

(No Model.)

A. FELBER.

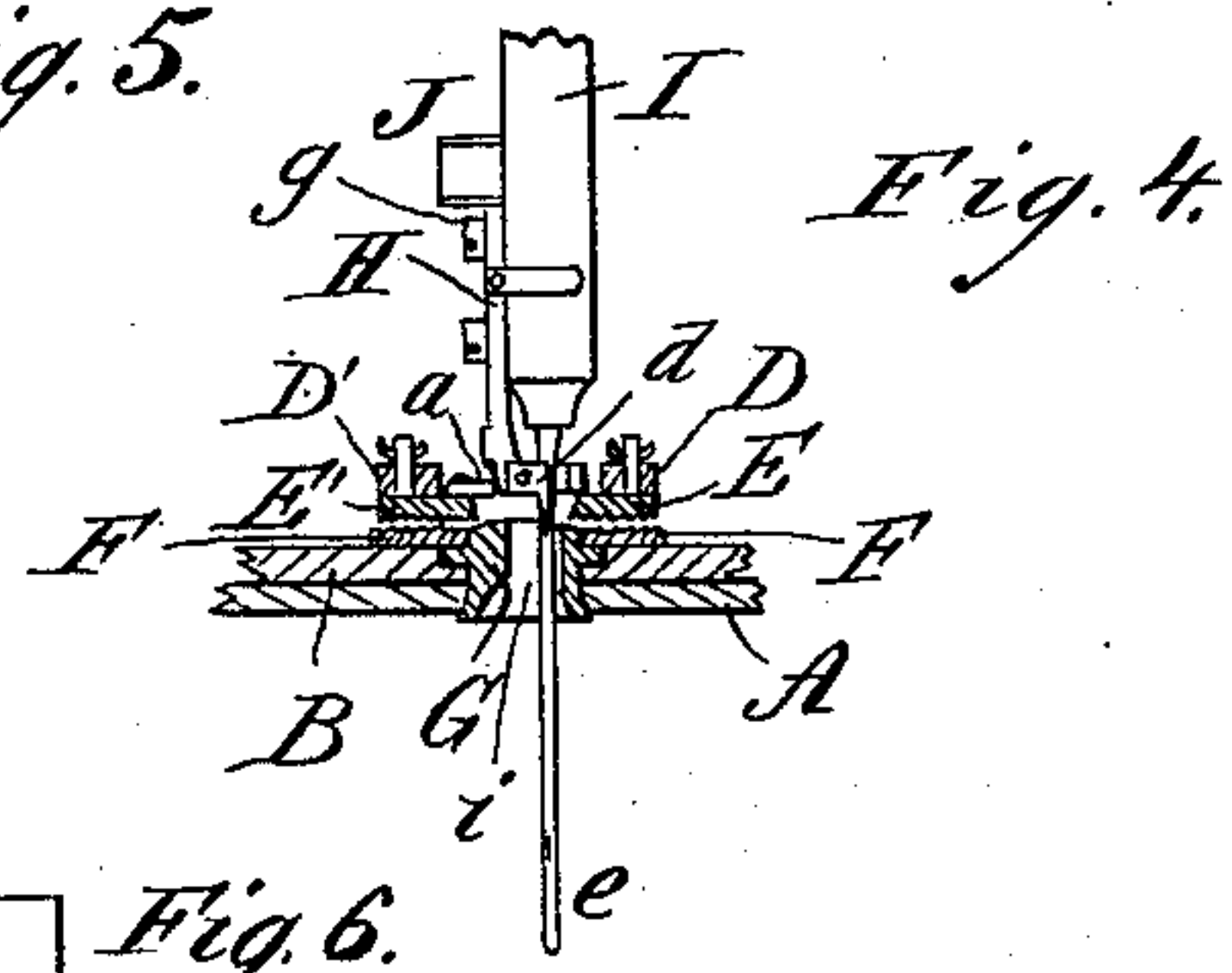
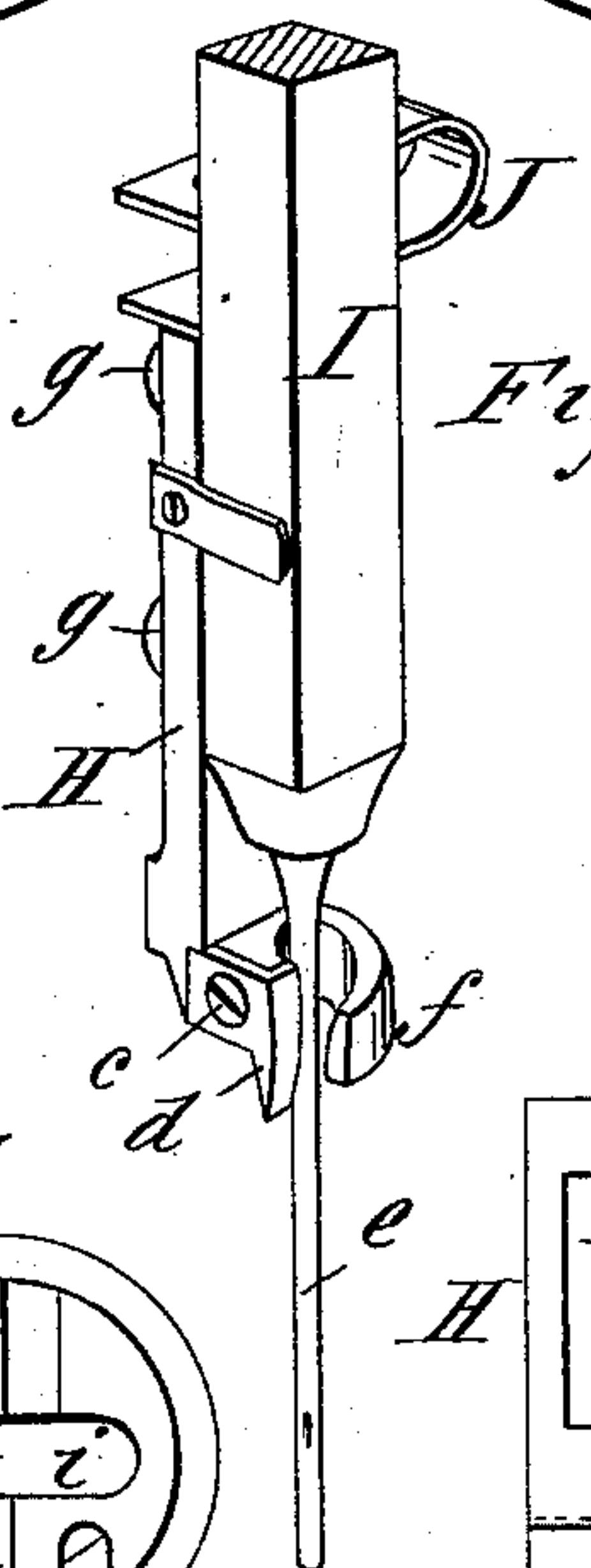
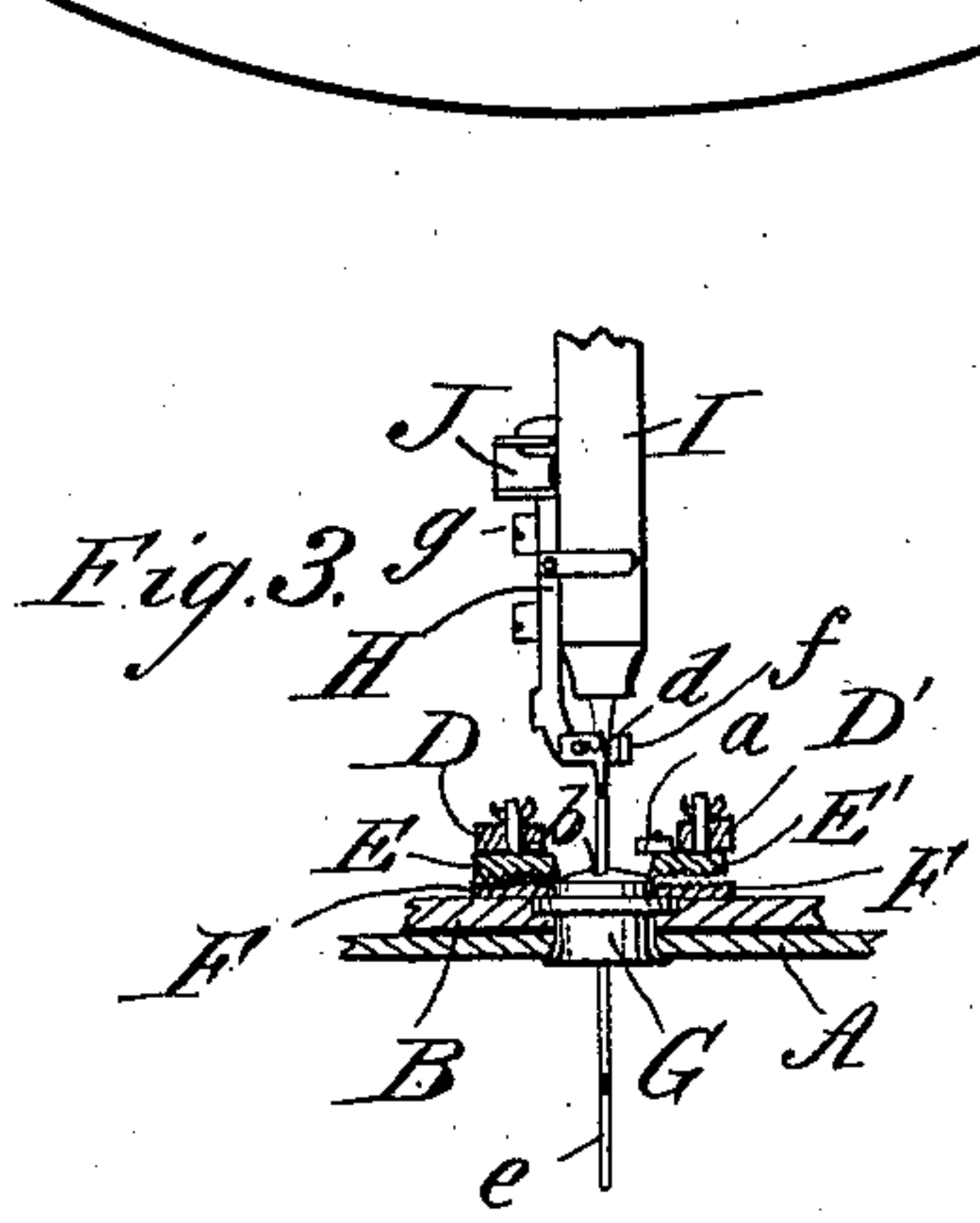
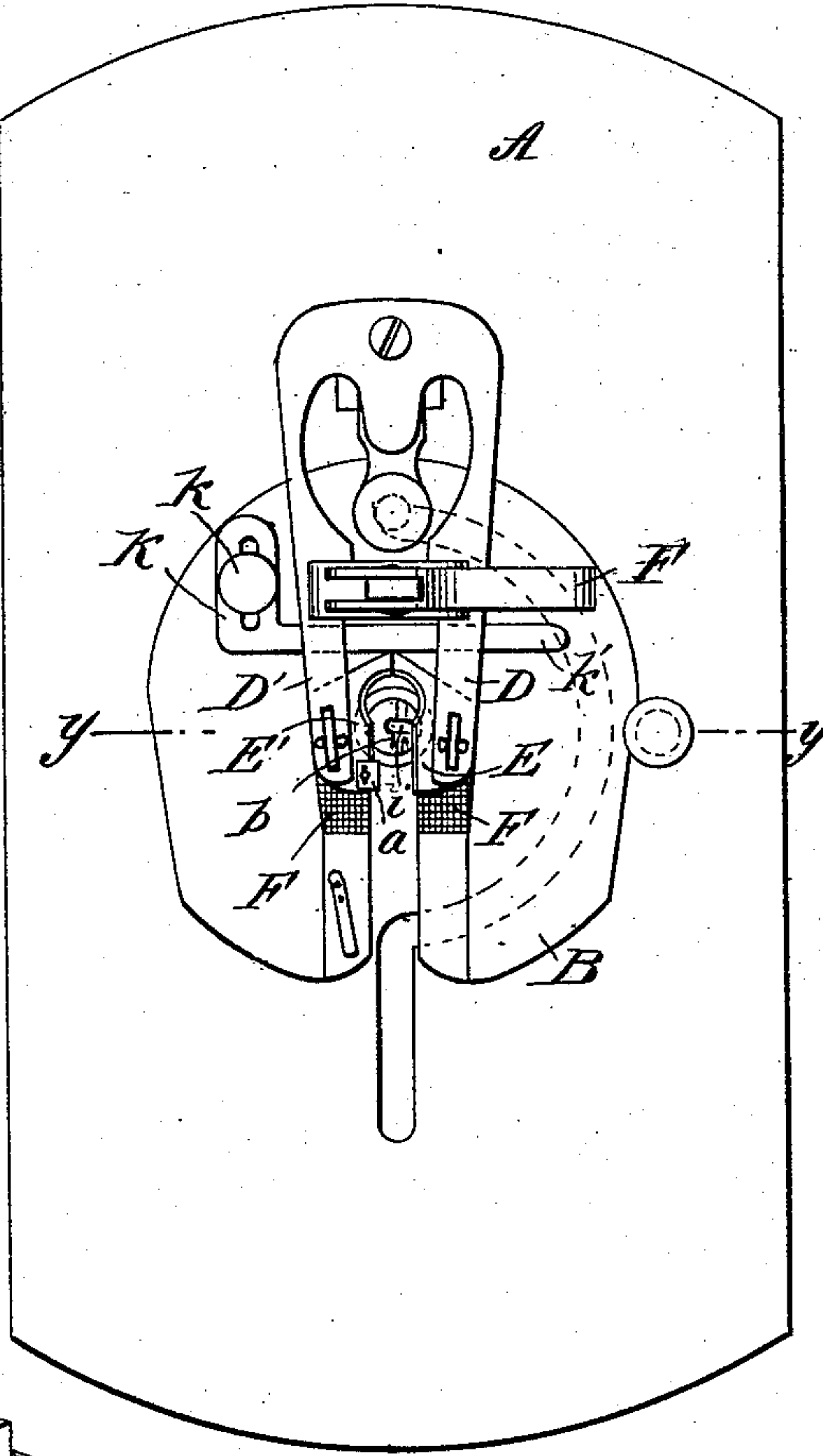
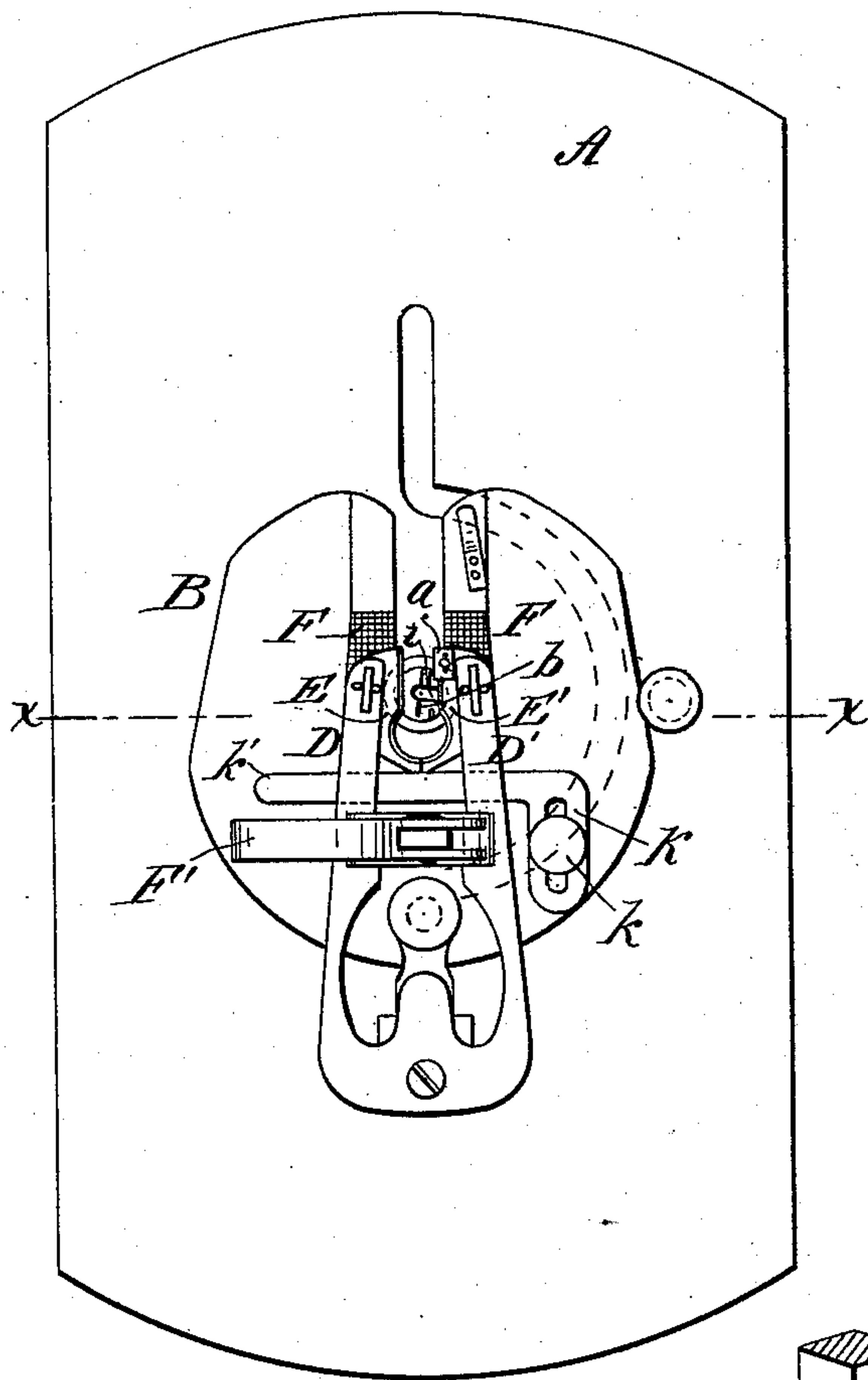
BUTTON HOLE CUTTING ATTACHMENT FOR BUTTON HOLE
STITCHING MACHINES.

No. 301,974.

Patented July 15, 1884.

Fig. 1.

Fig. 2.



WITNESSES:

Donn Twitchell.
C. Sedgwick

Fig. 7.

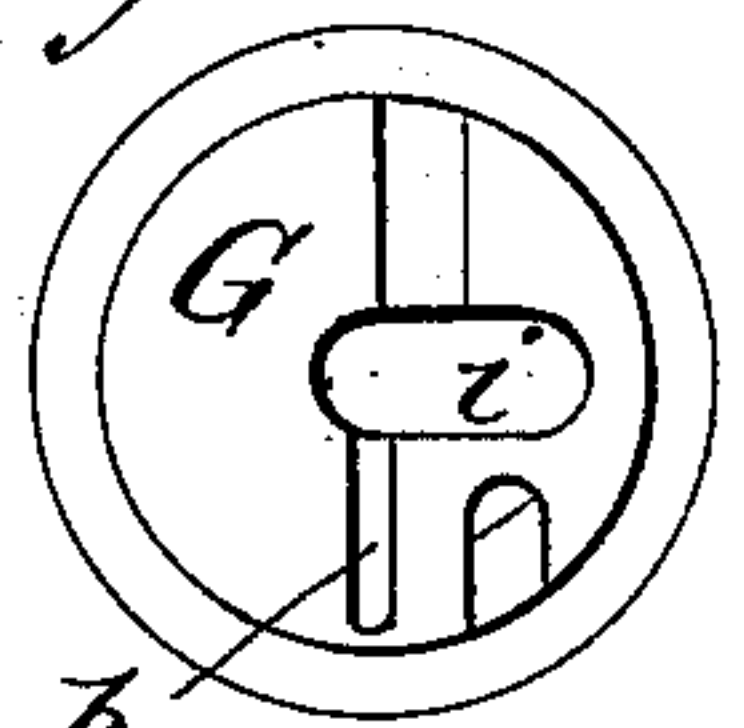
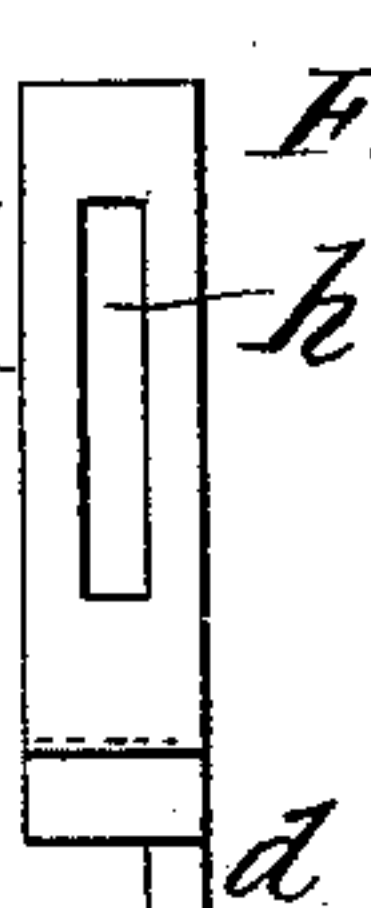


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

ARTHUR FELBER, OF BROOKLYN, NEW YORK.

BUTTON-HOLE-CUTTING ATTACHMENT FOR BUTTON-HOLE-STITCHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 301,974, dated July 15, 1884.

Application filed October 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR FELBER, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Button-Hole-Cutting Attachment for Button-Hole-Stitching Machines, of which the following is a full, clear, and exact description.

This invention consists, principally, in applying a narrow blade to the needle-bar of button-hole-stitching machines for cutting the button-hole through the material in which the button-hole is to be made at the time of stitching the button-hole, said blade being arranged in line with the needle and adapted to be held out of contact with the goods to be operated on, except when making the edge-stitch in stitching the first side of the button-hole.

The invention also consists in forming the plate-button with a recess or slot, in conjunction with which the blade acts in cutting; also, in providing the spring-pressed stock to which the blade is attached with a side projection adapted to strike upon the right-hand upper clamp-arm jaw—that is, the jaw at the right hand in starting the button-hole—for holding the blade out of contact with the material at the time the needle is making the “depth” stitches in stitching the first side of the button-hole; also, in providing the said right-hand clamp-arm jaw with a lug or plate to act in conjunction with the said side projection on the knife-stock, and, also, the heel of the knife-stock, for holding the blade entirely out of contact with the material in stitching the second or return side of the button-hole.

The invention also consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the cloth-plate, plate-button, sliding reversible plate, clamps, and cam-lever of a “Union Button-Hole Stitching Machine,” the plate-button and right-hand upper clamp-arm being formed in accordance with my invention, the sliding plate being shown in position to be reversed, and showing also a guide for placing the goods in the

machine. Fig. 2 is a plan view of the same, showing the sliding plate in reversed position. Fig. 3 is a sectional elevation taken on the line *x x* of Fig. 1. Fig. 4 is a sectional elevation taken on the line *y y* of Fig. 2. Fig. 5 is a perspective view of the needle-bar having my invention applied thereto. Fig. 6 is a rear elevation of the knife-stock and knife removed from the needle-bar, and Fig. 7 is a plan view of the plate-button.

A represents the cloth-plate, B the reversible sliding plate, D D' the upper clamp-arms, to which the jaws E E' are attached, and F F' represent the lower clamp-arms, all of which parts are of the ordinary construction, except that the jaw E' is provided upon its inner edge, and near its outer end, with the lug or small slotted plate *a*. The cam-lever F', for operating the clamp-arms D D', and the plate-button G are also of ordinary form, except that the plate-button has the small recess or slot *b* formed in it in front of the needle-orifice *i*, into which slot or recess the cutting-blade *d* descends after passing through and cutting the material in which the button-hole is being made.

H is the knife-stock, to which the blade *d* is attached by the screw *c*. The stock H is attached to the needle-bar I by screws *g g* passing through a slot, *h*, and is formed so as to hold the blade *d* near to and exactly in front of the needle *e*, and is formed also with the side projection, *f*, which stands to the right of the needle *e*. The stock fits loosely upon the screws *g*, and the slot *h* is of such length as to permit the stock to have a slight longitudinal movement, and the stock is held pressed downward with considerable force by the spring J, attached to the needle-bar I above the stock.

K is a guide-plate attached to the sliding plate B by the thumb-nut *k*, and formed with the arm *k'*, which, when the guide is properly put in place upon plate B, reaches under the upper clamp-arms, D D', as shown in Figs. 1 and 2, to assist the operator in placing the goods in the machine.

In operation, the plate B will be brought to the position shown in Fig. 1, and the goods will then be placed under the jaws E E', with the edge thereof properly against the arm *k'* of the guide K, and then clamped by turning

lever *F'* in the ordinary way. The machine now being put in motion, the needle-bar *I* will descend, causing the needle *e* to penetrate the goods either at the right of the elongated needle-orifice *i* in the plate-button *G*, as shown in Fig. 4, forming the first depth stitch, or at the left of said orifice, as shown in Fig. 3, forming the first "edge" stitch of the button-hole.

10 In forming the first and every subsequent depth stitch on the first side (the side first stitched) of the button-hole, the projection *f* will strike upon the inner edge of the jaw *E'*, as shown in Fig. 4, which will stop the further descent of the stock *H*, and thus hold the blade *d* out of contact with the goods.

15 In making the first and every subsequent edge stitch on the first side of the button-hole, the needle-bar *I*, being carried to the left from the depth stitch just made, will carry the stock *H* away from over the jaw *E'*, so that the blade *d* will descend and pass through the goods into the recess or slot *b* made in the plate-button *G*, making a narrow clean cut in the goods, thus gradually cutting the button-hole at the same time and slightly in advance of the stitching. The machine having been run in this manner until the desired length of button-hole has been reached, the plate *B* will be reversed in the ordinary manner to the position shown in Fig. 2, and the operation continued in the ordinary manner for stitching the second or return side of the button-hole. By reversing the plate *B* the small plate *a*, secured to the jaw *E'*, will be carried to the opposite side of the needle *e* and under the lower end or heel of the knife-stock *H*, as illustrated in Fig. 4, so that in making each edge stitch the plate *a* intercepts the full downward movement of the stock *H*, and thus holds the blade *d* out of contact with the goods.

20 In making each depth stitch on the return-side of the button-hole, the knife *d* will be held out of contact with the goods by the projection *f* striking upon the edge of the jaw *E*, as illustrated in Fig. 4.

Although I have shown and described my invention applied to a "Union Button-Hole Stitching Machine," it will be understood that it may be applied to other button-hole-stitching machines, and all or a portion of it used with button-hole attachments for ordinary sewing-machines and not depart from the principle and spirit of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The button-hole-cutting attachment herein shown and described, consisting of a sliding stock attached to the needle-bar and carrying a narrow blade in line with the needle, in combination with means, substantially as described, for holding the blade out of contact with the goods at all times except when making the edge stitches in stitching the first side of the button-hole, as set forth.

2. The sliding spring-pressed knife stock connected to the needle-bar and carrying the blade, and having an apertured curved projection, in combination with the jaws or similar attachments, substantially as and for the purpose set forth.

3. The sliding stock connected to the needle-bar acted upon by a spring, and provided with a projection and with the knife having its edge arranged in line with the needle, in combination with the jaw upon which said projection is adapted to strike, substantially as and for the purpose set forth.

4. The combination, with the sliding knife-stock *H*, attached to the needle-bar and provided with blade *d* and formed with projection *f*, of the jaw *E'*, provided with the lug or small plate *a*, substantially as and for the purposes set forth.

ARTHUR FELBER.

Witnesses:

H. A. WEST,
C. SEDGWICK.