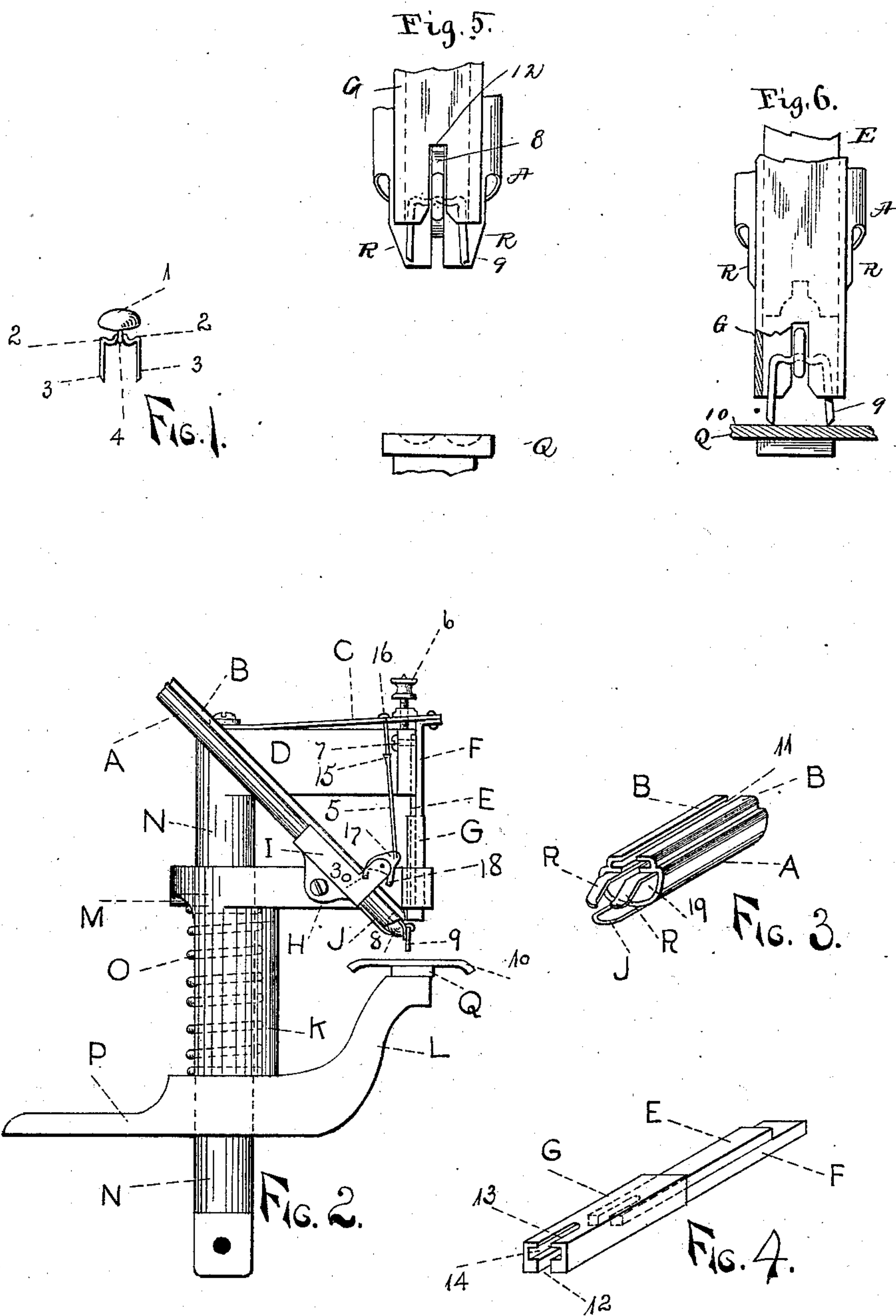


(No Model.)

L. V. MOULTON.
MACHINE FOR ATTACHING BUTTONS.

No. 312,749.

Patented Feb. 24, 1885.



WITNESSES:
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LUTHER V. MOULTON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE
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MACHINE FOR ATTACHING BUTTONS.

SPECIFICATION forming part of Letters Patent No. 312,749, dated February 24, 1885.

Application filed July 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUTHER V. MOULTON, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Improvement in Machines for Attaching Buttons by Means of Wire Staples to Leather or other Fabric, of which the following is a specification, reference being had to the accompanying drawings.

My invention has for its object the production of a machine whereby buttons and their loosely-connected staples may be taken automatically from a chute, and the staples be driven into the material to which the buttons are to be attached, the prongs of the staples being clinched at or turned into the under side of the material.

In my improved machine the staples, connected loosely with the eyes of the buttons, are guided in a separate raceway, below which latter the buttons are made to travel, and the said staples are taken from the raceway in which they move by a staple carrier or guide, the said staples being presented and held by the said carrier or guide in upright position above the material, while the staple driver or former working within the said guide descends upon the crowns of and drives the staples from the said carrier or guide into the material, the carrier or guide having a slot for the passage of the eye of the button connected with the staple which is being driven. The legs of the staples are clinched inward and turned up into the under side of the material by an anvil having concavities, one for each point or leg of the staple.

Figure 1, in perspective, shows a button and staple, such as it is proposed to use in my machine. Fig. 2 is a side elevation of a machine embodying this invention. Fig. 3 is a detail showing the lower end of the combined staple-chute and button-guide. Fig. 4 is a perspective view of the staple carrier or guide, and the staple driver or former within it. Fig. 5 is a detail front view of parts of the machine shown in Fig. 2, the staple-carrier being depressed sufficiently to engage the head of the staple preparatory to removing it from the staple-chute with the button attached. Fig.

6 is a similar detail with the staple carrier or guide depressed in contact with the material, the staple-driver just commencing to drive the staple into the material, the guide being shown as broken out at its front side.

The parts shown in Figs. 5 and 6 are enlarged.

The frame-work or base L, which sustains the clinching-die Q, of usual construction, has at one side a projection or flange, P, which in practice will be provided with suitable holes for the reception of screws by which to attach the said frame to a table or other support, and rising from the said base is a cylindrical portion or sleeve, K, from the upper end of which projects horizontally an arm, H. The plunger N, made as a rod, provided at its upper end with an arm, D, and extended through the sleeve K and frame-work L, and through a spiral spring, O, held between the base L and arm H, is normally kept elevated, as in Fig. 2, by the pin M of the plunger resting on the top of the said spring. The lower end of the plunger is provided, as herein shown, with an opening with which to connect a rod attached to a suitable stirrup or lever, (not shown,) by which to pull down quickly, by foot or other suitable power, the said plunger and its attached parts. Each button-eye having been provided with a staple, the latter is entered, prong first, in the staple-chute B, the button entering the guideway A below the said chute, the eye of the button hanging from the staple and traveling in the slot 11, made in the bottom of the staple-chute. The staple-chute and button chamber or guide below it are removably supported in a bracket, I, attached to the arm H of the frame-work, the said chute being made removable to enable it to be refilled. At its lower end the bottom of the staple-chute is prolonged to form fingers R, which are inclined downward from the face of the chute, on which the staples rest, such downward inclination of the fingers R enabling the prongs or legs of the staple or fastener therein to gradually assume a nearly vertical position at the lower end of the chute. The button is acted upon at its head by a finger, J, made, as shown, of wire, the fingers R and J yielding to the passage of the button

when the staple is taken from the chute. The eyes of the buttons, with staples therein, both projected above that part or face of the staple-race on which the staples rest and move, are acted upon by a let-off device, 17, made as a forked plate, which is so pivoted as to be turned in one and then in the opposite direction to let the buttons and connected staples pass one after another and drop into position to enable the staple to be detached from the chute, as will be described. This let-off is moved in one and then in the other direction by means of a rod, 5, extended through a hole in the spring C, attached to and rising and falling with the arm D, the said rod having a collar, 15, below the said spring and a head above it, so as to be moved positively in both directions. The front end of the arm H of the plunger is provided with a vertical passage, in which is placed the staple carrier or guide G, the shank or upper end, F, of which is riveted or attached to the end of the spring C. The guide G at its lower end is shaped as a long box with a central longitudinal opening for the reception of the staple driver or former E, the said box at its lower end being slotted at its rear side, as at 13, and also preferably so at its front side, as at 12. The open lower end of the staple carrier or guide is shaped to descend upon and embrace the head of the staple while the latter is in contact with and is resting upon the fingers R R, the legs of the staples being then in nearly vertical position. The staple-driver E, forked at its lower end to conform to the shape of the crown of the staple, is attached by screw 22 to the front end of the arm D of the plunger. As the staple passes out from the staple-chute and assumes substantially a vertical position on the fingers R the head of the staple takes a position a very little below the open lower end of the carrier or guide G. The screw 6, inserted through and engaging a threaded portion of the spring C, and resting at its end on the arm D, enables the lower end of the guide G to be adjusted vertically to occupy a position more or less below the end of the driver, so that the guide when it descends is enabled to embrace the staple, detach it from the chute, and hold it in place vertically above the material 10 before the driver in its descent strikes the crown of the staple. The carrier or guide G having taken the staple, with its attached button, from the race, the carrier in its descent strikes the surface of the material 10 on the anvil, and being arrested by the said material the spring C yields, and while the arm D continues to descend the lower end of the staple driver E strikes the crown of the staple and drives the latter from the guide into and through the material, the points of the staple entering the usual cavities in the die, and being turned inward and upward into the under side of the material, leaving the button attached to the

crown of the staple above the material. While the staple is embraced by the guide G the eye of the button is held in the vertical slot 13 at the rear side of the guide.

I am aware that it is not new to feed buttons and fasteners, each detached and in separate raceways, into position to have the fasteners driven into material to secure the buttons in position; but so, also, I am aware, in the arts, that it is common to connect a pronged fastener to a button-eye and support the under side of the button on a jaw, the fastener being suspended below the said jaw.

I am not aware that a connected staple and button has ever been fed into and along a chute with the staple uppermost, the staple being delivered into a guide, which automatically places it in a vertical position to be driven, while the button is held at the outside of the said guide, out of the line of the driver, by the staple in the guide, the staple being driven into the stock by a blow on its crown, rather than the stock forced upon the staple by an anvil or die carried by a movable jaw.

I claim—

1. In a machine for attaching buttons, the following instrumentalities, viz: a chute to receive and guide the staples, with buttons loosely connected therewith, the staple carrier or guide G to take the staple and connected button from the end of the chute, a staple-driver to act upon the crown of and drive the staple from the guide, which holds it with its prongs directed toward the material, and an anvil or die to turn the legs or points of the staple, substantially as described.

2. In a machine for attaching buttons, the staple-guiding chute slotted at its lower side for the passage of the shanks of the buttons supported by the staples, and provided with projecting fingers R, turned downwardly, as shown, combined with the staple carrier or guide G, slotted at its rear side at 13, and adapted to descend upon and embrace the crown of the staple, and hold it with its prongs at right angles to the material, substantially as described.

3. In a machine for attaching buttons, the chute to receive the staple with its attached button, the spring-pressed staple carrier or guide, and the staple driver, combined with the movable arm D and with the anvil, to operate substantially as described.

4. The button-attaching machine, the plunger-bar and spring to support it, the anvil, the staple-chute, and let-off device to control the delivery of the connected staples and buttons, combined with the spring-held staple carrier or guide, and the staple driver or former, to operate all substantially as described.

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Witnesses:

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