2 Sheets—Sheet 1.

F. C. CANNON.

MACHINE FOR MAKING BUTTON BACKS.

No. 185,492. Patented Dec. 19, 1876.

Fig 1

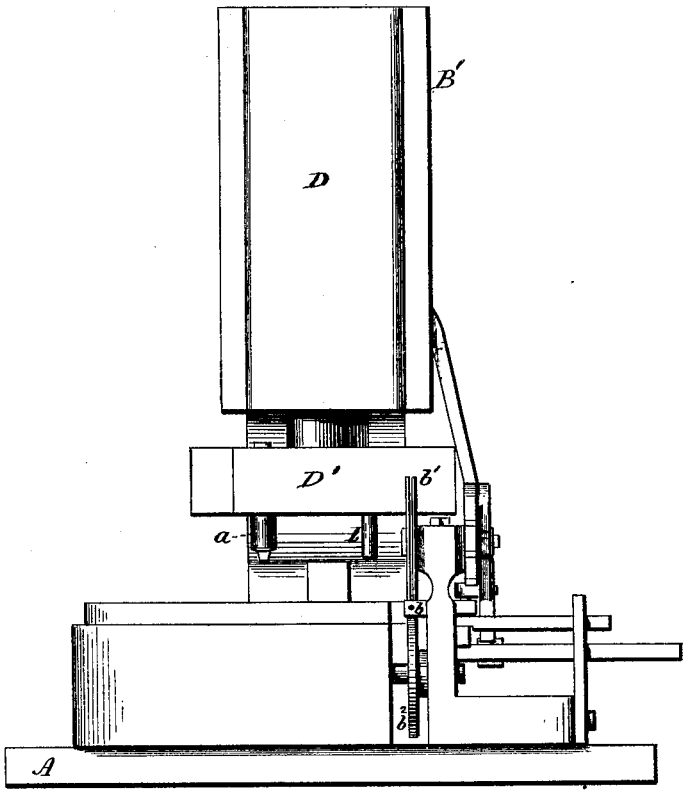
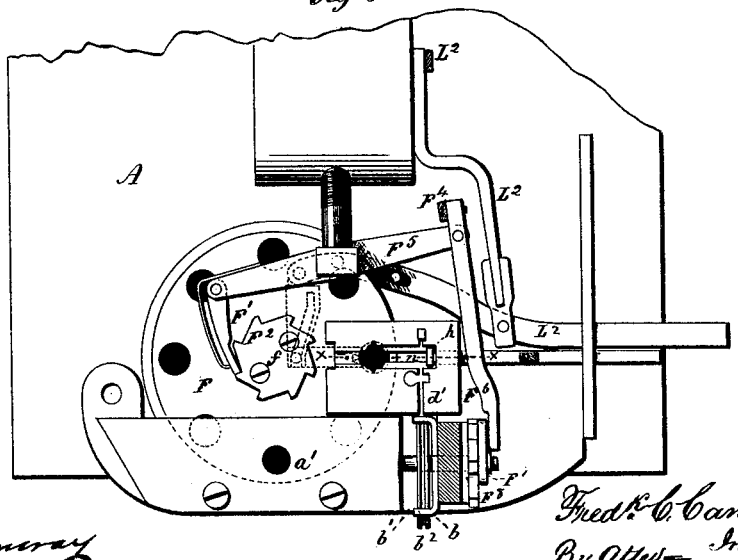


Fig 2



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2 Sheets—Sheet 2.

F. C. CANNON.

MACHINE FOR MAKING BUTTON BACKS.

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fig 3

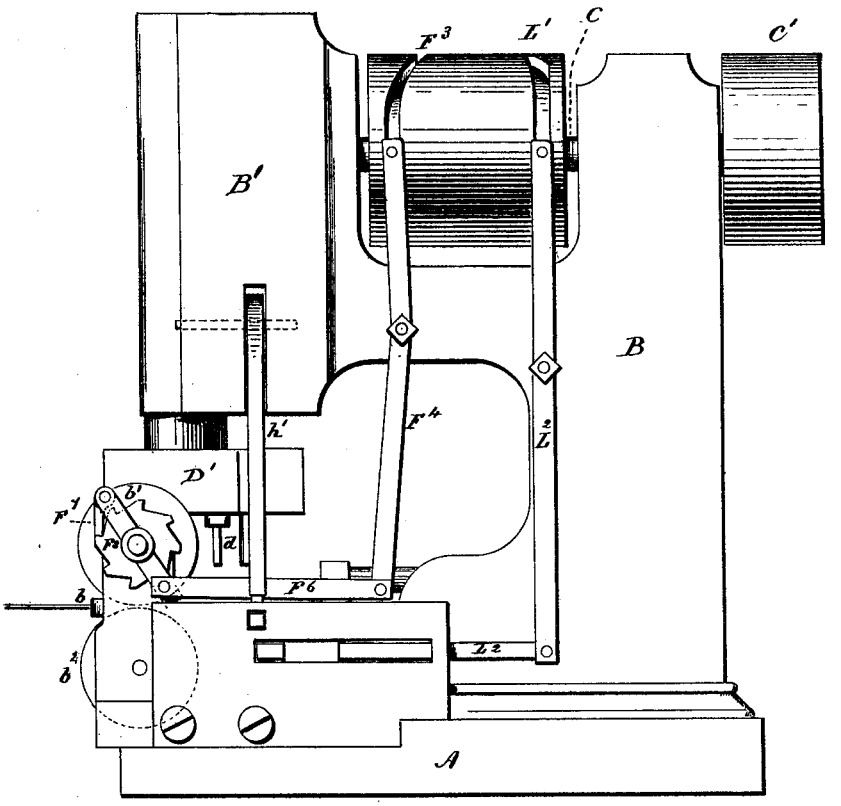


fig 4

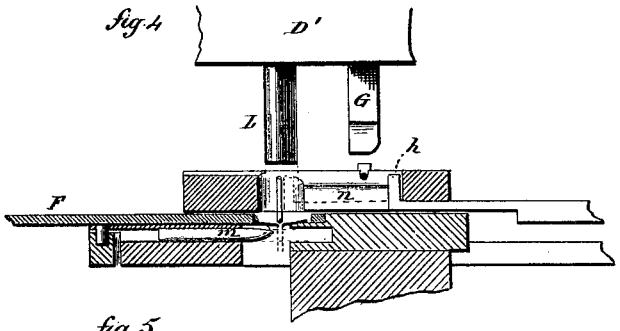
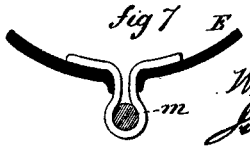


fig 6

fig 5

fig 7



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UNITED STATES PATENT OFFICE.

FREDERICK C. CANNON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR MAKING BUTTON-BACKS.

Specification forming part of Letters Patent No. **185,492**, dated December 19, 1876; application filed March 27, 1876.

To all whom it may concern:

Be it known that I, FREDERICK C. CANNON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Machine for Making Button-Backs; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description, and which said drawings constitute part of this specification, and represent in—

Figure 1 a front view; Fig. 2, a top view, the head and punches removed, to show the mechanism on the bed; Fig. 3, a side view; Fig. 4, a vertical section on line *x x* of Fig. 2, enlarged; Fig. 5, an edge view of the doubler; and Figs. 6 and 7 the button-disks, illustrating the operation of the machine.

This invention relates to a machine for forming the back, making, introducing, and securing the wire eye to the disk, for that class of buttons in which the back is formed from a metal disk, with a wire eye attached; and the invention consists in the mechanism hereinafter described and recited in the claims, whereby the disk and eye are formed and united complete in a single machine.

A is the bed on which the operative mechanism is placed. From this rises an upright, B, carrying a head, B′, and in which the driving-shaft C is supported, caused to revolve by the application of power thereto through a pulley, C′. In the head B′ a vertical slide, D, is arranged, and caused to reciprocate vertically by connection with the driving-shaft in the usual manner for punching-presses. This slide carries a tool-holder, D′, in which is arranged the punch *a*. Beneath this punch is the die *a′*. This punch cuts the disk and forms it into the convex shape, and punches it centrally for the introduction of the eye. A disk thus punched is represented enlarged, as E, Fig. 6. The punch carries the disk through the die and into a carrier, F, beneath. This carrier is arranged to revolve upon a center, *f*, and with several perforations near its edge presented successively beneath the die *a′*, to receive the disk; and it is rotated by means of a pawl, F^1, working in a ratchet, F^2. This pawl is actuated by a cam-groove, F^3, on the main shaft, through levers F^4 and F^5, so that at each revolution the carrier F is moved one point.

The wire from which the eye is to be formed is introduced through a guide, *b*, and thence, by feed-rolls b^1 b^2, drawn into the machine. To these feed-rolls an intermittent movement is imparted by the same cam-groove F^3, through the levers F^4 and F^6, working a pawl, F^7, in a ratchet, F^8, in connection with the said rolls, each movement of the rolls carrying into the machine the length of wire necessary for a single eye. The wire is cut off by a cutter, *d*, on the tool-holder. It passes into a groove, *d′*, over and across a slot, *n*, and when it is in that position is cut off by the descent of the cutter, leaving the center of the cut piece or blank over the slot *n*. Then the doubler G, which is arranged in the tool-holder D′ so as to pass down into the slot *n*, strikes the wire, doubles it, and, by its peculiar form, as seen in Figs. 4 and 5, turns out the ends, as seen in Fig. 6, H being the blank, as it then appears. This done, a slide, *h*, actuated through a lever, *h′*, by a cam on the driving-shaft, moves forward in the slot *n* and carries with it the partially-formed eye to its proper position over the perforation in the disk, as seen in Fig. 4. Then a follower, L, also on the tool-holder, forces the partially-formed eye through the disk. At the same time a horizontal slide, *m*, at right angles to the plane of the partially-formed eye, is forced forward by the cam-groove L^1, through levers L^2. The end of this slide *m* corresponds to the form of the eye, and enters the bend in the partially-formed eye beneath the disk, expanding and shaping it, as seen in Fig. 7, while the follower L bends the ends of the eye down upon the inside of the disk, and completes the article. The shaping of the eye beneath, and the bending of the upper ends above the disk, firmly fix the eye.

The rotation of the carrier F presents each successive disk for the insertion and securing of the eye, and thence carries the completed article to a point where it may be discharged from the machine.

I claim—

1. The method herein described for inserting and securing button-eyes to the backs,

comprehending doubling the wire, inserting it from the inside of the disk outward through a perforation in the disk, then opening the doubled wire outside the button to form the eye, and setting the ends upon the inside, substantially as specified.

2. In a machine for making button-backs, the combination of the following elements: A disk-forming punch, *a*; its die *a'*; the intermittently-moving carrier F; the doubler G, partially forming the eye; the slide *h*, for transferring the partially-formed eye; the follower L; and the eye-former *m*, for setting the eye in the disk, substantially as described.

FRED. C. CANNON.

Witnesses:
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