

(No Model.)

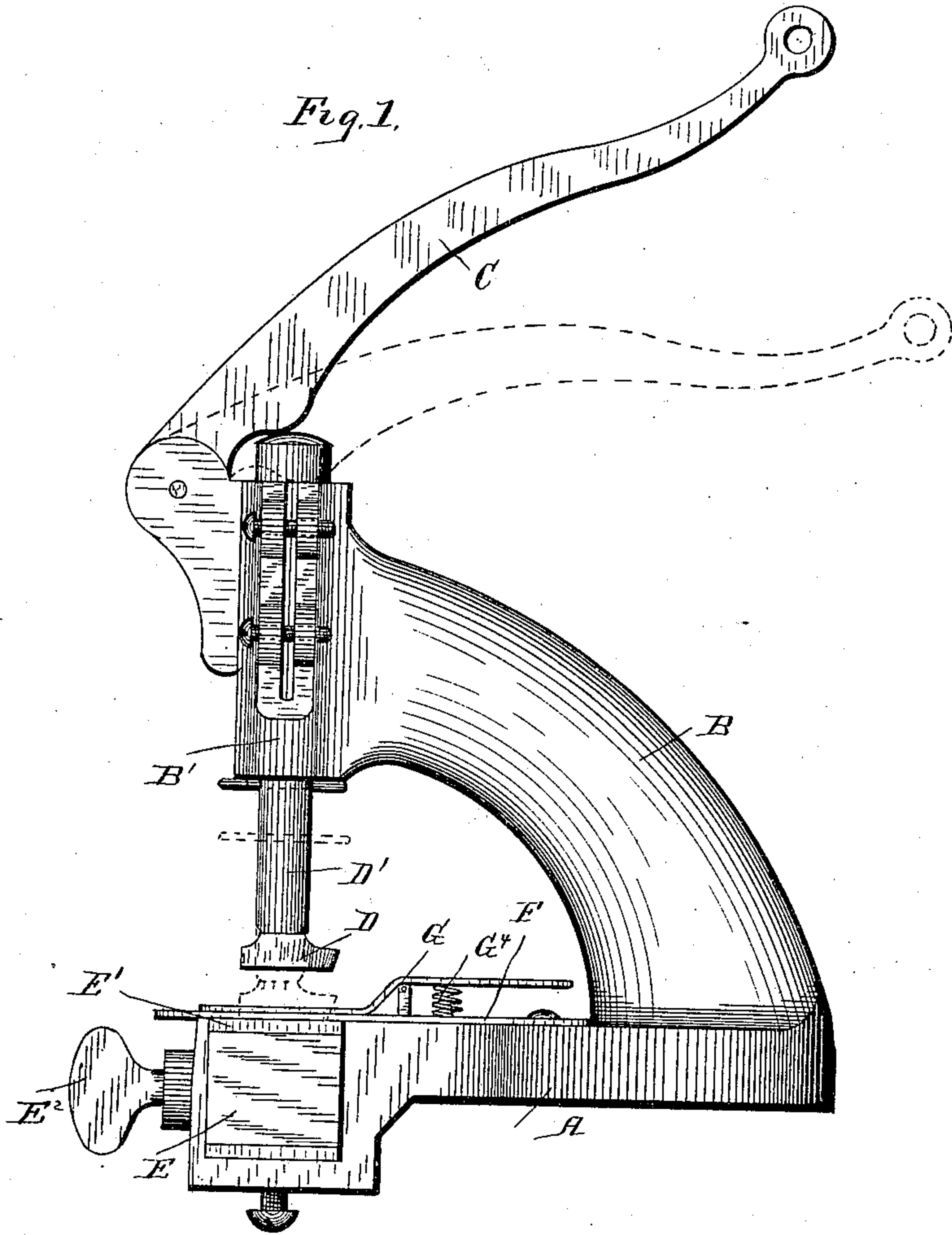
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F. W. OSTROM.

DEVICE FOR CUTTING AND CENTERING BUTTON HOLES.

No. 320,958.

Patented June 30, 1885.



Witnesses
W. A. Jones.
A. B. Fairchild

Inventor.
Freeland W. Ostrom
By A. M. Worcester
att'y.

(No Model.)

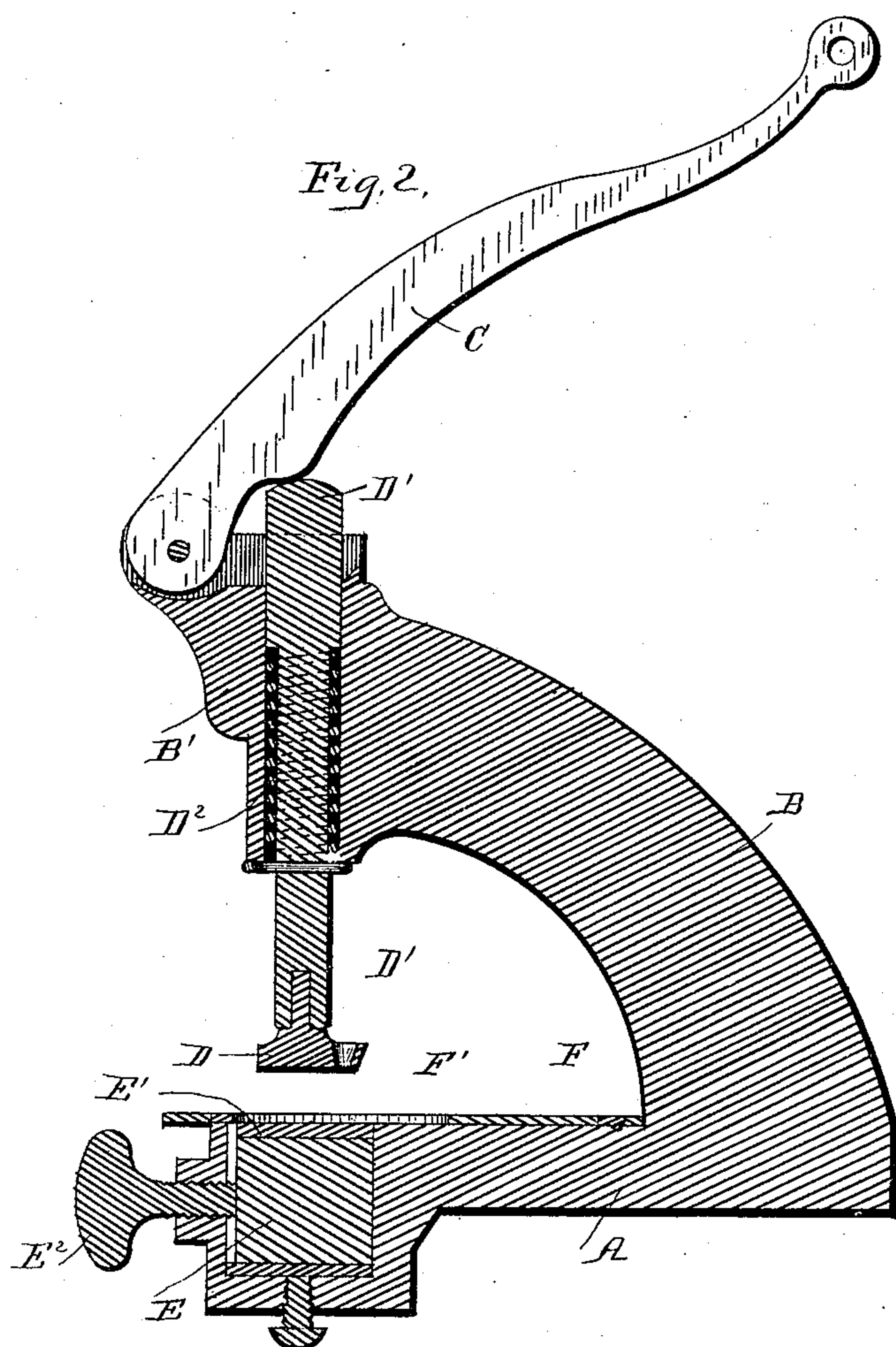
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W. A. Jones,
A. B. Fairchild

Inventor,
Freeland W. Ostrom
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(No Model.)

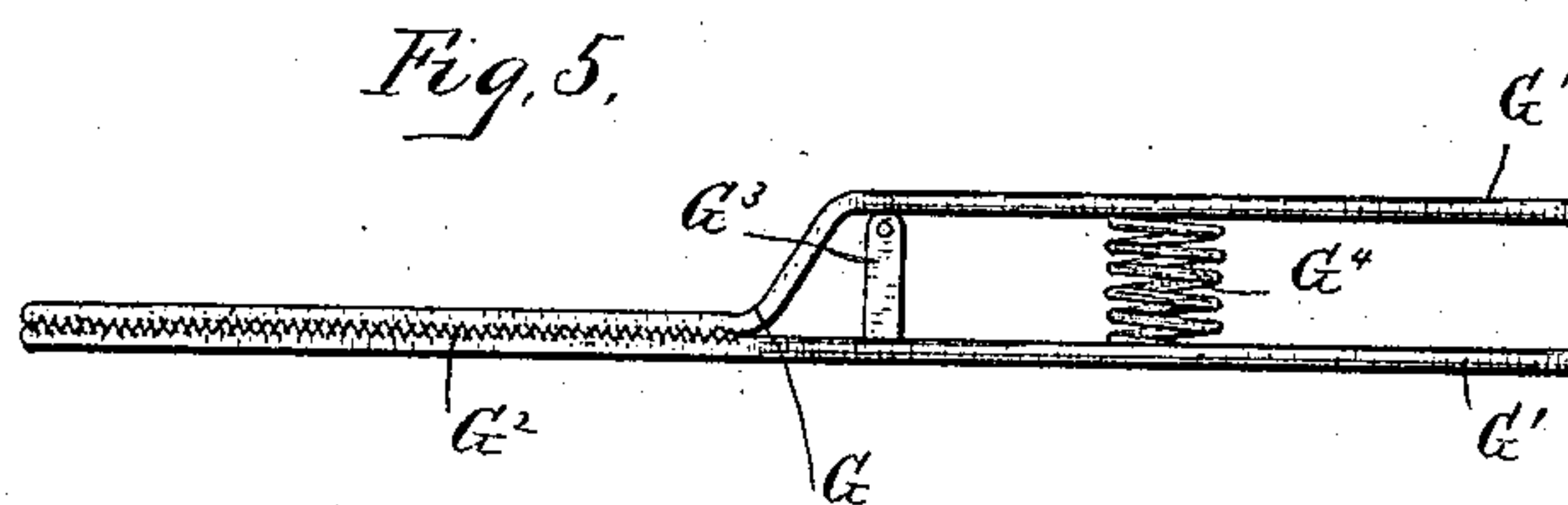
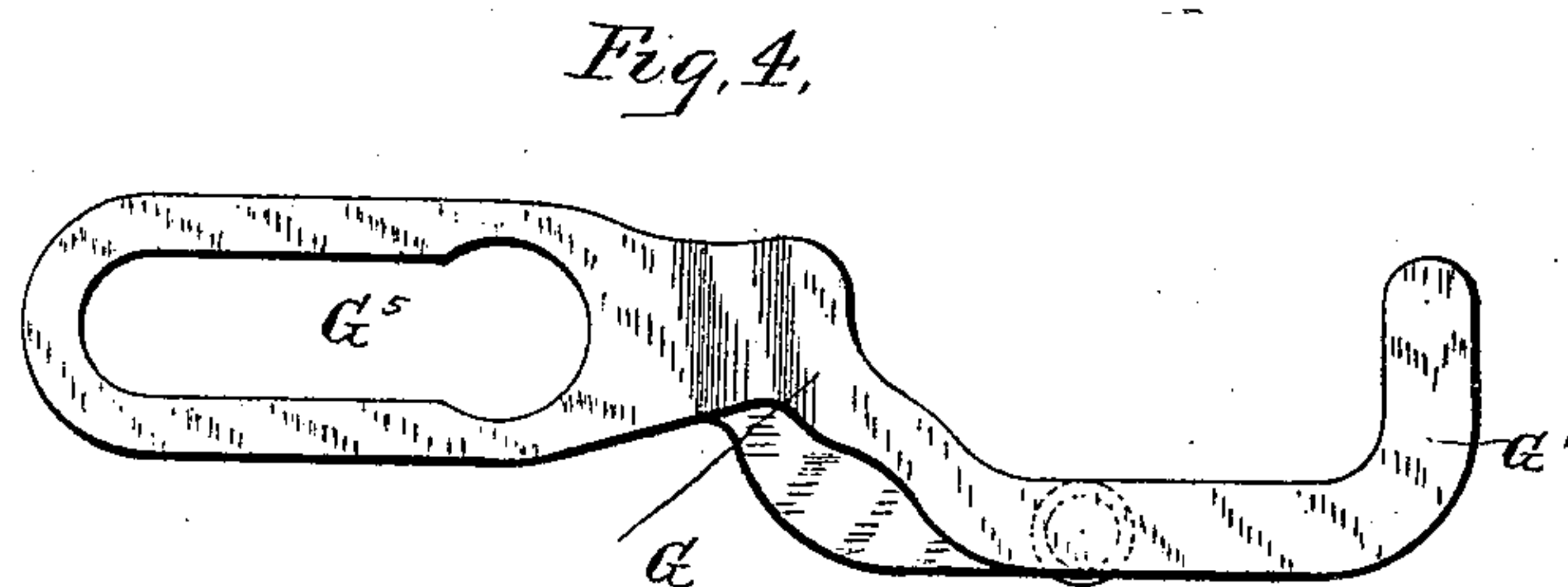
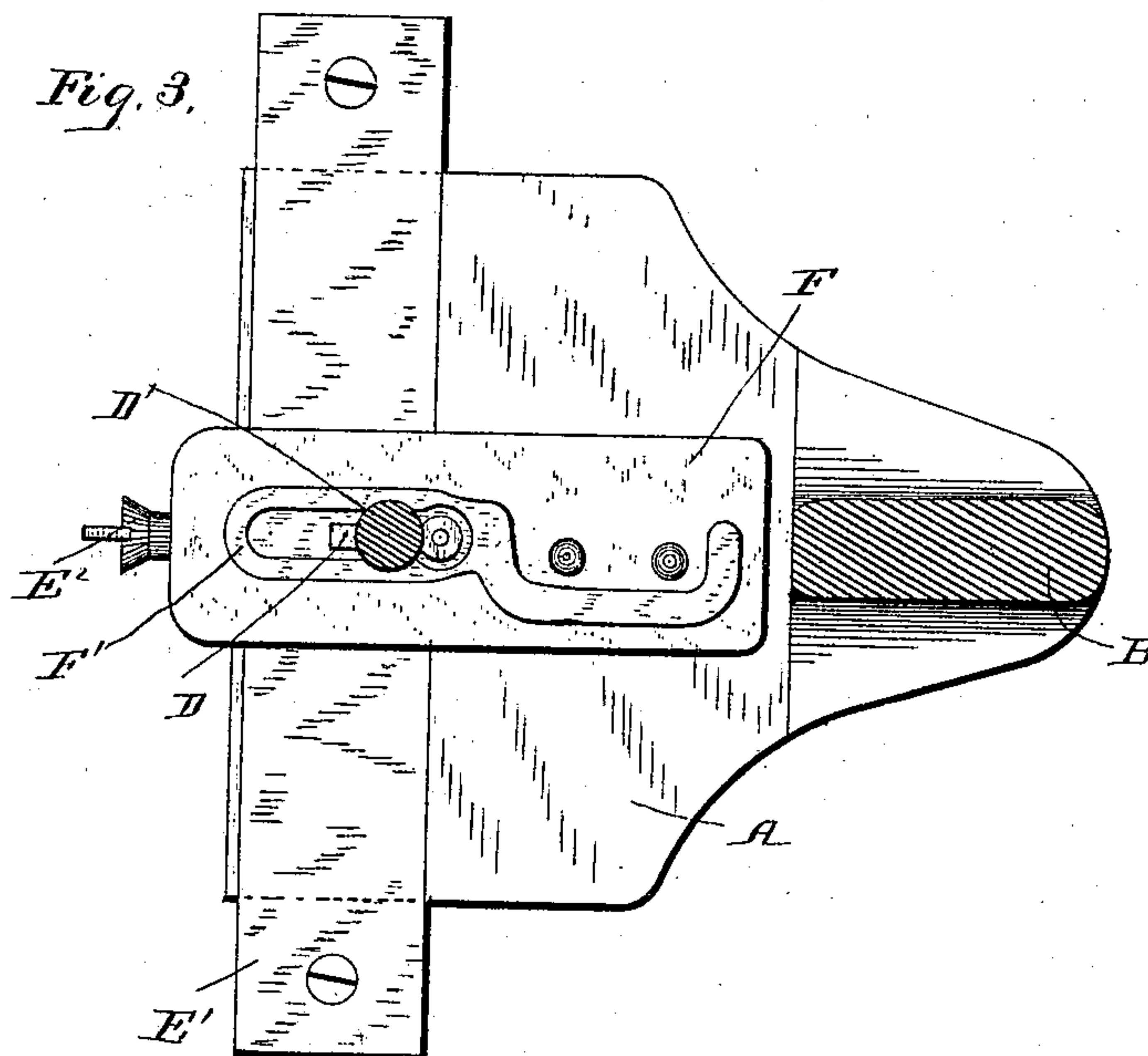
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(No Model.)

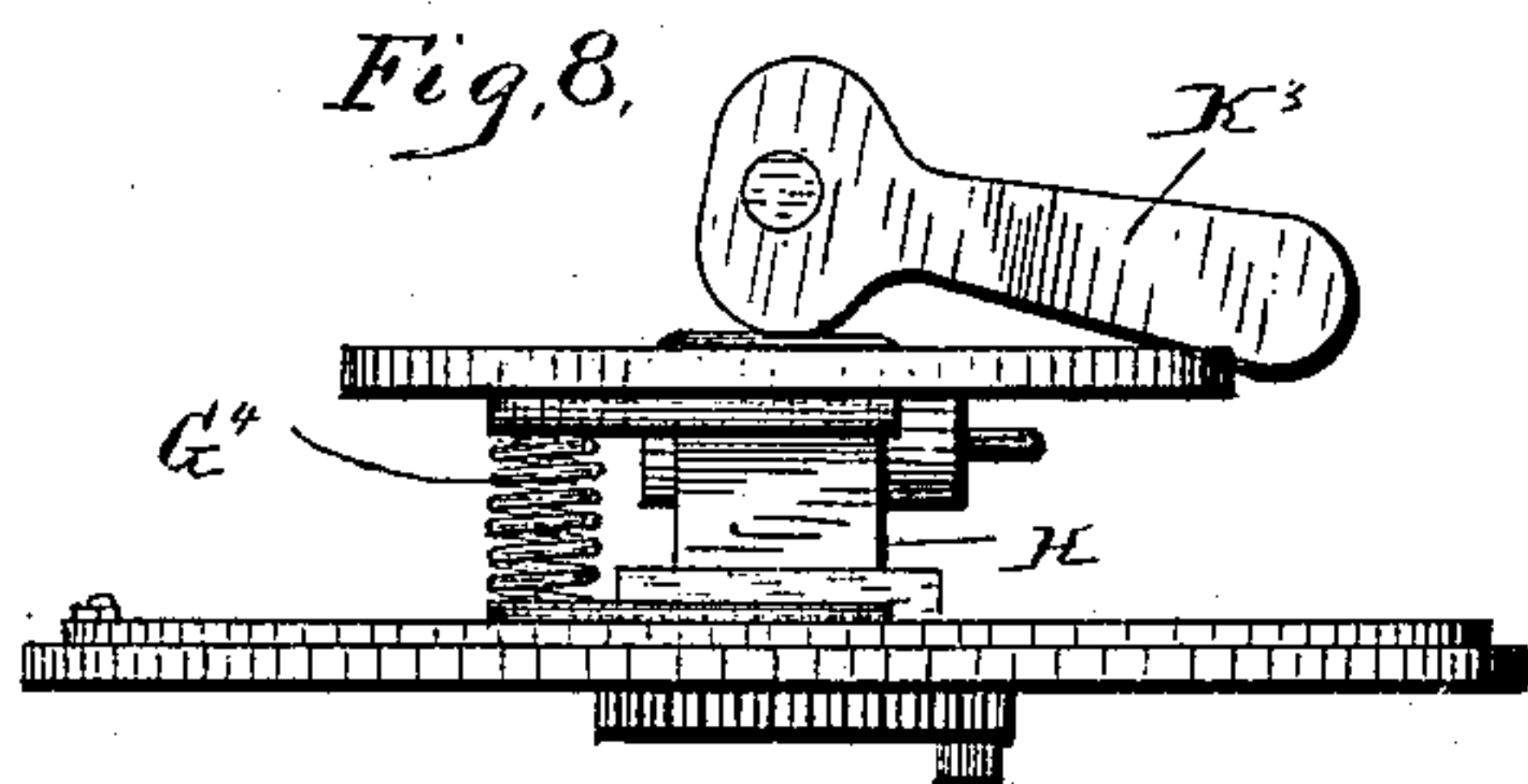
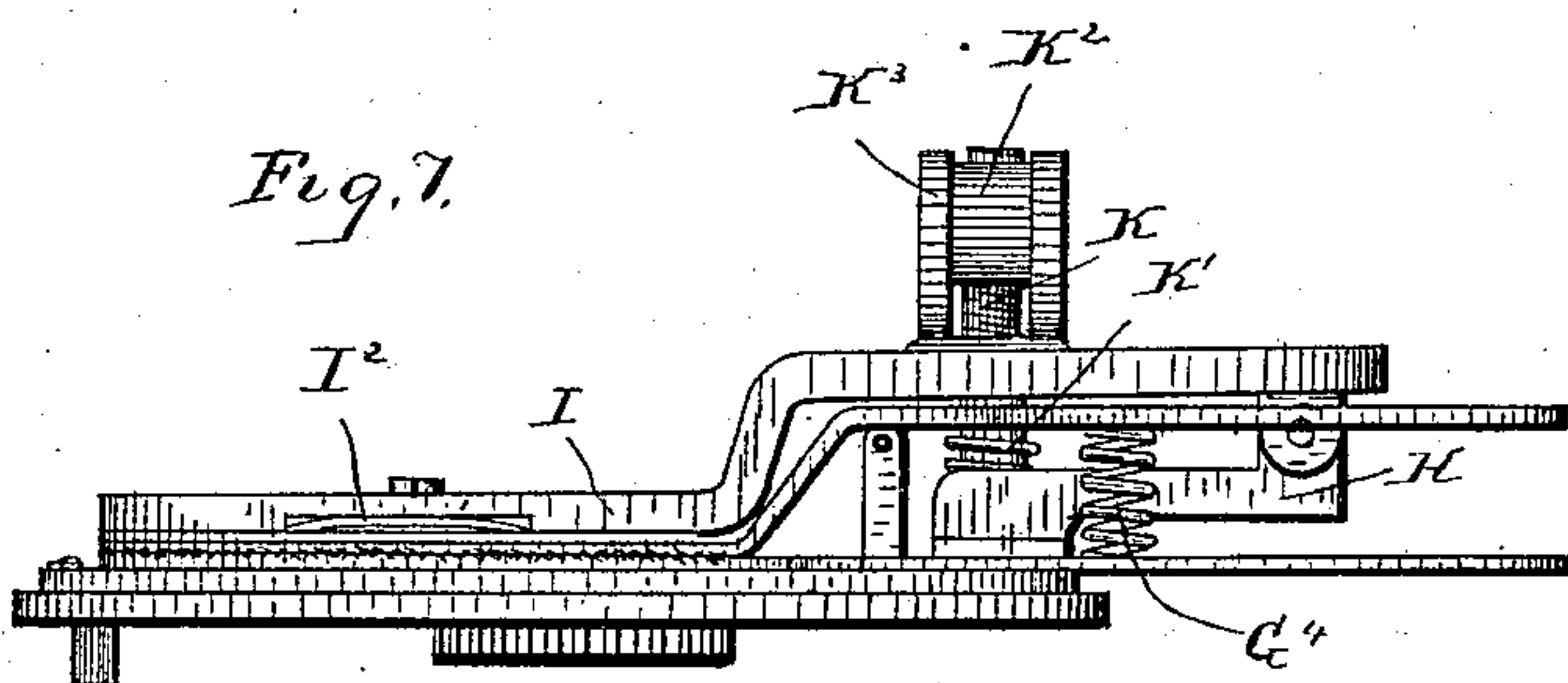
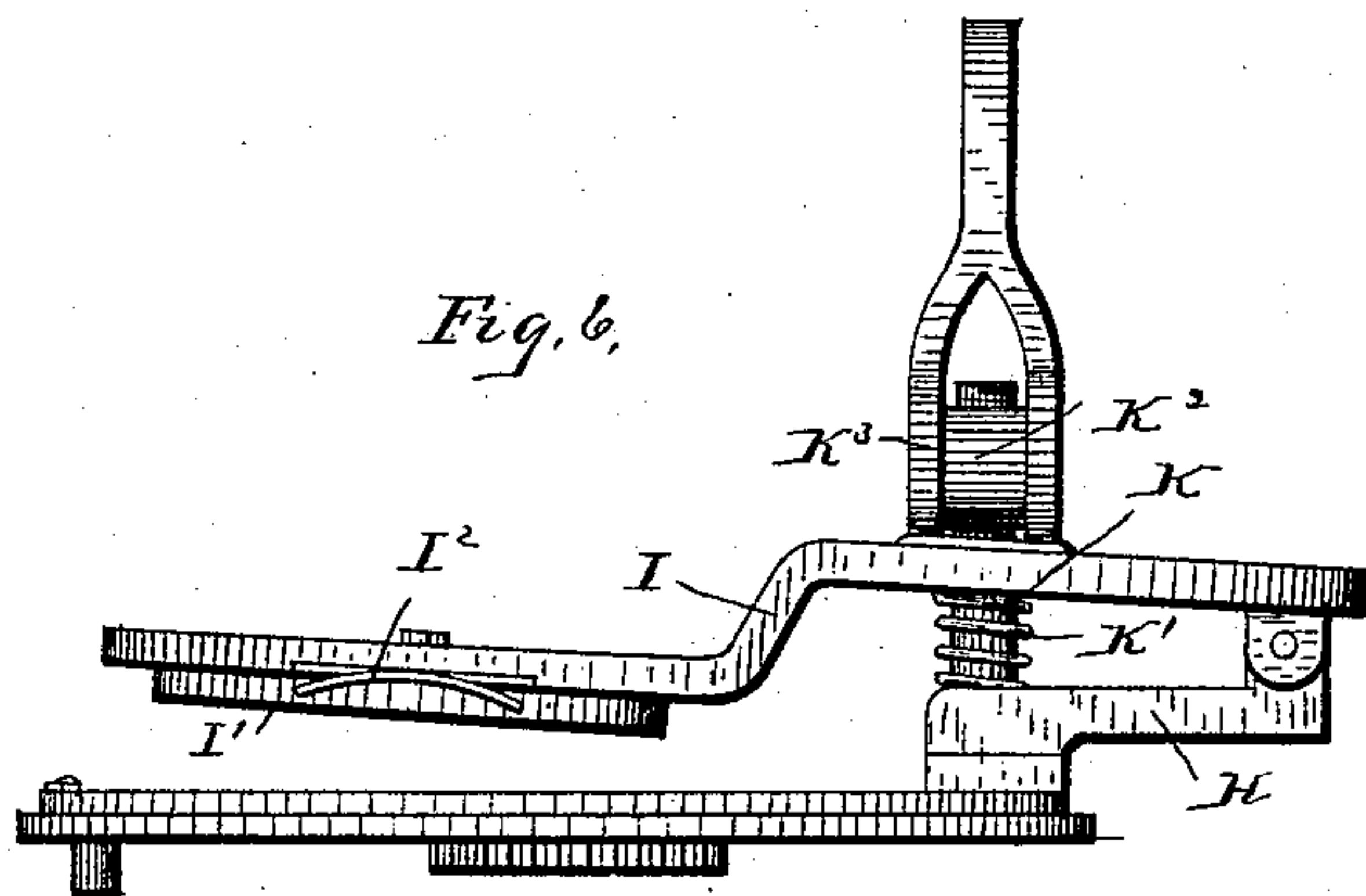
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F. W. OSTROM.

DEVICE FOR CUTTING AND CENTERING BUTTON HOLES.

No. 320,958.

Patented June 30, 1885.



Witnesses.
W. A. Jones.
A. B. Archibald

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Atty.

UNITED STATES PATENT OFFICE.

FREELAND W. OSTROM, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
WHEELER & WILSON MANUFACTURING COMPANY.

DEVICE FOR CUTTING AND CENTERING BUTTON-HOLES.

SPECIFICATION forming part of Letters Patent No. 320,958, dated June 30, 1885.

Application filed August 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, FREELAND W. OSTROM, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Devices for Cutting and Centering Button-Holes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the cutting of button-holes, and it has for its object to devise a system of cutting which shall enable the operator to avoid loss of time in centering the button-holes in the sewing-machine foot, will insure perfect accuracy in cutting and in adjustment in the machine, and will greatly shorten the time that the machine must be idle between the stitching of two button-holes. With these ends in view I have devised the system and mechanism for cutting the button-holes and centering and holding them in the machine, which I will now describe, referring by letters to the drawings forming part of this specification, in which—

Figure 1 is a side elevation of the cutter with the clamp in position for cutting; Fig. 2, a central section with the clamp removed; Fig. 3, a plan view, the arm and cutter-shank being in section; Fig. 4, a plan view; Fig. 5, a side elevation of the clamp detached; Fig. 6, a side elevation of the turning-plate, clamping-arm, cam-lever, &c., as in my pending application for button-hole sewing-machine, filed August 14, 1884, Serial No. 140,558, the clamping-arm being shown as lifted and the cloth-clamp removed; Fig. 7, a similar side elevation with the cloth-clamp in place and the arm held down by the cam-lever, and Fig. 8 a rear elevation corresponding with Fig. 7.

Similar letters indicate like parts in all the figures.

A represents the bed, B the arm, and C the operating-lever, of a cutting-press, which may be of any ordinary construction.

D is the cutter, which I have shown as an eyelet-end cutter, D' the shank working in the head B', and D² the spring for holding the cutter in its raised position.

E is the cutting-block, which is preferably

faced with metal, as at E', and is held in position by a set-screw, E².

F is a plate attached to the bed in any suitable manner, which is provided with a groove or channel corresponding in outline with the cloth-clamp G. This clamp consists of two spring plates or arms, G', having serrations G² upon their inner faces, which act to hold the cloth. The exact construction of the clamp is not an essential feature of my invention, but I preferably construct it substantially as indicated in Figs. 4 and 5.

G³ is a stump or projection on the lower plate. The upper plate is bent upward, then backward parallel again with the lower plate, and is pivoted to the top of stump G³. The rear ends of arms G' act as handles, the clamp being held closed by a spring, G⁴, placed between the arms.

G⁵ is an opening through both plates, to permit the cutter to pass in the act of cutting a button-hole, and which is also made just large enough to permit the flange on the clamping-plate to pass within it, the clamp itself serving as the presser-foot of the machine, as will be more fully explained.

H is a bracket riveted or otherwise secured to a suitable portion of the machine.

In the present instance I have illustrated an eyelet-end cutter, and have illustrated my present invention as applied to the button-hole sewing-machine described in my pending application for Letters Patent referred to above. It should be understood, however, that my improved system of cutting the button-holes and centering them in the machine is equally applicable to other styles of machines and to the cutting of straight as well as eyelet-end button-holes.

I is the clamping-arm, I' the flange, and I² one of the springs.

K is a standard projecting upward from the bracket and passing through a slot (not shown) in the clamping-arm.

K' is a spring under the arm, which acts to hold it in its raised position, as in Fig. 6.

K² is a nut engaging a screw-thread on the standard, and K³ a cam-lever pivoted to the nut, which acts when turned down to hold arm I in its lowered position, as in Figs. 7 and 8.

The operation is as follows: The clamp is placed upon the goods, the place where the button-hole is to be cut being located at opening G⁵. The clamp with the goods in it is then placed in the groove in plate F. The serrations upon the faces of the clamp, assisted by the power of the spring, render it impossible for the clamp to slip upon the goods. As the outlines of the clamp and the groove correspond with each other, the clamp when placed in the groove is securely held against lateral or endwise movement, so that there can be no danger after the clamp is placed upon the goods but that the button-hole will be cut in the right place. The cutting is done by a single downward movement of the cutter actuated by arm B or in any suitable manner. After having served as a holder for the work in the act of cutting the button-hole, the clamp is next made to serve as the presser-foot of the machine while the button-hole is being stitched.

To fix the work in the machine, it is simply necessary to place the clamp under arm I, flange I' being placed within opening G⁵, said opening and flange being made to correspond with each other, as stated above. When the cam-lever is turned down, the action of the flange is to stretch the cloth within opening G⁵ like a drum-head, thus opening the button-hole equally from end to end. Springs I² act to separate arm I from the clamp when the cam-lever is raised.

In practice I contemplate using as many clamps as may be necessary, and shall place as many upon each piece of work as there are button-holes to be stitched in said piece. While the machine is stitching the button-holes upon one piece of work the operator will be placing the clamps upon another piece and cutting the button-holes therein. It will thus be seen that, having once placed the clamps in the right places, the cutting and the centering in the machine cannot fail to be done accurately. The saving in time is very great, as the only stoppage necessary between button-holes is the few seconds necessary to lift the cam-lever, take one clamp from arm I, and place another under it.

I do not of course desire to limit myself to the exact construction shown, as it is obvious that the details may be varied considerably without departing from the spirit of my invention.

I claim—

1. The combination of the following instrumentalities, to wit: first, a cloth-clamp having a central opening; second, a cutting device consisting, essentially, of a bed having a groove corresponding in outline with the cloth-clamp and a cutter, actuated in any suitable manner,

which cuts the button-hole; and, third, a clamping-arm attached to a sewing-machine, which is adapted to hold the cloth-clamp and the work therein firmly in place upon the machine, whereby, having adjusted the clamp, the accurate cutting of the button-hole and accurate centering in the machine are made certain.

2. The cloth-clamp having a central opening, the cutter, and a bed having a groove corresponding in outline with the cloth-clamp, in combination with a plate upon a sewing-machine having an opening corresponding with the opening in the clamp and a clamping-arm attached thereto and having a flange adapted to fit within the opening in the cloth-clamp, whereby when said clamping-arm is pressed down the cloth within the opening is stretched and the button-hole opened from end to end.

3. The cutting device consisting of a cutter and actuating mechanism, a cutting-bed, and a grooved plate, in combination with a clamp adapted to engage the cloth and to rest in said groove, whereby the location of the button-hole is determined by the adjustment of the clamp.

4. A sewing-machine plate having an opening corresponding in outline with a button-hole and having attached thereto a swinging clamping-arm with a flange adapted to fit said opening, in combination with a clamp adapted to engage the cloth and having a central opening adapted to receive the flange, whereby the button-hole is accurately centered in the machine.

5. A sewing-machine plate having an opening corresponding in outline with a button-hole, a clamping-arm pivoted thereto and having a flange engaging said opening, in combination with a cloth-clamp having an opening which is adapted to engage said flange, and a cam-lever for clamping down the arm, whereby the goods within said opening is stretched and the button-hole fully opened.

6. A sewing-machine cloth-plate having an elongated opening, a bracket, and a standard, a clamping-arm pivoted to said bracket and having a flange adapted to engage the opening in the cloth-plate, and springs at the sides of said flange, in combination with a cloth-clamp adapted to engage said flange against which said springs bear, a cam-lever adapted to clamp down the arm, and a spring adapted to raise it when the cam-lever is lifted.

In testimony whereof I affix my signature in presence of two witnesses.

FREELAND W. OSTROM.

Witnesses:

A. M. WOOSTER,
C. N. WORTHEN.