

(No Model.)

E. O. ELY.
BUTTON SETTING MACHINE.

No. 494,740.

Patented Apr. 4, 1893.

FIG. 2.

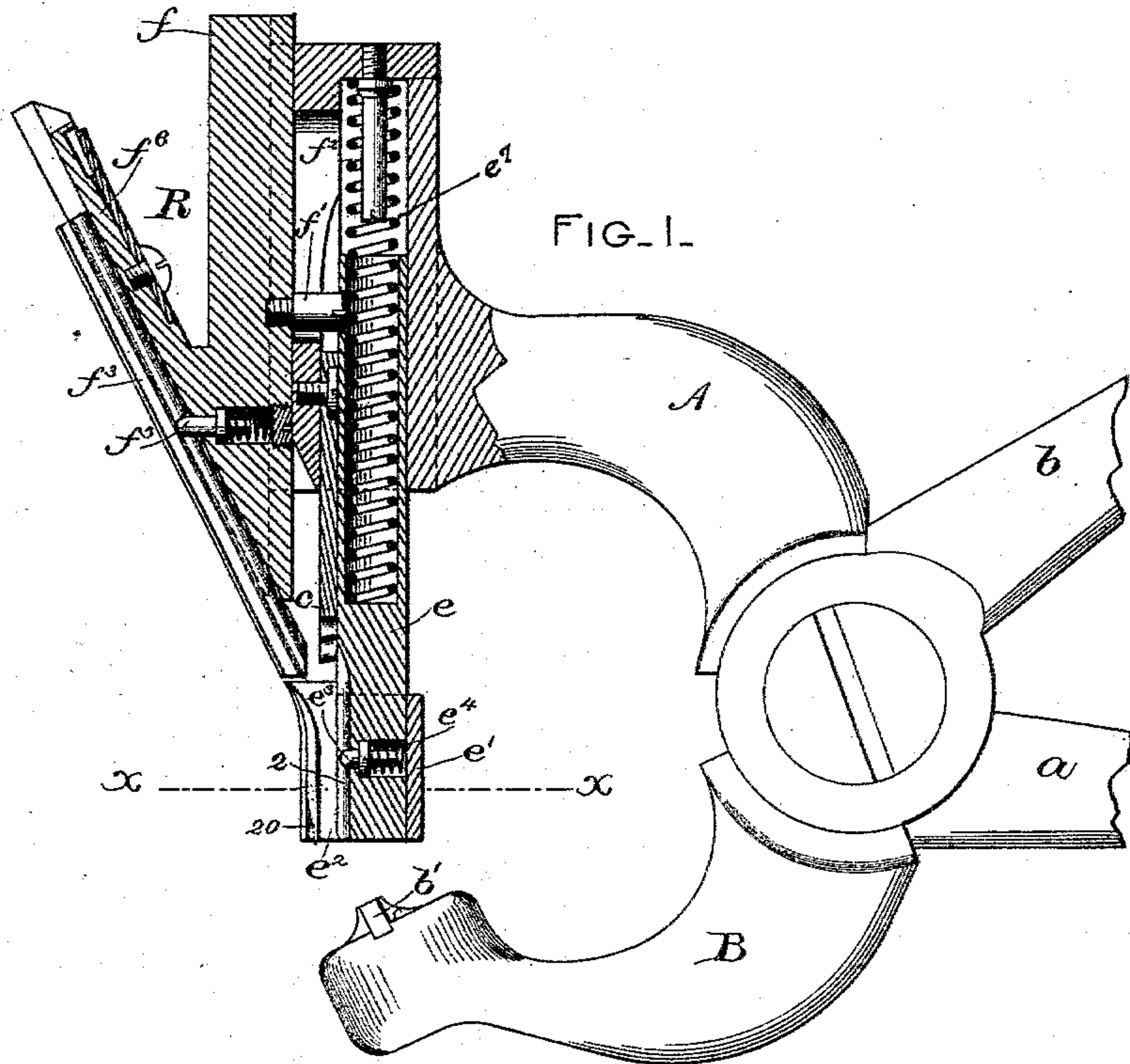
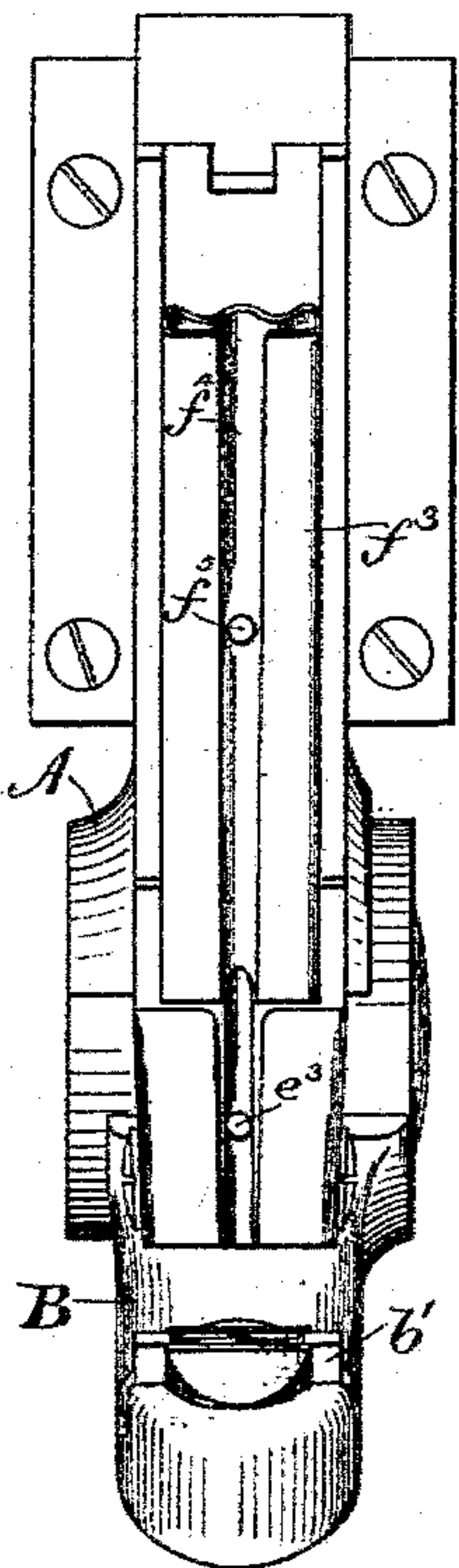


FIG. 3.

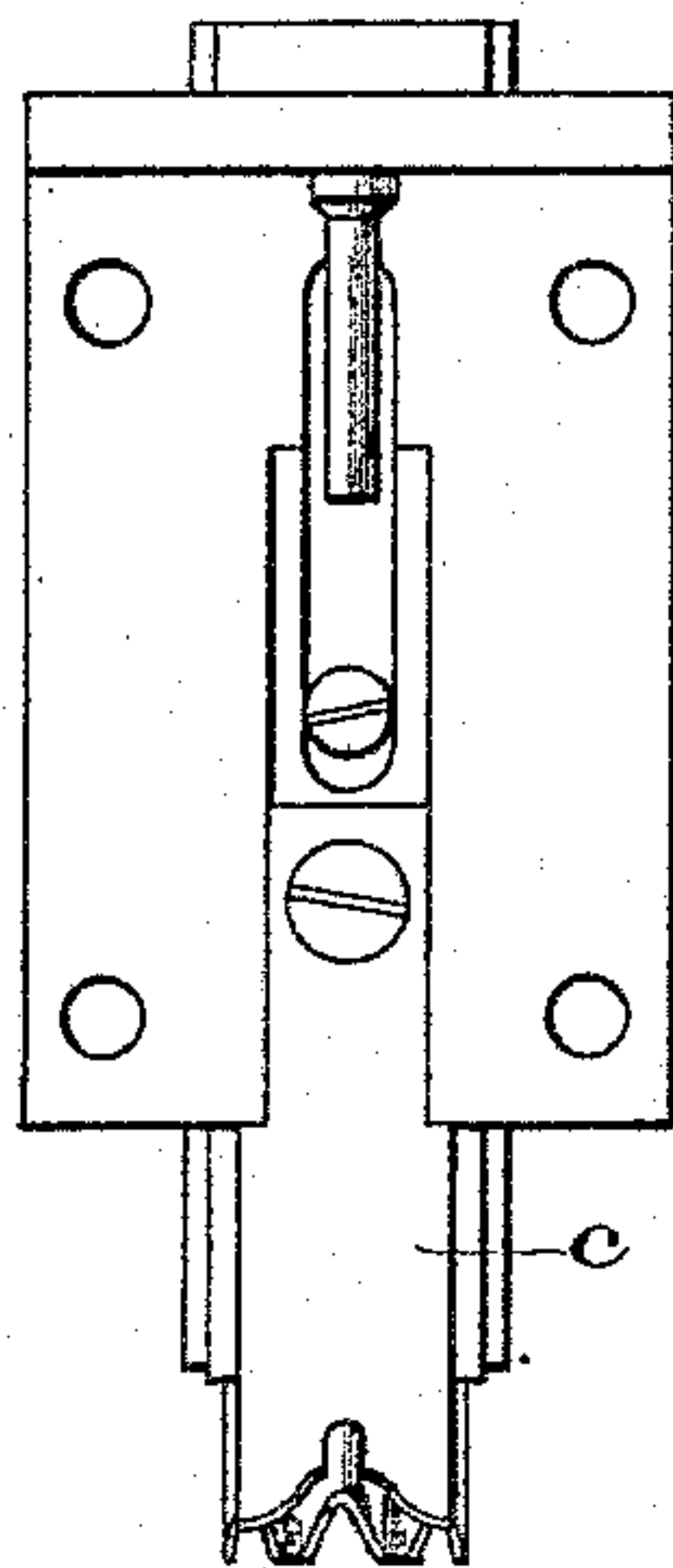
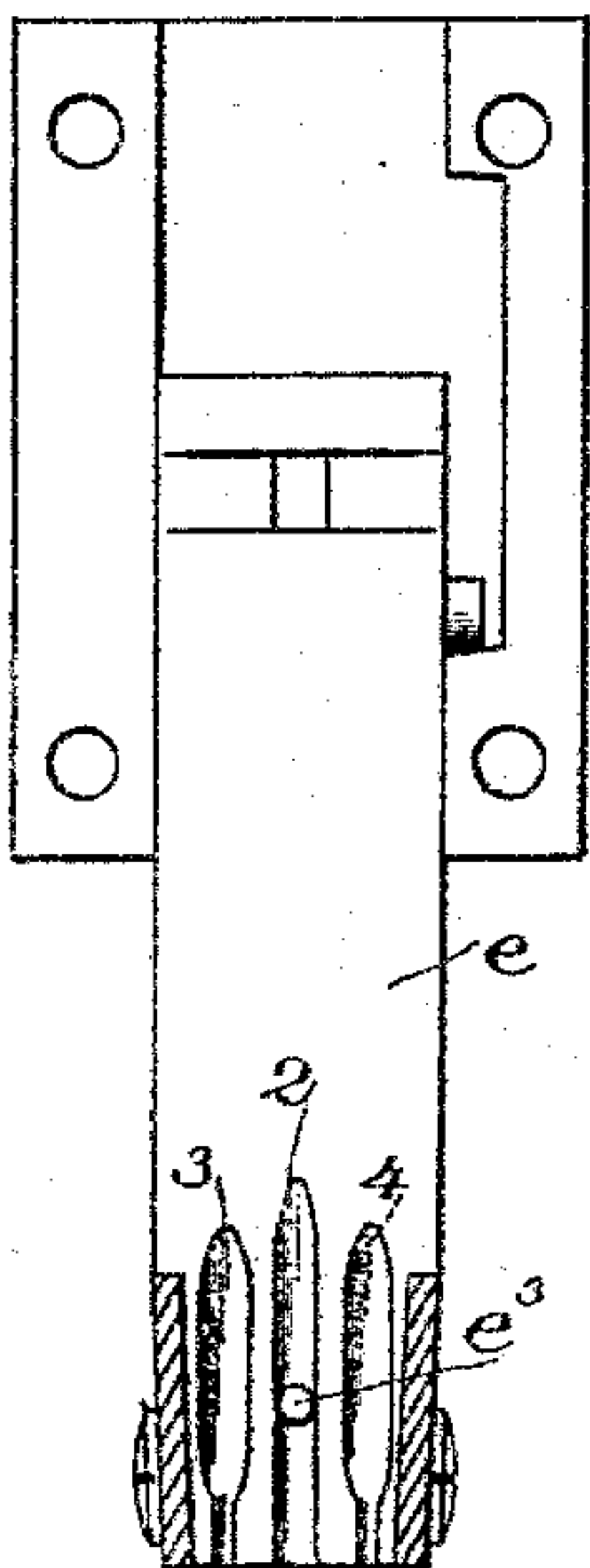
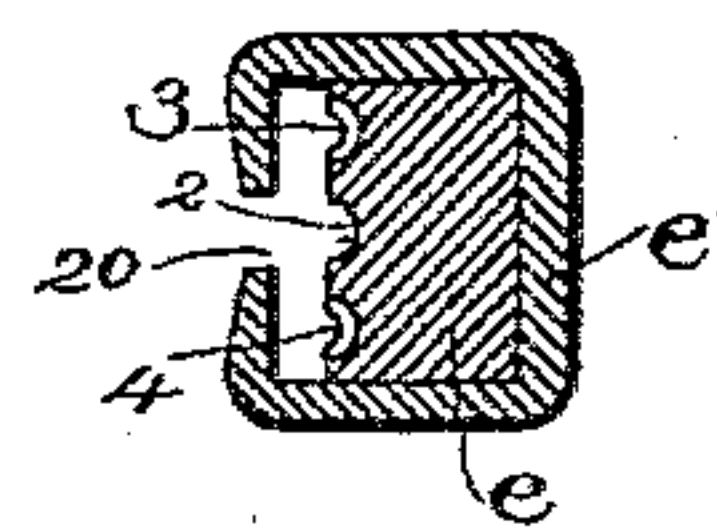


FIG. 4.

FIG. 5.



Witnesses
Charles A. Snow
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Inventor
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UNITED STATES PATENT OFFICE.

EDWARD O. ELY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE HEATON-PENINSULAR BUTTON FASTENER COMPANY, OF PROVIDENCE, RHODE ISLAND.

BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 494,740, dated April 4, 1893.

Application filed February 21, 1887. Serial No. 228,309. (No model.)

To all whom it may concern:

Be it known that I, EDWARD O. ELY, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Button-Setting Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention has for its object to construct a button setting machine or tool whereby several buttons and connected staples may pass one after another between the driver and anvil to be acted upon and set.

In accordance with this invention the staple receiving raceway terminates between the driver and anvil so that when the said driver and anvil are brought together the end-most fastener, in the raceway together with its attached button, is removed, and the points of the staple or fastener forced through any material placed between the driver and anvil, the staple being afterward clinched by the die carried by the anvil. In this instance of my invention the driver is made stationary and the anvil movable, and the raceway which contains the staples and connected buttons, and which terminates between the driver and anvil is yielding, preferably against the tension of a spring to thereby cause the driver to enter the raceway just above the termination thereof and to remove the endmost staple and its connected button therefrom. The raceway which contains the staples and their connected buttons, is provided longitudinally with a central groove or passage to receive the eye or shank of a button, and also with two parallel grooves one at each side of the said shank or eye receiving groove which receive the points of the fasteners. A spring pressed pin normally projects into the raceway some little distance beyond the termination thereof to check the progress of the staples until positively moved, and another spring pressed pin normally projects into the raceway near the termination thereof to retain the endmost staple in position below the driver until removed. The staples and connected buttons may be moved downward by the spring pressed pin one at a time as needed

by hand, or if desired suitable feeding devices may be provided.

Figure 1—shows in side elevation and partial section a button machine embodying this invention; Fig. 2—an end view of Fig. 1; Fig. 3 and 4 details showing the driver and its adjacent parts; Fig. 5—a cross section of the termination of the raceway taken on the dotted line X, X, Fig. 1.

The machine is herein shown as a hand tool composed of two jaws A and B, and two handles *a*, *b*, to operate them. The jaw B carries an anvil *b'* provided with a suitable clinching surface. The jaw A has rigidly secured to it the driver *c* composed of a flat bar of metal having its lower end forked as shown in Fig. 4, to astride the crown of a staple. The raceway *R* is carried by the jaw A and is arranged at an angle with relation to the driver to terminate at a point between the driver and anvil. The raceway consists of a bar *e* moving in the jaw A against the tension of a spring *e'* placed within it. The lower end of the said bar lies adjacent to the driver and is provided with a central longitudinal groove 2, to receive the eye or shank of a button, and also with two parallel grooves 3, 4, one at each side of the groove 2, to receive the points of the fasteners, which points are preferably broadened in order to obtain a better hold upon the under side of the stock. The band *e'* of metal surrounds the lower end of the bar *e*, said band being slotted as at 20 and of sufficient size to leave a space in front of the bar as at *e*² sufficient for the staple to pass. Near the termination of the bar *e* a pin *e*³ projects into the raceway to check the downward progress of the staple, said pin being normally pressed forward by a spring *e*⁴. A slide bar *f* is dovetailed into the face of the jaw A said bar being rigidly joined with the bar *e* by a pin *f'* which passes through a slot *f*² cut off the face of the jaw. The slide bar *f* carries a staple receiving passage or tube *f*³ having a central longitudinal slot as *f*⁴ which serves as a passage for the eyes of the buttons which are combined with the staples moving in the tube. The staple receiving tube *f*³ is also provided with a central groove

for the eye of the button and with two parallel grooves for the points of the fasteners, substantially corresponding with the grooves 2 and 3, 4, respectively of the bar, *e*, in arrangement. The staple receiving tube *f*³ terminates at the band or loop *e'* which band or loop it will be seen is provided with an outwardly turned lip to facilitate the passage of staples from the tube to a point below the driver. A spring pressed pin *f*⁵ like unto the pin *e*³ is seated in the bar and projects slightly into the tube *f*³ to retain the staples and their connected buttons until moved downward by hand or by suitable feeding devices. The open end of the tube *f*³ and that arm or projection *f*⁶ of the slide bar *f* is made to receive a long tube arranged to contain quite a large number of staples and connected buttons.

It will be seen that the raceway while made of several parts is rigidly jointed together to form a single movable part provided with a groove to receive the eye of the button and with grooves to receive the points of the fasteners.

I claim—

1. In a button setting machine, a driver, and a movable anvil, combined with a raceway comprising an upper and a lower portion rigidly connected and jointly movable and having an opening or slot at one side for the passage of the eye of a button a central groove for said eye and two parallel grooves for the points of the staple upon which the button is strung, the upper portion of said raceway extending above and out of the path of the acting face of the driver, and the lower portion terminating between the driver and anvil whereby during the upward movement of the raceway the said lower portion of the raceway will be entered by the driver to engage the staple and drive and clinch the same, substantially as described.

2. In a button setting machine, a driver, and a movable anvil, combined with a raceway comprising an upper and a lower portion rigidly connected and jointly movable and hav-

ing an opening or slot at one side for the passage of the eye of a button a central groove for said eye and two parallel grooves for the points of the staple upon which the button is strung, the upper portion of said raceway extending above and out of the path of the acting face of the driver, and the lower portion terminating between the driver and anvil, and a spring interposed between the raceway and a fixed portion of the machine to force the raceway to its lowermost position and to yield to permit the raceway to be moved to its uppermost position whereby during the upward movement of the raceway the said lower portion of the raceway will be entered by the driver to engage the staple and drive and clinch the same, substantially as described.

3. In a button setting machine, a driver, and a movable anvil, combined with a raceway comprising an upper and a lower portion rigidly connected and jointly movable and having an opening or slot at one side for the passage of the eye of a button a central groove for said eye and two parallel grooves for the points of the staple upon which the button is strung, the upper portion of said raceway extending above and out of the path of the acting face of the driver, and the lower portion terminating between the driver and anvil and retainers arranged in the raceway for controlling the feeding and delivery of the staples with their buttons, whereby in the upward movement of the raceway the driver will be entered into the said lower portion of the raceway to drive and clinch the staple, with its button, delivered into that portion of said raceway, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 19th day of February, A. D. 1887.

EDWARD O. ELY.

Witnesses:

EVERETT W. BURDETT,
CHARLES A. SNOW.