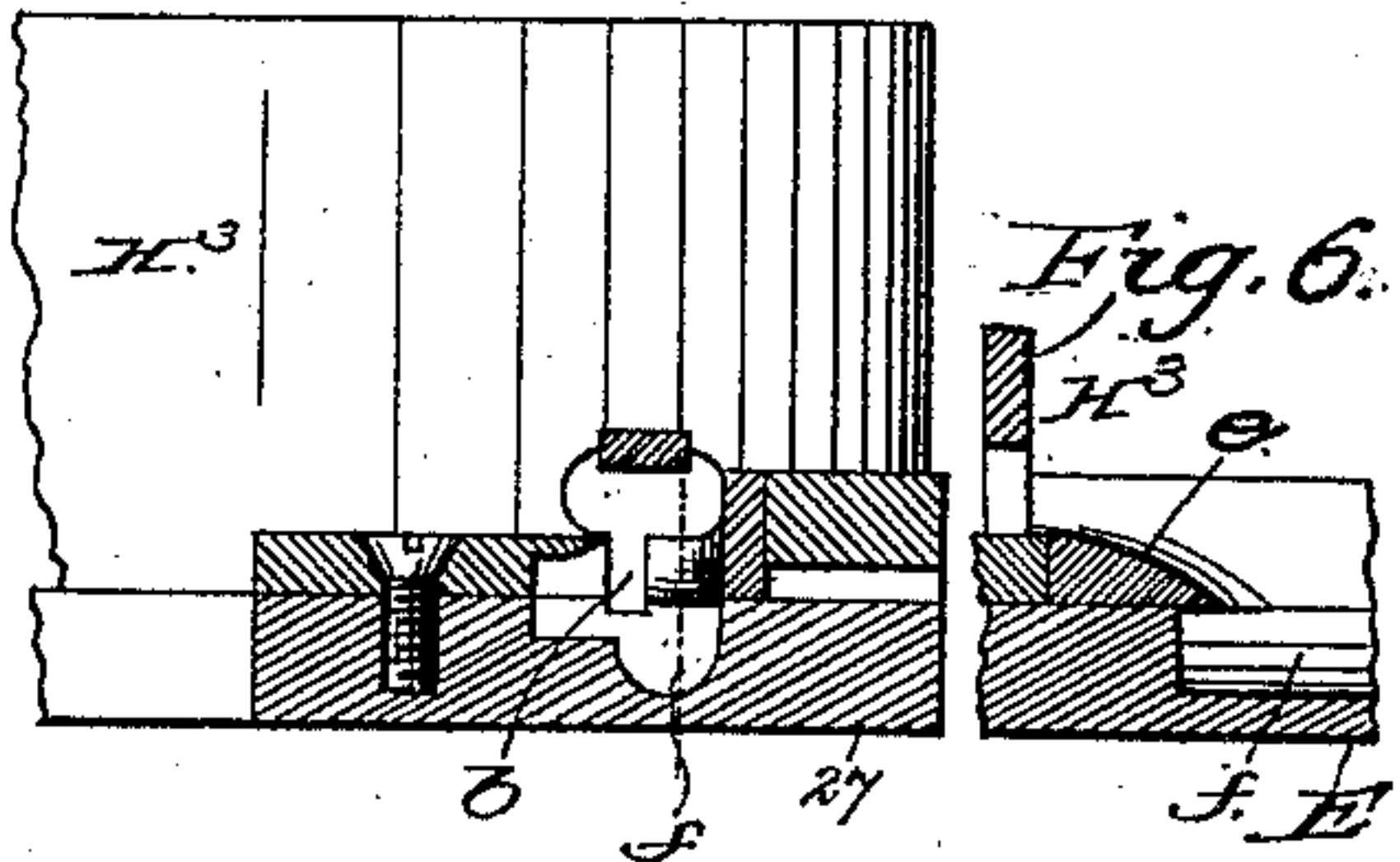


Fig. 6.

Fig. 5.

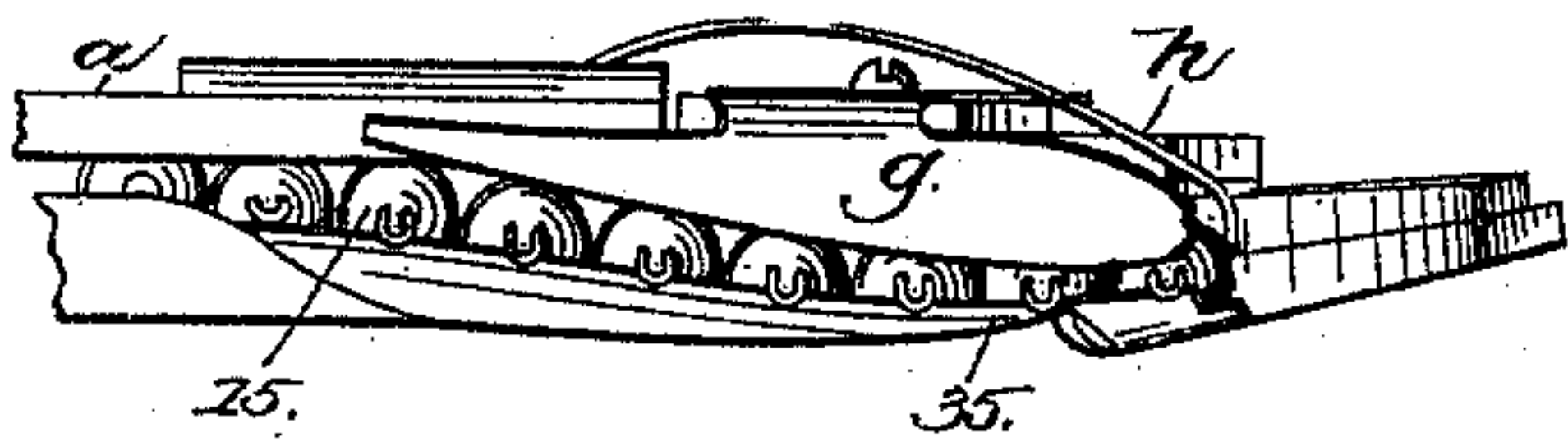


Fig. 4.

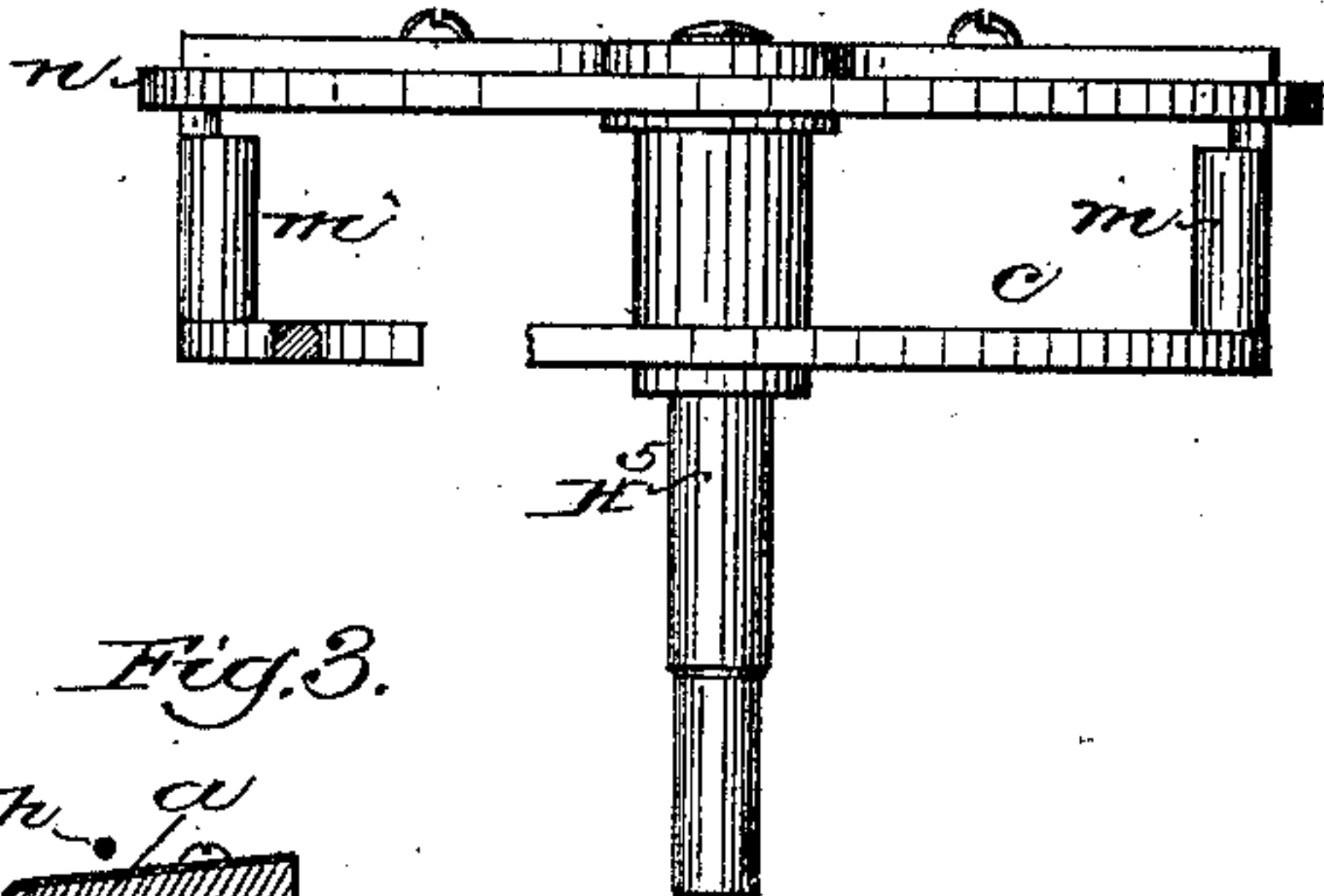


Fig. 3.

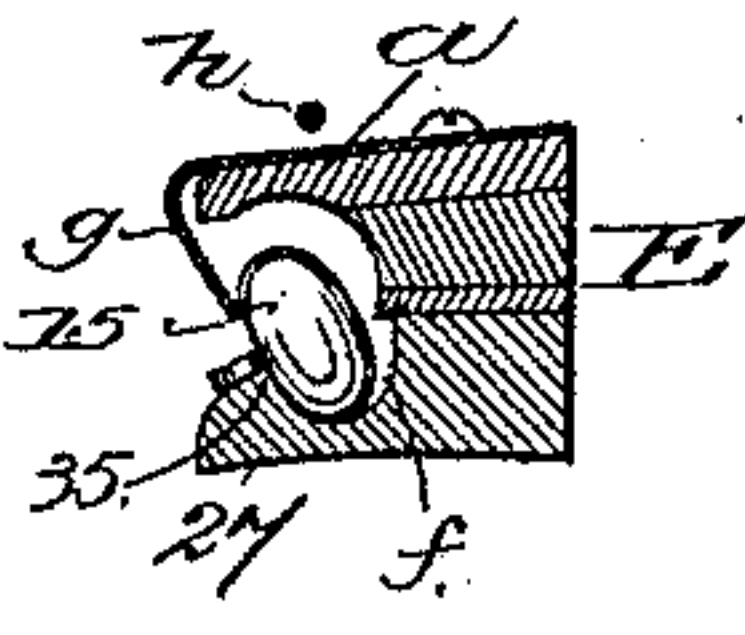
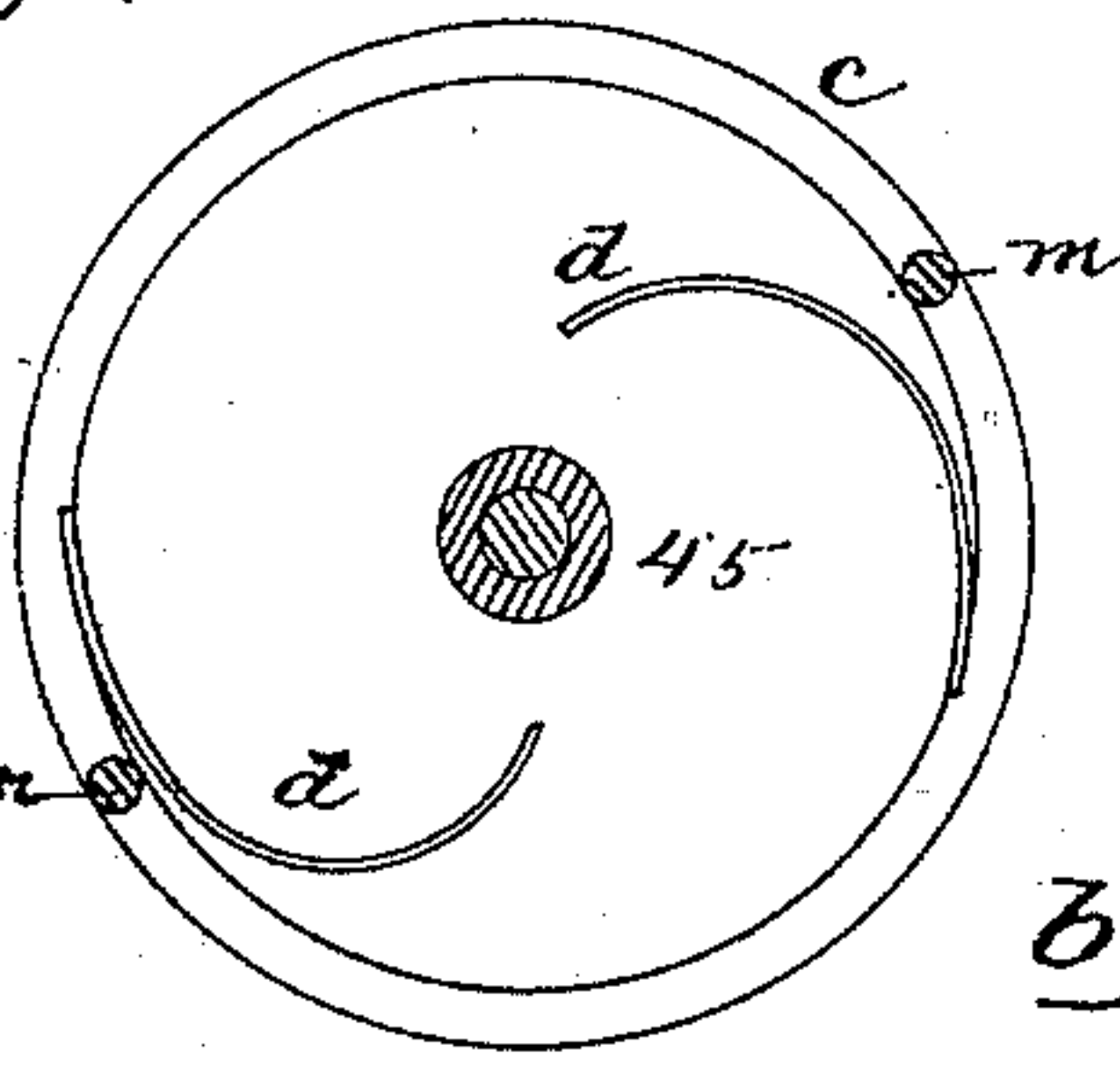


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

LORENZO D. HAWKINS, OF STONEHAM, AND ERASTUS WOODWARD, OF SOMERVILLE, MASSACHUSETTS, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE HEATON BUTTON FASTENER COMPANY, OF PROVIDENCE, RHODE ISLAND.

BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 424,417, dated March 25, 1890.

Application filed August 2, 1883. Serial No. 102,622. (No model.)

To all whom it may concern:

Be it known that we LORENZO D. HAWKINS, of Stoneham, county of Middlesex, State of Massachusetts, and ERASTUS WOODWARD, of Somerville, county of Middlesex, and State of Massachusetts, have invented an Improvement in Apparatus for Attaching Buttons to Boots and Shoes and other Articles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement upon that described in United States Patent No. 298,200, dated May 6, 1884, to which reference may be had.

One part of our invention relates to an improved construction of the hopper and conductor through which the buttons travel.

Another part of our invention relates to improved devices for presenting the buttons with their eyes in correct position to be attached to a shoe or other article.

The invention will be described first and then particularly pointed out in the claims.

In the accompanying drawings, illustrating our invention, Figure 1 is a top view representing a sufficient portion of a button receiver or hopper and conductor to enable our invention to be understood, the head of the agitator in the receiver being cut off to show the interior of the receiver, the said head when in place acting as a cover for the said receiver. Fig. 2 is a section taken on the dotted line $x x$ of Fig. 1. Fig. 3 is a section on the dotted line x^2 . Fig. 4 shows in elevation the agitator and its attached head removed from the receiver. Fig. 5 is an elevation of the delivery end of the conductor, looking at it in the direction of the arrow 1, Fig. 1. Fig. 6 is a sectional detail view to be referred to, and Fig. 7 is a plan view of the agitator detached from the cover-plate.

The button receiver or hopper H^3 , the conductor E , composed, essentially, of the grooved bottom plate 27 and grooved top plate a are substantially as in the said patent, with the exception that, as herein shown, the top plate of the said conductor is made open at its up-

per side, or cut out, as at a' , to enable the operator to see the buttons 15 in the conductor. The patent referred to shows a grooved race into which the buttons are fed by an agitator having brushes.

Prior to the invention herein described the bottom plate of the button-receiver has been provided with a groove located close to the inner wall of the receiver and extending about the same; but herein the bottom plate of the receiver has a curved groove b , located at a distance from the side wall of the receiver, into which groove the shanks of the buttons 15 are made to drop, and by the action of the agitators the said buttons are caused to travel along the said groove and are swept out of the said groove into the conductor.

The agitator, as herein shown, is composed, essentially, of a ring c , provided with a series of spring-arms d , connected at their outer ends to the said ring and extended inwardly across the bottom plate of the receiver and across the said groove, the said arms being preferably hook-shaped or curved, so as better to engage and move the buttons along in the said groove b , and, if desired, there may be more than one of the grooves in the bottom plate. As the buttons 15 arrive opposite the entrance of the conductor E their eyes hang downward, and the openings of the said eyes are all faced in the same direction, because the groove b , in which the shank-eyes of the buttons travel, is but little wider than the diameter of the wire from which the shanks are made. As the buttons arrive in a position near the upper end of the said conductor to pass from the directing-groove b of the receiver into the said conductor, the buttons pass under the ring c , so that they cannot be lifted from the groove b , but must enter the groove of the conductor; and as the buttons arrive in succession at the end of the groove b they come opposite a portion of the bottom plate, which is cut away at one side of the groove b , so that the button-head supported at but one side tips or turns half over to the right viewing, Fig. 2, the button traveling or sliding down an inclined block e and entering the groove f of the conductor, down along

which the buttons roll on their edge to the delivery end of the conductor, the latter near its delivery end having an elevated edge 35 to support the lower side of the shank of the button near the junction of the head of the button. The edge 35 referred to is common to the aforesaid patent. At the lower end of the conductor we have added a spring-presser *g*, which acts upon the lower sides of the shanks of the buttons and keeps the lower sides of the buttons on the edge 35 with the eyes of the buttons opened and exposed in the right position for the entrance or passage through the said eye of the tack or fastening to be used to secure the button to a boot or shoe. We have also added at the lower end of the conductor a stop *h*, (shown as a spring-finger composed of wire,) it acting upon the head of the endmost button in the conductor to arrest it in proper position at the lower end of the conductor to have its eye entered by the fastener to be used.

The agitator is connected to the cover-plate by the standards *m m*, and the cover-plate is attached to a shaft *H*⁵, common to said patent. The rotation of the shaft as therein described, or in other suitable manner, moves the agitator and causes its arm *d* to brush the buttons from the groove or grooves *b* into the conductor.

What we claim is—

1. In a machine for attaching buttons, a button-receiver having a groove, as *b*, in its bottom, and a button-conductor *E*, having groove *f*, into which the groove of the receiver merges, combined with the rotary agitator having inwardly-extended arms to sweep the buttons along the said groove into the conductor, substantially as described.

2. The button-receiver provided with a suitable number of grooves *b* to receive the shanks of the buttons and retain the latter directed downward, and an agitator to move the buttons into the said groove or grooves, combined with the conductor having a groove *f*, into which the groove of the receiver merges, and provided at its upper end nearest the receiver with an inclined surface *e*, whereby the buttons in being ejected from the groove *b* into the conductor are tipped half over, and thus the buttons necessarily enter edgewise into the groove of the conductor, substantially as described.

3. The button-conductor composed of the grooved parts 27 and *a*, combined with a yielding presser to act upon the shanks of the buttons and place the flat sides of their shanks against the edge of the part 27 of the conductor over which they move, substantially as described.

4. The button-conductor composed of the grooved parts 27 and *a*, combined with a yielding presser to act upon the shanks of the buttons and place the flat sides of their shanks against the edge of the part 27 of the conductor over which they move, and with a stop to arrest each button in proper position with relation to the anvil or clinching surface, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LORENZO D. HAWKINS.
ERASTUS WOODWARD.

Witnesses:

G. W. GREGORY,
W. H. SIGSTON.