

2 Sheets—Sheet 1.

No. 318,024.

Patented May 19, 1885.



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(No Model.)

2 Sheets—Sheet 2.

R. J. POWELL & W. F. NOLAN.
MACHINE FOR ATTACHING BUTTONS TO GARMENTS.

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Fig. 5

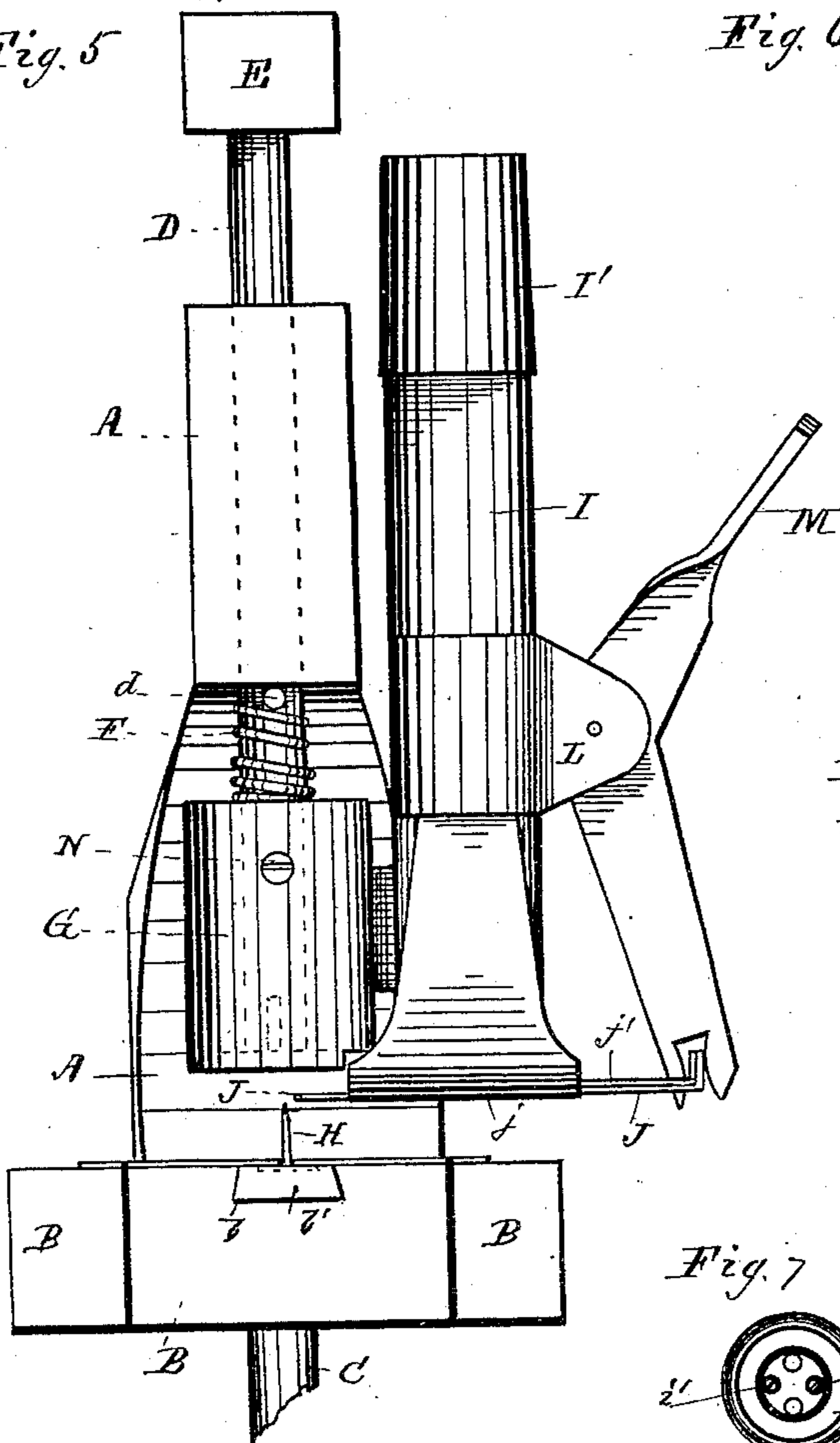


Fig. 6

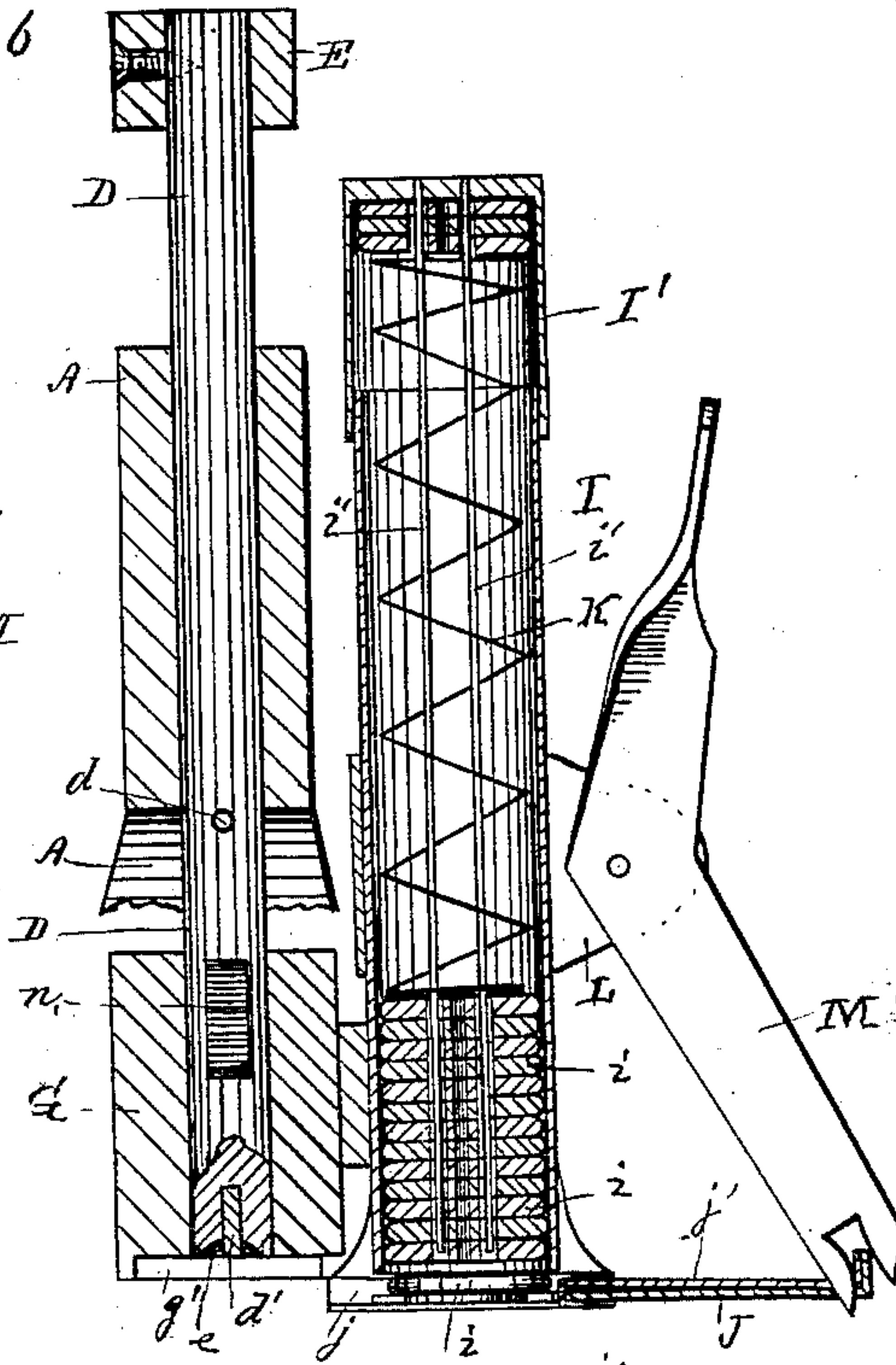


Fig. 8

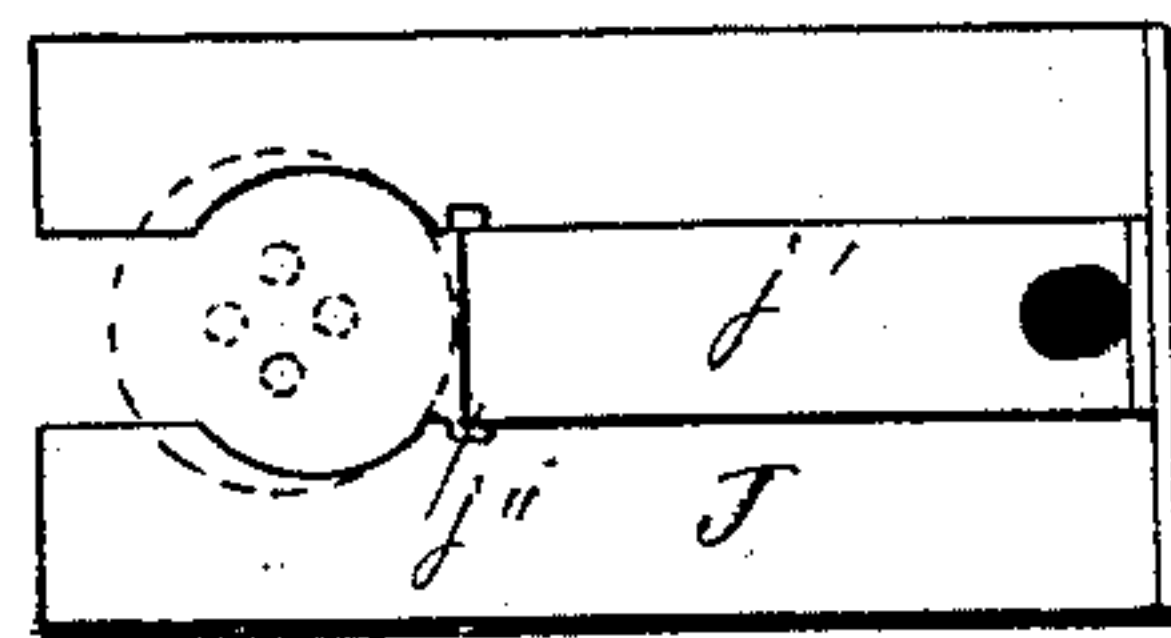


Fig. 9

Fig. 7

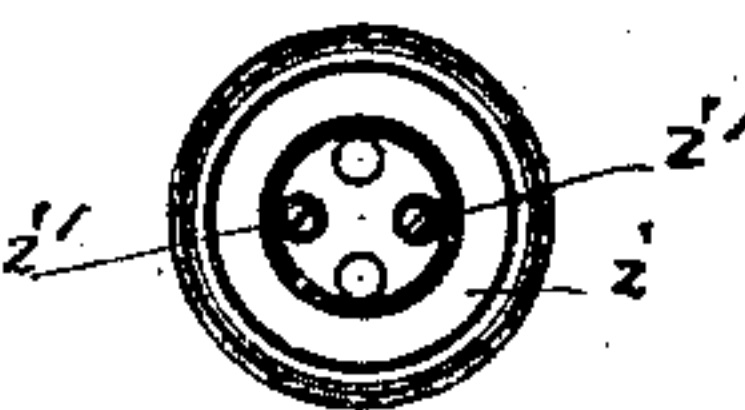
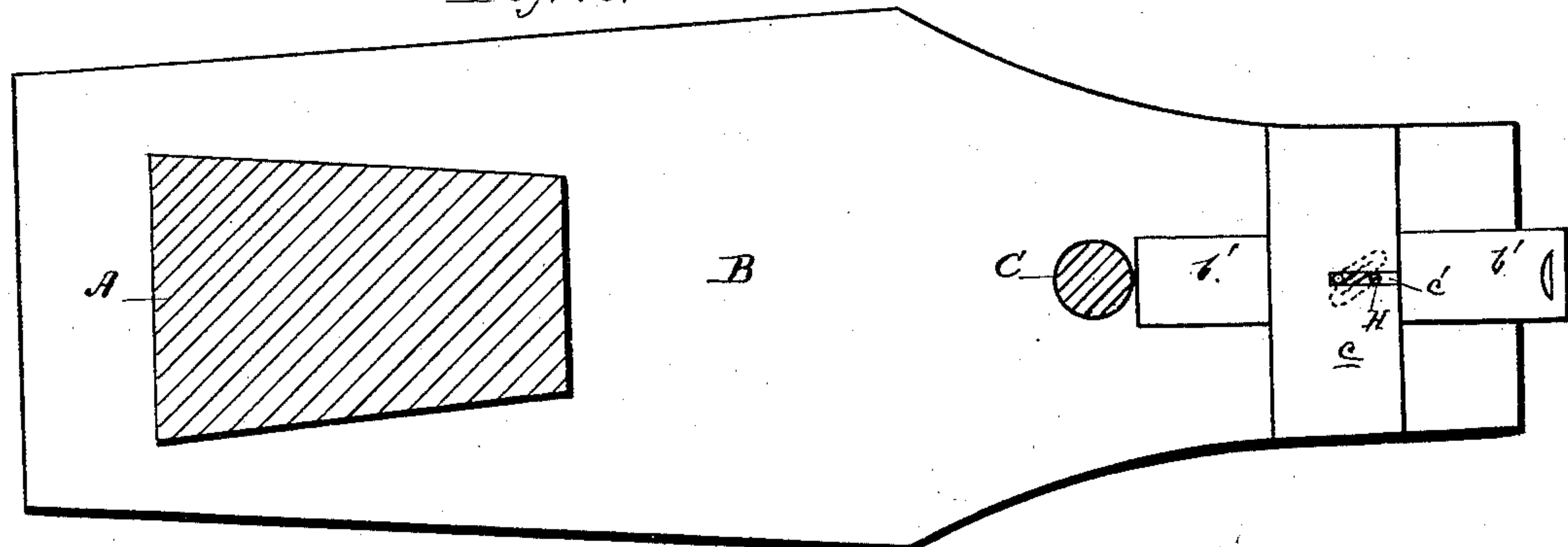


Fig. 10



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UNITED STATES PATENT OFFICE.

RICHARD J. POWELL AND WILLIAM F. NOLAN, OF EVANSVILLE, INDIANA.

MACHINE FOR ATTACHING BUTTONS TO GARMENTS.

SPECIFICATION forming part of Letters Patent No. 318,024, dated May 19, 1885.

Application filed March 24, 1885. (No model.)

To all whom it may concern:

Be it known that we, RICHARD J. POWELL and WM. F. NOLAN, citizens of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Machines for Attaching Buttons to Garments, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in machines for attaching buttons to garments, and has for its object to make the fastening of the button to the cloth in a more expeditious and durable manner than can be done by needle and thread or by hand. These objects are attained by the mechanism illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation and shows the rod C broken off below the base B, then in dotted lines, and then continued in full lines to a treadle, B'. Fig. 2 is a detached view of the bottom of the piece G, of the cylinder I, slide J, and a part of the arm A broken away.

25 Fig. 3 is a detached view of the bottom of the plunger D, and shows slot *e'* and cavity *e*. Fig. 4 is a detached side view of the plunger D, the upper part thereof broken away, and shows a flattened place thereon, *n*, and slot *e'*. Fig. 5 is a front elevation of the machine. Fig. 6 is a vertical section of the machine. Fig. 7 is a detached plan view of a button, and shows the relative position of the rods *i'* in section. Fig. 8 is a detached sectional view of the slide J and spring *j'*. Fig. 9 is a plan view of slide J and spring *j'*, and shows in dotted lines the position of a button about to be slid under the plunger D. Fig. 10 is a plan view of the base B and some of its attachments, the arm A and rod C being in section.

The letter A indicates a supporting-arm, suitably secured to a base, B, preferably made of cast-iron. This arm has two openings for the passage of a rod, C, and plunger D, which latter are connected to each other by a cross-piece, E, above the top of the arm A. The rod C and plunger D are fitted to move freely up and down in the openings provided for the purpose in the arm A. The rod C extends downwardly through an opening in the base B, and has its lower end secured to a treadle,

B', whereby it may be forced in a downward direction, together with the plunger D, by the application of foot-power, for a purpose hereinafter described. A pin, *d*, which passes through the plunger D, limits the motion of the plunger in an upward direction, and also serves to hold the upper end of a spiral spring, F, which encircles the plunger. The lower end of this spring F bears upon the top of a cylindrical piece, G, having a central opening, *g*, for the passage of the plunger D, upon which it slides up and down, the movement being limited by the flattened part *n* of the plunger D and by the set-screw N placed upon one side of the cylindrical piece G. The bottom of the piece G has a circular recess, *g'*, and also a transverse piece of metal, *d'*, across the bottom of the opening *g*. The plunger D has a cup-shaped recess at the bottom, *e*, and a slot, *e'*, which, when the plunger is forced down, straddles the transverse piece *d'*. The circular recess *g'* is intended to hold the button firmly in the proper position during the act of attaching the button to the cloth of the garment, which is done by means of small staples H, the points of which penetrate the cloth and pass through the perforations of the button. The points of the staple are turned down and clinched upon the button by the plunger D and the transverse piece of metal *d'*, when the plunger D and its attachments are forced down by means of the treadle and rod C. The cup-shaped recess *e* in the bottom of the plunger D serves to turn the points of the staples in a downward direction, and the transverse piece *d'* to give the points of the staple the proper direction, as well as to act as a guide to the plunger D. The base B has a slot, *b*, in which there is fitted a slide, *b'*, having a recess to receive the head of a staple. Across the slot *b* there is secured a thin metal plate, *c*, having a narrow slot, *c'*, which serves the purpose to hold a staple, H, in a vertical as well as in the proper position to be acted upon by the plunger D and attachments when said plunger is forced down upon the staple to turn its points and clinch them upon the button, and thereby cause the button and cloth to be securely fastened to each other.

Attached to one side of the piece G (or forming a part thereof) is a cylinder, I, of sufficient

size to hold a quantity of buttons, *i*. It is open at the top, in order that the buttons may be introduced to the interior thereof. Its upper end is provided with a cap, *I'*. To the inner side of the top thereof are secured two wires or rods, *i'*, on a line with the axis of the cylinder *I*, and of sufficient length to reach nearly the bottom of said cylinder. Surrounding these rods *i'* is a spiral spring, *K*, the top of which bears against the under side of the cap *I'* and the bottom upon the buttons *i*. The rods *i'* are inserted in the openings of the buttons, and serve as guides to keep the buttons in proper position to receive the staples *H*. The spiral spring *K* is intended to feed the buttons in a downward direction to the bottom of the cylinder *I*, which is open and enlarged, and provided with grooves *j* to receive a slide, *J*, having a flat spring, *j'*, the free end of which is turned down and forms a flange, *j''*, which serves the purpose to engage with a button, *i*, as it is fed to the bottom of the cylinder *I*, and when the slide *J* is forced under the bottom of the piece *G* serves the purpose to carry the button where it will be received by the circular recess *g'*, and be held thereby during the descent of the plunger *D* and its attachments, for the purpose hereinbefore described. The cylinder *I* is provided with a bracket, *L*, which forms the fulcrum of a lever, *M*, the lower end of which is bifurcated and engages with slide *J*. The lever *M* furnishes the means by which the slide *J* may be slid back and forth in the grooves *j*.

This machine may be placed upon a table or bench having an opening for the passage of the rod *C*, and may be secured thereto in any convenient manner.

The foot-power or treadle for operating the rod *C* and plunger may be secured to the floor or to the bench itself.

Having described our invention, what we desire to secure by Letters Patent and to claim is—

1. The combination of supporting-arm *A* and base *B*, having slot *b*, slide *b'*, and metal plate *c*, having narrow slot *c'*, with rod *C*, cross-piece *E*, and plunger *D*, having pin *d*, spiral spring *F*, piece *G*, having longitudinal opening *g*, circular recess *g'*, and transverse piece *d'*, as described, and for the purposes set forth.

2. In a button-fastening machine, the piece *G*, having circular recess *g'*, in combination with cylinder *I*, having cap *I'*, provided with rods *i'*, and spiral spring *K*, as described, and for the purposes set forth.

3. In a button-fastening machine, the combination of cylinder *I*, and bracket *L* with lever *M*, and slide *J*, having spring *j'*, provided with flange *j''*, as described, and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

RICHARD J. POWELL.
WILLIAM F. NOLAN.

Witnesses:

W. P. LEONARD,
T. C. CRUMBAUGH.