

(No Model.)

S. D. TRIPP.

Button Hole Cutting Machine.

No. 235,918.

Patented Dec. 28, 1880.

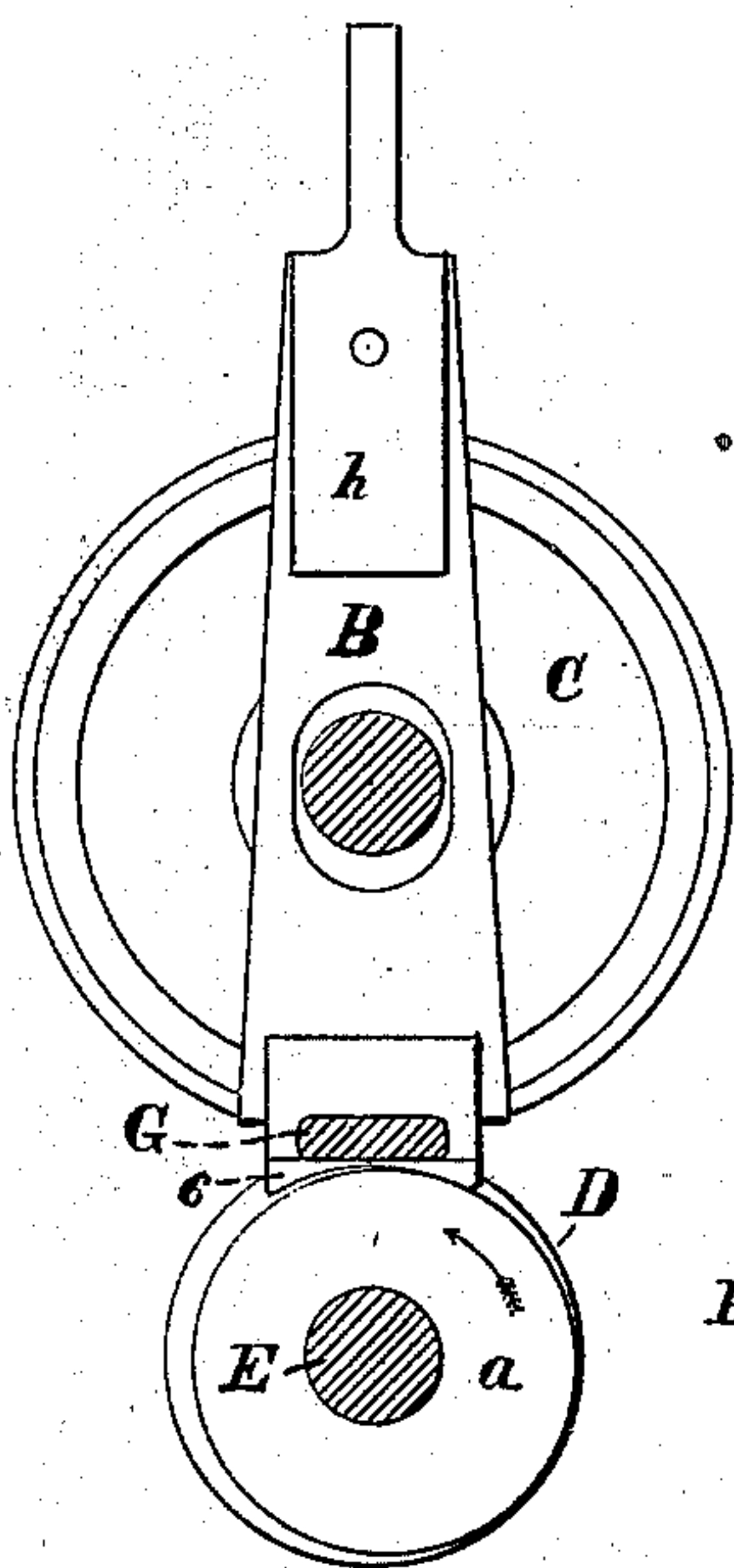
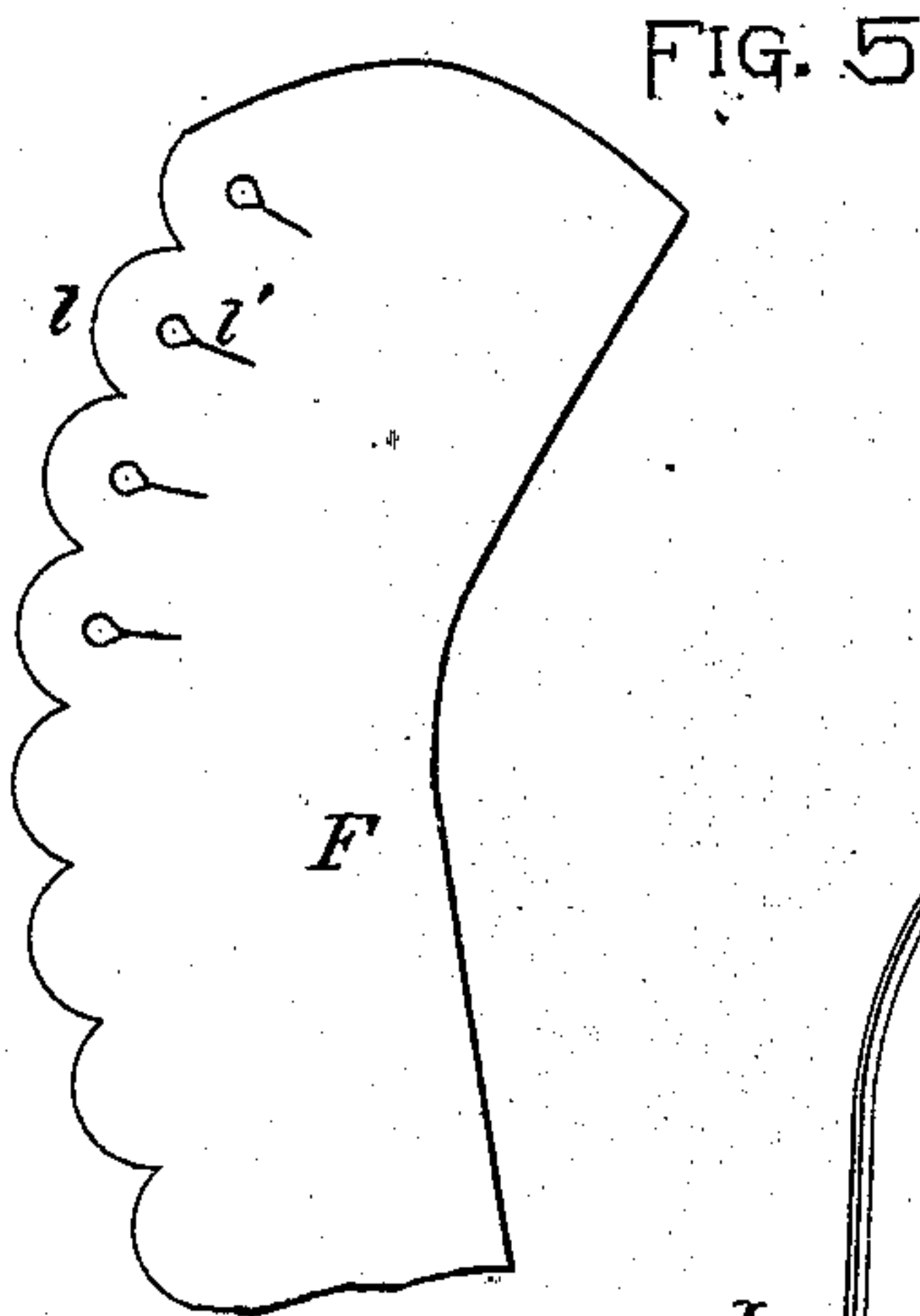
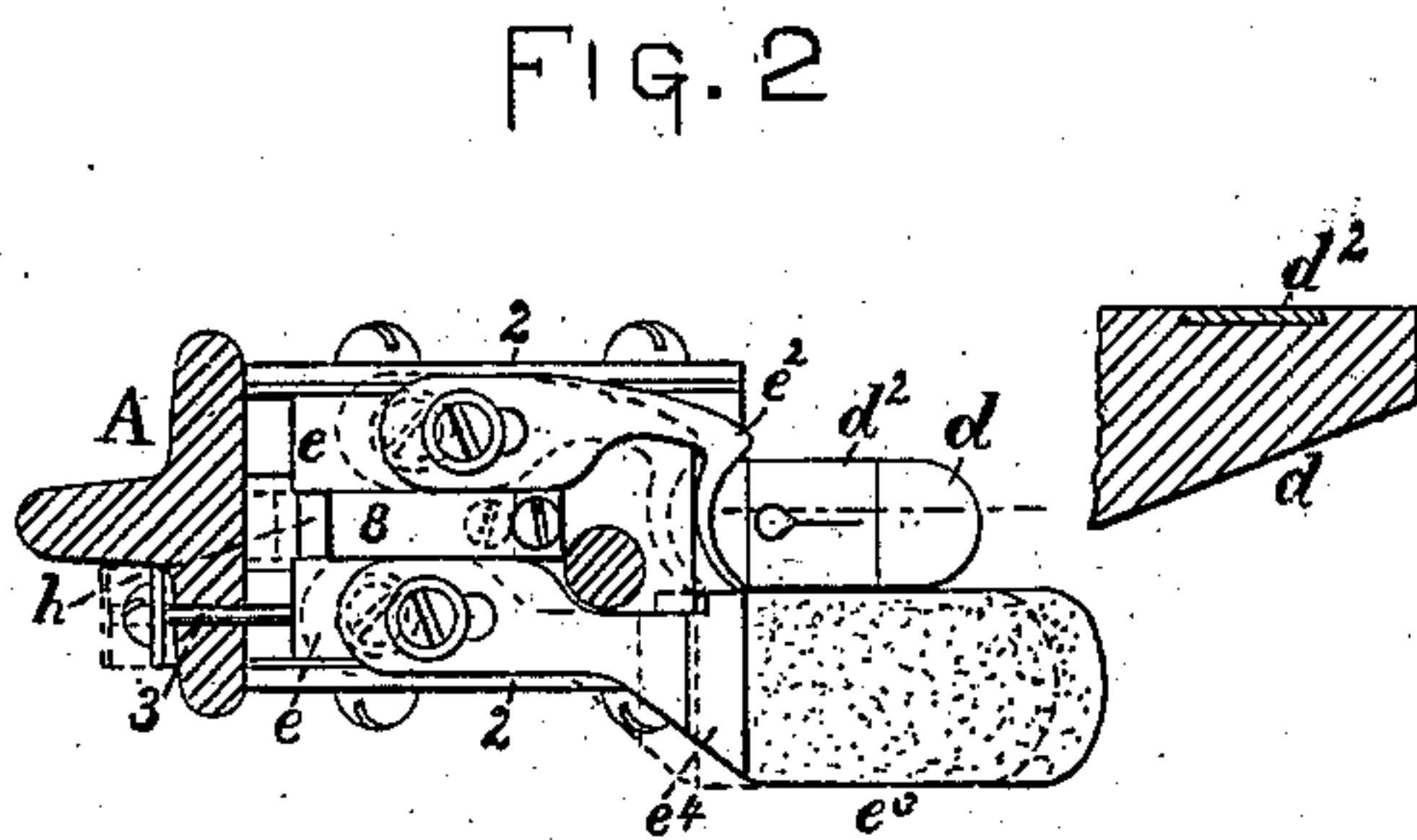
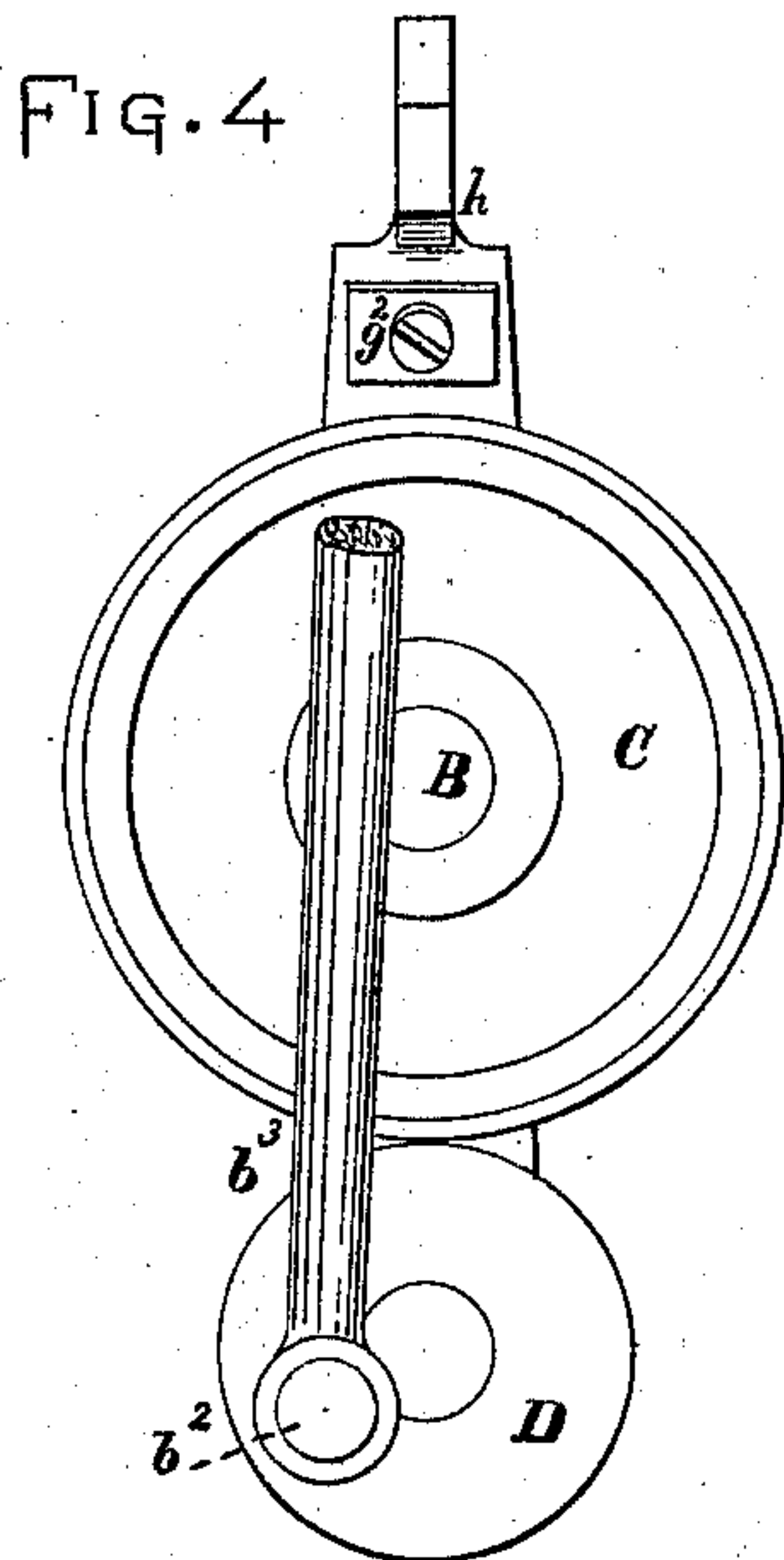
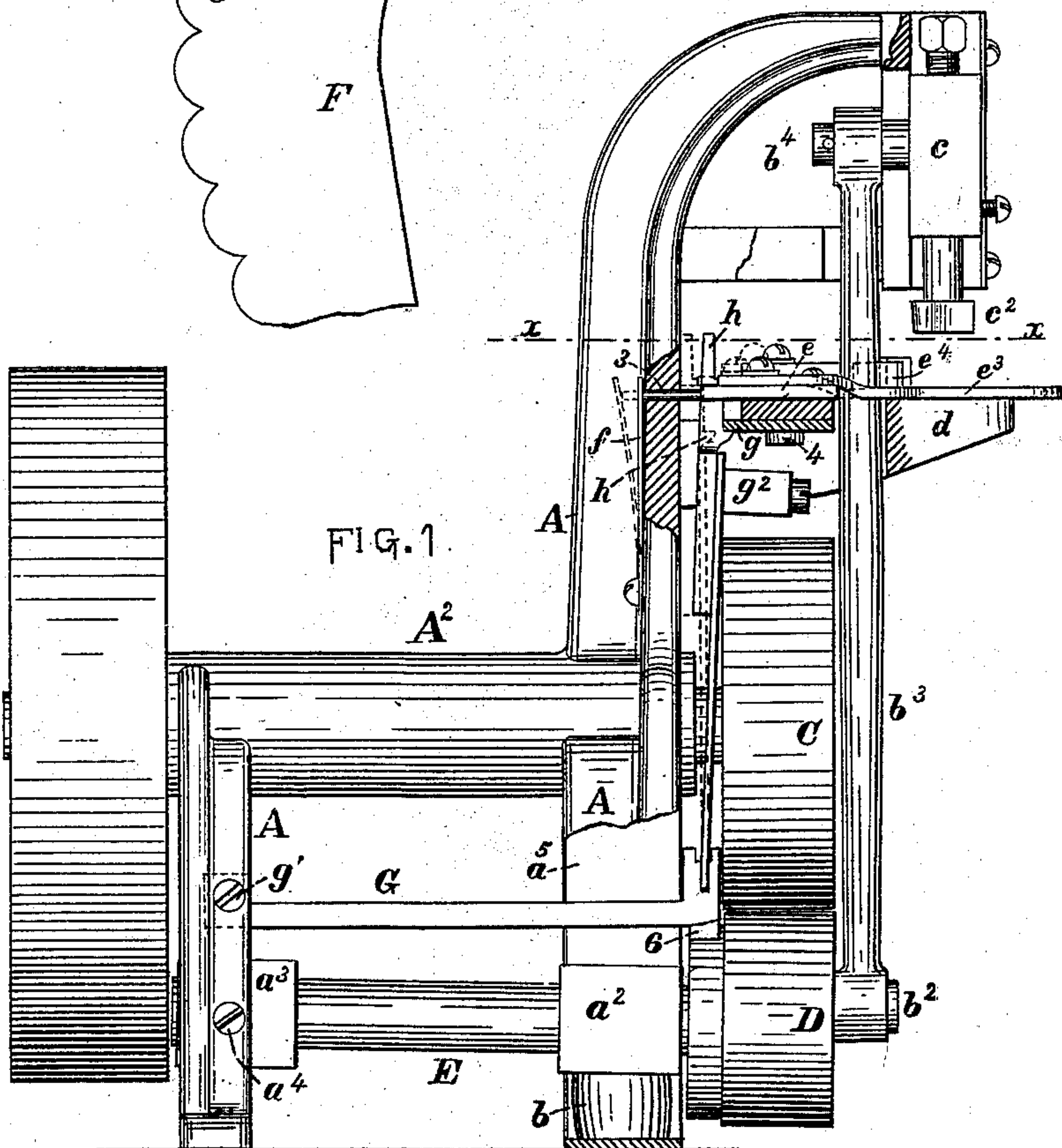


FIG. 3



WITNESSES

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UNITED STATES PATENT OFFICE.

SETH D. TRIPP, OF LYNN, MASSACHUSETTS.

BUTTON-HOLE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 235,918, dated December 28, 1880.

Application filed November 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, SETH D. TRIPP, of Lynn, in the county of Essex and State of Massachusetts, have invented an Improvement in Button-Hole-Cutting Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to mechanism for cutting button-holes in leather or cloth, especially in shoe-work where that part of the shoe to contain the button-holes has its edges scalloped.

In this my invention I employ a reciprocating cutter which is made to descend once and rise, when it is automatically stopped until that part of the piece of leather or cloth next to have a button-hole slit cut into it has been placed in proper position under the cutter. The act of bringing the said piece of leather or cloth into position unlocks the disk which carries the crank for actuating the cutter, and permits it to be forced against a continuously-rotating friction-wheel, which turns the disk and crank once, when the disk is pushed from contact with the said friction-wheel, and its rotation is stopped with the cutter elevated. The scalloped edge of the leather or cloth is first placed against a gage shaped to correspond with the said edge, the said gage being adjustably mounted upon a laterally-movable receiving plate or slide, and then the receiving-plate is moved laterally with the gage until the piece of leather or cloth arrives in correct position, when the locking device which holds the cutter-moving disk and crank-pin is released, permitting a spring to throw the said disk in contact with the rotating friction-wheel to rotate it once.

Figure 1 represents, in side elevation, a button-hole-cutting machine containing my improvement, a part of the frame-work being broken out to more clearly show the working parts, the cutter being elevated. Fig. 2 is a section of the right-hand end of Fig. 1, on the line $x x$, it showing, in plan view, the gage, receiving-plate, and supporting-plate or rest for the material, the small detail at the right of Fig. 2 being a section of the supporting-plate on which the leather or cloth rests when it is being slit by the cutter, the line of section being designated in Fig. 2 by a dotted line. Fig.

3 is a detail representing the rear side of the disk, its locking device, and friction-wheel; Fig. 4, a front elevation thereof, and Fig. 5 a piece of a shoe scalloped and partially provided with button-hole slits as they will be cut by this machine.

One chief object of this invention is to insure a straight slit at the central part of the scallop, said slits being uniformly and evenly placed.

The frame-work A of the machine, of suitable shape to sustain the working parts, has a long tubular bearing, A^2 , to receive the main rotating shaft B of the machine, it having fixed at its front end a friction-wheel, C, preferably covered at its periphery with leather or india-rubber to make its action against the disk D more positive than were metal in contact with metal.

The disk D, having at its rear side an eccentric, a , is fixed upon a shaft, E, mounted in loose boxes or bearings $a^2 a^3$. The box a^3 is pivoted by the screws a^4 , so that the box a^2 may rise and fall in a slot or way, a^5 , made for it in the frame-work. The box a^2 rests on a spring, b , herein shown as composed of india-rubber, and when the spring is permitted to press the box upward the periphery of the disk is forced so closely in contact with the periphery of the friction-wheel C as to insure the rotation of the disk by the friction-wheel. The disk has a crank-pin, b^2 , which receives a link, b^3 , joined at its upper end with a pin, b^4 , projecting from the slide c , it being adjustably connected with the shank of the button-hole cutter c^2 , of the desired size, the rotation of the disk and crank actuating the cutter.

The forward end of the shelf or bracket d , made as a fixed part of the frame-work, is provided with a dovetailed recess (see small detail at right of Fig. 2) to receive the supporting-plate d^2 , upon which the under side of the material F, to be provided with slits, rests, the said plate being removable, so as to readily replace it, when desired. This bracket d has side guides, 2, to receive between them a block or carriage, e , with which are adjustably connected the scallop-gage e^2 and the receiving-plates e^3 , it also having an upright edge-gage, e^4 , in continuation of the edge-gage for the scallop, to be then provided with the

slit. The carriage *e* has a pin, 3, extended backward through the frame-work, (see Fig. 1,) where it is acted upon by a spring, *f*, the tendency of which is to keep the carriage and its attached parts pressed forward into the full-line positions, Figs. 1 and 2.

Attached to the under side of the bracket *d* by a screw, 4, is a dog, *g*, below or under which the ratchet or shouldered part of the locking device *h* hooks, as shown in Fig. 1, whenever the carriage *e* is forward, and the foot 6, preferably of leather, of the weighted lever *G*, pivoted at *g'*, is permitted by the eccentric *a* to fall below the surface of the disk *D*. As the foot descends toward the center of the shaft *E* the weight *g'*, attached to its front side, throws the top of the locking device forward and its shoulder under the dog *g*. After the locking device becomes caught, as shown, which happens immediately after each complete rise of the cutter *c'*, the foot, being held from rising and resting on the eccentric, pushes the shaft and its bearing *a'* down as the eccentric is turned by the disk and friction-wheel then in contact, and as soon as the foot pushes the shaft and disk down sufficiently to make the friction between the wheel *C* and disk *D* less than is required to turn the shaft or to break contact between the disk and wheel *C* the rotation of the shaft *E* is stopped.

The carriage *e* has a finger, 8, (see Fig. 2,) to strike the upper end of the locking device *h* each time the carriage and gages are moved backward into the dotted-line position, Fig. 2, when the spring *b*, being no longer compressed by the locking device, lifts the disk *D* in contact with the friction-wheel *C* and causes the descent of the cutter.

The top of the receiving-plate *e'* is roughened to prevent the material laid thereon from slipping. The scallop *l*, to receive a slit or cut, *l'*, is placed against and within the concaved face of the edge-gage *e'*, and the other or adjacent scallop is placed against the edge-gage *e'*, which may be straight, and which may be more or less in advance of the gage *e'*, according to the curve in which the crowns of the series of scallops are made. (See left of Fig. 5.) The material, having been laid on the receiving-plate, is pinched therein by the operator, the receiving-plate being thin for that purpose, and the leather or cloth and receiving-plate are all moved laterally toward the left, (see Fig. 2,) the under side of the

leather sliding over the rest *d'* until the finger 8 of the carriage, in its backward movement, unlocks the locking device, and the cutter is made to descend, as described.

I claim—

1. In a button-hole-cutting machine, a reciprocating cutter and a rest or support for the material, combined with a laterally-movable carriage and attached gage having a concaved face adapted to receive the scalloped edges of the piece of material to be provided with slits for button-holes.

2. In a button-hole-cutting machine, a reciprocating cutter and a rest or support for the material and a movable carriage provided with an edge-gage for the material, combined with a rotating friction-wheel, a shaft, disk and crank thereon to reciprocate the cutter, and a locking device to intermittently move the said shaft and crank, to free it from the control of the friction-wheel, stop the rotation of the shaft and crank, and hold the cutter at rest, substantially as described.

3. In a machine for cutting button-holes in material having scalloped edges, an edge-gage having a concaved face, combined with an adjacent edge-gage having a straight face, the two gages being adjustable with relation to each other, substantially as and for the purpose described.

4. In a machine for cutting button-holes, a reciprocating cutter and rest for the material being cut, combined with a laterally-movable receiving-plate, on which the material is laid and pressed to hold it on the said plate, and with an attached gage to enable the material which is to be cut to be placed in proper position under the cutter, substantially as described.

5. The constantly-rotating friction-wheel, the disk, its eccentric *a*, crank *b'*, and connecting-rod, and the shaft *E*, held in a vertically-movable box, and a spring to move the shaft and disk and force the latter toward the friction-wheel, combined with a locking device to act on the said eccentric and compel the disk to move away from the friction-wheel, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SETH D. TRIPP.

Witnesses:

G. W. GREGORY,
ARTHUR REYNOLDS.