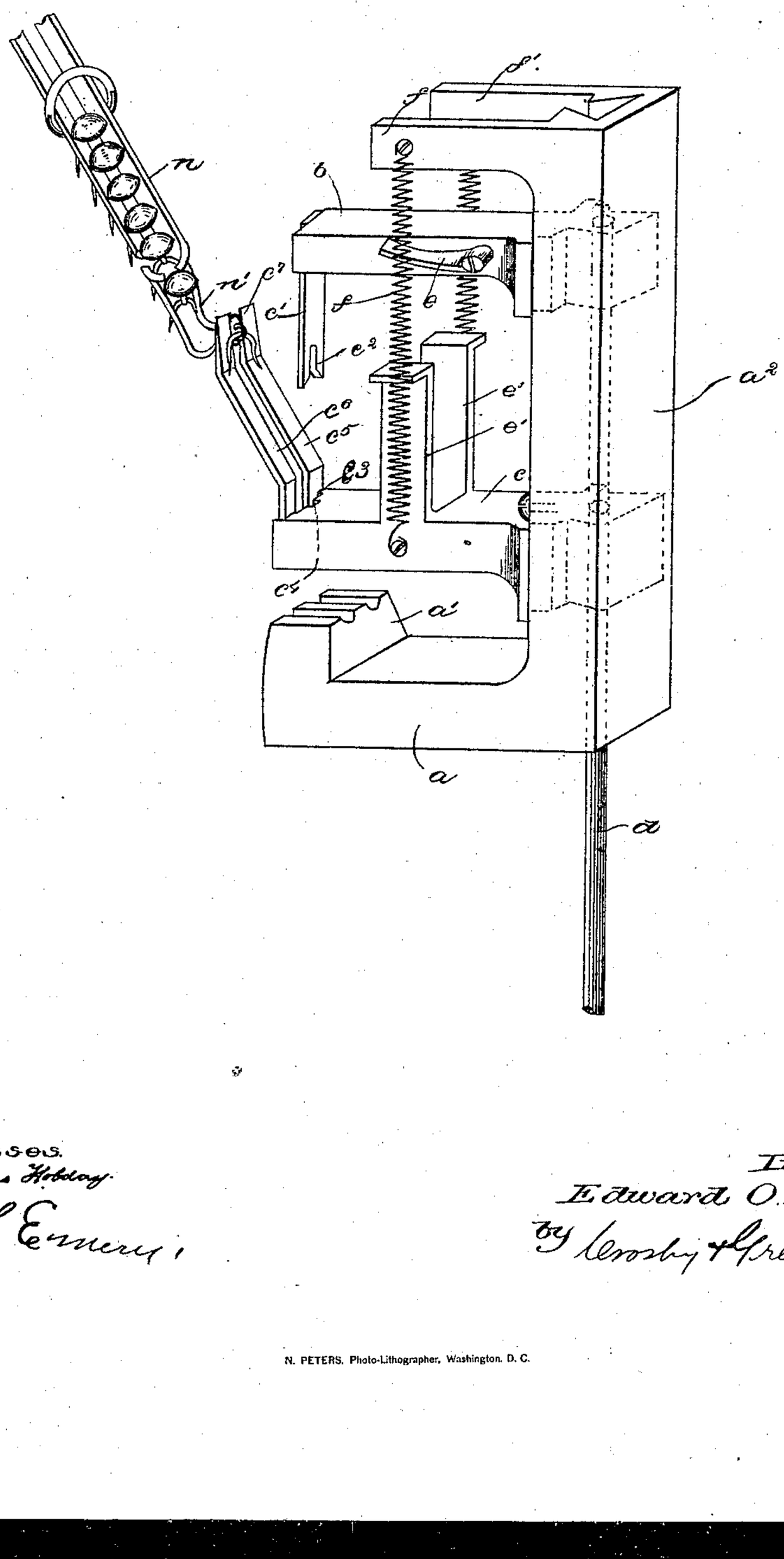
(No Model.)

E. O. ELY.

BUTTON FASTENING MACHINE.

No. 368,659. Patented Aug. 23, 1887.



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UNITED STATES PATENT OFFICE.

EDWARD O. ELY, OF BOSTON, MASSACHUSETTS.

BUTTON-FASTENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,659, dated August 23, 1887.

Application filed June 15, 1886. Serial No. 205,222. (No model.)

To all whom it may concern:

Be it known that I, EDWARD O. ELY, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Button-Fastening Machines, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention has for its object to construct a button-setting machine whereby staples having buttons loosely connected therewith are permitted to follow in a slotted chute or guide into position beneath a descending driver that the latter may strike the crown of the staple and force its legs through any suitable material placed upon an anvil.

In accordance with this invention the chute or guide is movable, that it may be brought to bear upon the material placed upon the anvil, said chute or guide being suitably slotted to permit a staple having a button loosely attached thereto to follow downward freely, the eye of the button following in one of the slots, so that the staple lies upon one side and the button upon the other side of the chute or guide. The slotted chute or guide is inclined rearwardly at its lower end, in order that the staples passing downward may be conveyed into suitable position beneath and so as to be struck by a descending driver. The slotted chute or guide, and also the driver, is so arranged as to be moved by a single rod operated by a treadle or equivalent device.

In my present invention, by supplying a supplemental stationary raceway suitably inclined to allow the staples and buttons to follow downward freely, I have obviated the employment of mechanically-operated feeding devices to control the passage of the staples and buttons intermittingly, the said raceway being so located that as the chute or guide rises it removes the endmost staple and button from the raceway in order that it may follow down the said inclined chute or guide into correct position beneath the descending driver.

The drawing shows in perspective a button-setting machine embodying this invention.

The main frame-work consists of a suitable base, *a*, or horn having an anvil-block, *a'*, of any suitable construction, and an upright or post, a^2. The upright or post a^2 is provided with a dovetailed groove to receive the dovetailed projections (see dotted lines) of two arms, *b c*, one of the said arms, as *b*, carrying a driver, which consists of a blade, *c'*, having a forked end, c^2, each fork of which is beveled toward the other to act upon the crown of a staple. The other arm, *c*, is cut away at its forward end, as at c^3, to permit the free passage of a staple, and also grooved, as at c^4, to permit the entrance of the eye of a button, an inclined guide, c^5, slotted longitudinally, as at c^6, being secured to the forward end of the arm *c*, the said inclined guide receiving the staples upon one side and the buttons upon the other, the eye of the button moving in the slot c^6.

The moving arm *c*, slotted and grooved as described, and the inclined slotted guide c^5, taken collectively, serve as a chute or guide to receive the staples and loosely-connected buttons, and being inclined, as described, permits them to follow down the chute into suitable position to be struck by the descending driver *c'*.

The rod *d*, moved by any suitable treadle, is attached to the rear end of the arm *b*, so that the latter may be moved up and down within the grooved post or standard a^2, two stiff flat springs, *e*, attached to each side of the arm *b*, being arranged to strike upon the tops of the two posts *e'* attached to or forming part of the arm *c*, to thereby depress the said arm *c* when the arm *b* descends, the said arm *c* moving freely in the grooved post or standard a^2 and following upon the rod *d* as a guide, and being normally held in elevated position by two spiral springs, *f*, connected to two overhanging arms, *f'*, attached to or forming part of the main frame-work. It will thus be seen that as the rod *d* is depressed the arm *b*, carrying the driver, descends, the flat springs *e* striking the posts *e'*, causing the chute or guide to descend, and, while the latter bears upon the material placed upon the anvil, the driver *c'*, owing to the yielding action of the springs *e*, enters the slot e^3 and drives the staple.

To obviate the necessity of the employment of mechanically-operated feeding devices I have supplied a supplemental inclined raceway, *n*, which receives the buttons and their connected staples, a suitably-bent loop, *n'*, forming the terminus of the supplemental raceway into which the buttons and pendent

staples enter, the said loop n' being bent, as shown, to cause the buttons to be upturned slightly to bring the staples into prominence.

The upper end, c^7, of the moving slotted guide c^5, preferably beveled, is so located with relation to the supplemental raceway that as the slotted guide rises the endmost staple and attached button is taken from the said raceway, the staple lying upon one side of the guide and the button upon the other, the eye of the button entering the slot c^6. Thus it will be seen that one staple and attached button is taken at each time the slotted chute or guide rises, after which it follows down the said inclined staple-guide into position beneath the descending driver, as described.

Although I have herein shown the supplemental raceway for the purpose stated, it is obvious that the same may be omitted and suitable devices substituted therefor.

I claim—

1. In a button-setting machine, a movable or yielding carrier or chute slotted to receive a staple having a button attached thereto, and bent rearwardly or inclined to convey the staple into position below and to be acted upon by the driver, combined with a driver and an anvil movable with relation one to the other and co-operating to force a staple from the carrier and cause it to penetrate the material held between said carrier and anvil, substantially as described.

2. In a button-setting machine, a rising and falling carrier or chute slotted to receive a staple having a button attached thereto, and bent rearwardly or inclined to convey the staple into position below and to be struck by the driver, a raceway constructed and arranged to contain a series of staples and attached buttons, said raceway being located with relation to the carrier or chute so that the endmost staple and button is removed from the raceway by the chute each time the latter rises, an anvil with which the said carrier or chute co-operates to hold the material in position to receive the staple, combined with a movable driver to enter the carrier or chute and force the staple therefrom and to drive the staple when the said carrier or chute is depressed holding the material in place, substantially as described.

3. In a button-setting machine, a stationary anvil, a movable chute or carrier the under side of which bears upon the anvil when the said chute is depressed, said carrier or chute being slotted to receive a staple and button attached to it, and the uprights e', carried by the carrier, combined with the movable driver and the springs e, carried by it, substantially as described.

4. In a button-setting machine, a carrier or chute slotted to receive one or more staples having buttons attached thereto, and having an inward bend or offset at its lower end to receive a staple and attached button, combined with a driver to free the lowermost staple from said inward bend or offset, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD O. ELY.

Witnesses:
BERN. J. NOYES,
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