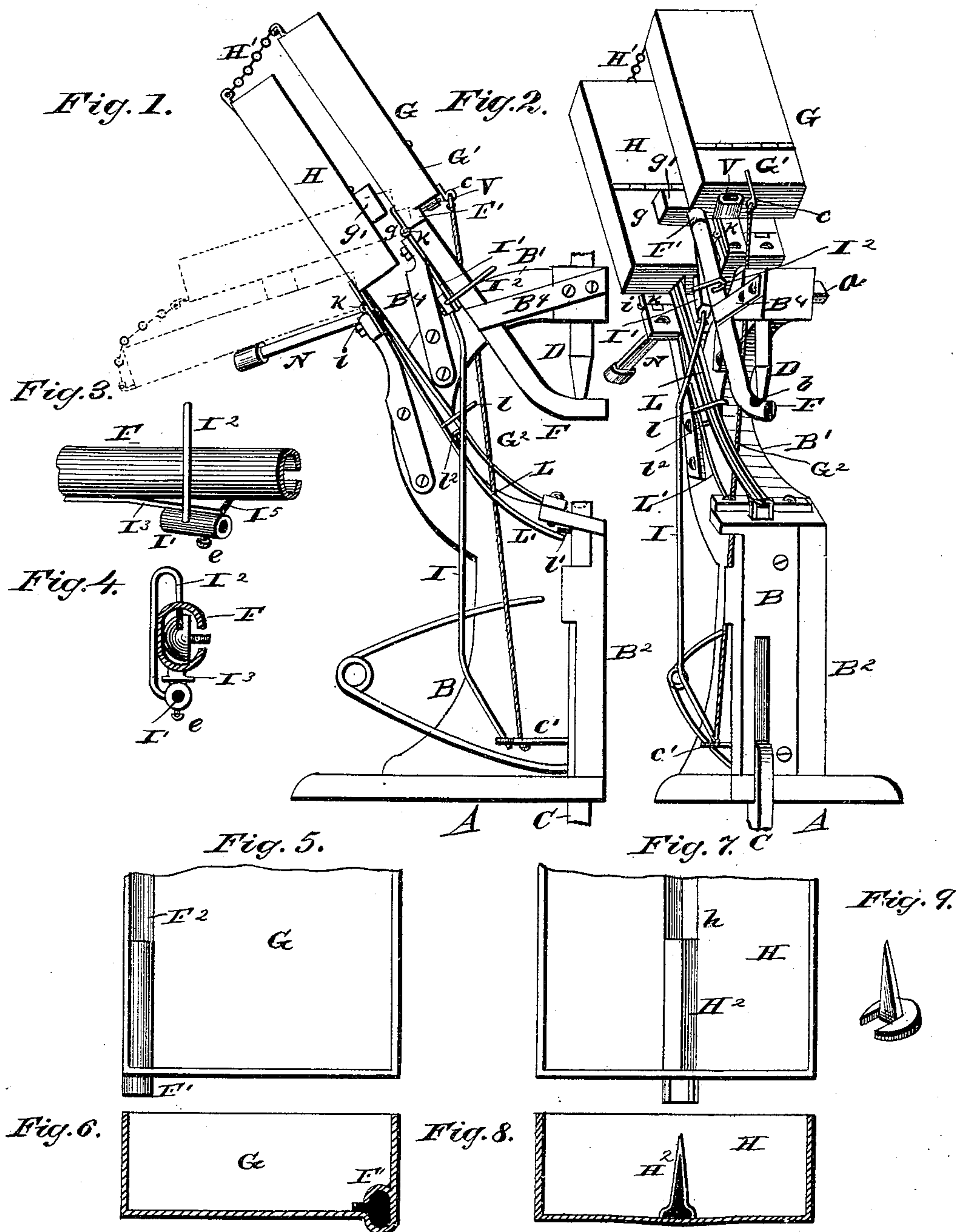


(No Model.)

J. LAMOREAUX.
BUTTON ATTACHING MACHINE.

No. 353,791.

Patented Dec. 7, 1886.



WITNESSES

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JEREMIAH LAMOREAUX, OF FREMONT, MICHIGAN.

BUTTON-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,791, dated December 7, 1886.

Application filed June 5, 1886. Serial No. 204,216. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH LAMOREAUX, a citizen of the United States, residing at Fremont, in the county of Newaygo, State of Michigan, have invented certain new and useful Improvements in Button-Attaching Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain novel improvements on button-fastening machines which are especially applicable to the improved machine for which Letters Patent were granted to Slater and Lamoreaux, March 30, 1886, and
15 numbered 339,024; and my object is to improve this machine and make it more valuable by the means which will be fully understood from the following description, when taken in connection with the annexed drawings, in which—

20 Figure 1 represents a left-hand side elevation of my improved button-attaching machine, indicating by the aid of dotted and full lines the boxes in their two positions. Fig. 2 is a perspective view of the machine complete.
25 Fig. 3 shows in perspective the spring-actuated tripping device applied to the main feed-tube. Fig. 4 is a sectional end view in detail of Fig. 3, showing a button in position to be caught by its eye with a clinching device. Figs. 5,
30 6, 7, and 8 are detail views of my improved automatic feeding device. Fig. 9 shows a fastener.

As fully explained in the Letters Patent above mentioned, the object is to automatically feed buttons to a given point, and simultaneously with this button-feed to also feed automatically clinching devices for the eyes of the buttons, and to force the barbs of the clinching devices through the button-eyes,
40 through the cloth or leather, and then clinch the fasteners by a single act of pressure on a treadle.

Referring by letter to the accompanying drawings, A designates the base of my improved machine, and B the upright portion thereof, which terminates in a goose-neck, B', and which is constructed with a vertical guide, B², all of which may or may not be formed entire.

50 C indicates a vertical plunger, which is al-

lowed vertical reciprocating movement, and which may have a slight depression in its upper end. Above this plunger, and guided by the enlargement on the overhanging end of the goose-neck B', is a tapered pointed anvil, 55 D, the lower end of which may also be made concave or otherwise recessed. This anvil is vertically adjustable in its socket by means of a set-screw, *a*. (Shown in Fig. 2.)

I will here state that the plunger C may be 60 depressed by a spring and quickly thrown up to give the clinching blow by means of a treadle, one end of which is attached to the lower end of the plunger.

F designates a feed-tube, which is curved at 65 its lower delivery end and slotted on one side, the slot terminating in a recess, *b*, adapted to allow the button to be withdrawn from it at proper times. The upper end of this button-delivery tube F is suitably connected to a hop- 70 per, G, and also to an extension, F', of a tube therein, the upper or receiving end of the latter communicating with a channel, F², in the bottom of the hopper, as shown in Figs. 5 and 6. This hopper G is provided with a hinged 75 door, G', connected by an arm, *c*, and a cord or chain, G², to an arm, *c'*, which is rigidly secured to the plunger C, as shown in Figs. 1 and 2. The said button-holding hopper is connected by a chain, H', to a hopper, H, adapted 80 to contain the button-fastener, which latter hopper is arranged in about the same incline plane with and parallel to the hopper G.

I designates a rod, curved as shown in Figs. 1 and 2, and connected at its lower end to the 85 arm *c'*. The upper end of this rod is passed through a tube, I', and adjustably connected thereto by a set-screw, *e*. The said tube is connected by a spring-arm, I², to the button-feed tube F, and the lower end of the spring- 90 arm is upturned and passes through a perforation in the tube F, and serves as a lower catch, I³, for the buttons, as shown in Fig. 3.

In Figs. 3 and 4 I show, in combination with the spring-actuated tube I', a curved finger, I², 95 the upper part of which is turned down into the tube F, and adapted to engage successively the buttons from the top of this tube.

Now it will be seen that at each depression of the plunger C one button is released and 100

another caught and held. The tube F, which I have been describing, is connected by the bracket-straps B⁴ B⁴ to the goose-neck B' of the main frame, as clearly shown in Fig. 1. 5 The lower perforation, b, of the tube F is arranged in alignment with the plunger and its anvil.

H indicates the hopper for the button-fasteners, which is provided with an angular tube, 10 H², at the terminus of an angular channel, h, (shown in Figs. 7 and 8;) also with a hinged cover, g, and with a top chambered portion, g'. The channel and tube h H² are especially designed for receiving and guiding the fasteners into a curved slotted and inclined guide-way, L, which leads down to and is secured to the top of the frame-head B². By this guide the fasteners are successively fed to the point of clinching by means of an angular arm, l, 15 and pin l', fixed to a curved spring, L', located below the guide L, and adapted to be actuated by a tapping pin or stud, l'', fixed to the plunger C. (Shown in Fig. 1 of the drawings.)

The hopper H, which, as above stated, is 25 connected to the hopper G by a chain, H', is connected at i to a bracket fixed to the frame portion B.

At k k the two hoppers G and H are hinged to their respective supports, so that they are 30 vibrated, and in the operation of the machine assume the positions indicated in full and dotted lines, Fig. 1, they being supported, when depressed, by the arm N.

At V, Figs. 1 and 2, I show a valve or cut-off 35 which prevents the escape of buttons from the hopper G when it is tilted back.

It will thus be seen by reference to the above description that I employ movable hoppers, each having one end attached to the 40 main support and the other end allowed to vibrate, which hoppers are provided with openings so adjusted that they are adapted for alignment with their respective feeding-guides, the said movements being synchronous with 45 the vertical movement of the plunger C. I thus render it unnecessary to be constantly feeding the machine with buttons and their fasteners by hand.

Having described my invention, I claim—

50 1. In an automatic button-attaching machine, the combination, with a button-guide, of a vibrating or shaking hopper and a feeding device, constructed as shown and described.

55 2. In an automatic button-fastening machine, the combination, with a fastener-guide, of a vibrating or shaking hopper and a feeding device, constructed and arranged as shown, described, and for the purpose specified.

60 3. In a button-fastening machine, the combination of two connected vibrating button

and button-fastener hoppers, respectively, the button and button-fastener guides, the plunger and anvil, and the devices for automatically and successively releasing and arresting 65 the buttons and fasteners, substantially as described.

4. The combination, in a button-attaching machine, of two flexibly-connected hoppers, 70 substantially as described, hinged to the main frame, means for simultaneously vibrating these hoppers, fixed guides leading therefrom to the points of delivery for the buttons and fasteners, trapping devices therefor, a plunger, and an anvil, substantially as described. 75

5. In a button-fastening machine, a movable hopper, grooved at F, and provided with a slotted tube, F', in combination with a stationary feed-tube, F, a button trapping and releasing device, a plunger, an anvil, and means 80 described for connecting the plunger to the said hopper, substantially as described.

6. In a button-fastening machine, the combination therewith of a vibrating hopper, H, a guide, H², a depression, h, a guide for the 85 fasteners, a spring, L', actuated by a tappet on the plunger C, a tripping and releasing device, and a clinching device, substantially as described.

7. In a button-fastening machine, the combination, with the vertically-reciprocating 90 plunger and an anvil coincident therewith, of vibrating button and fastener hoppers, guides therefor, and tripping and releasing devices applied to the guides, the whole arranged as 95 shown, described, and for the purpose specified.

8. In a button-attaching machine, the combination, with the two vibrating hoppers, of the 100 arm-rest N therefor, the stationary guides leading from the hoppers, and clinching devices, substantially as described.

9. In a button-attaching machine, the combination of the cut-off V with the hopper G, adapted to receive vibrating motion, and a 105 stationary guide-tube, as shown, described, and for the purpose specified.

10. The combination, with the button-guide and feed-tube, of the spring-actuated tube I', connected to the rod I, the releasing-lip I⁵, and 110 the arresting-catch I², substantially as described.

11. The combination, with the fastener-guide, of the spring-arm actuated by a tappet, l', on the plunger C, the catch l, and arresting- 115 pin l', substantially as described.

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

JEREMIAH LAMOREAUX.

Witnesses:

JOHN J. LAMOREAUX,
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