

(No Model.)

F. E. SCHMIDT.

BUTTON HOLE CUTTER FOR SEWING MACHINES.

No. 369,473.

Patented Sept. 6, 1887.

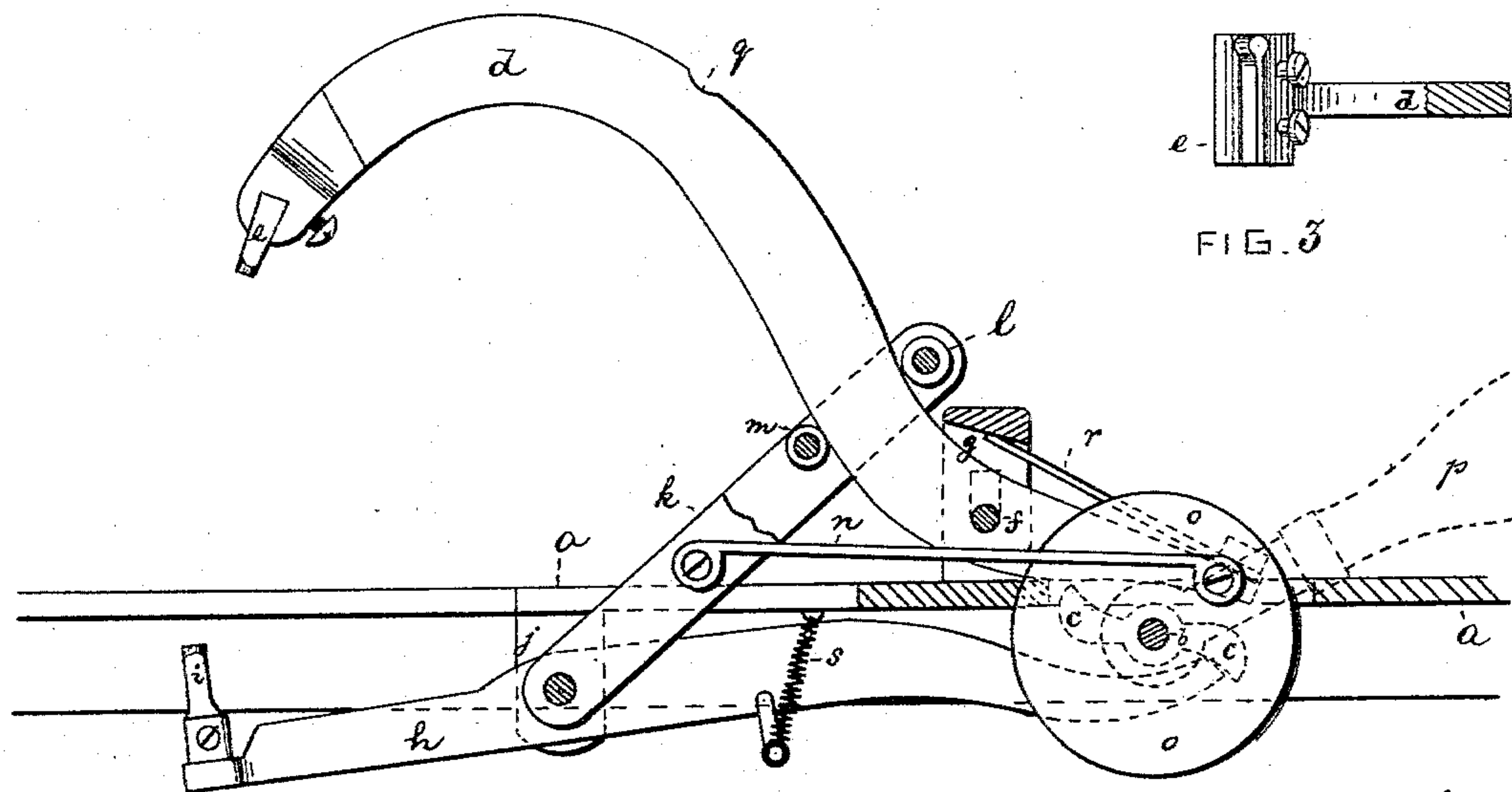


FIG. 1

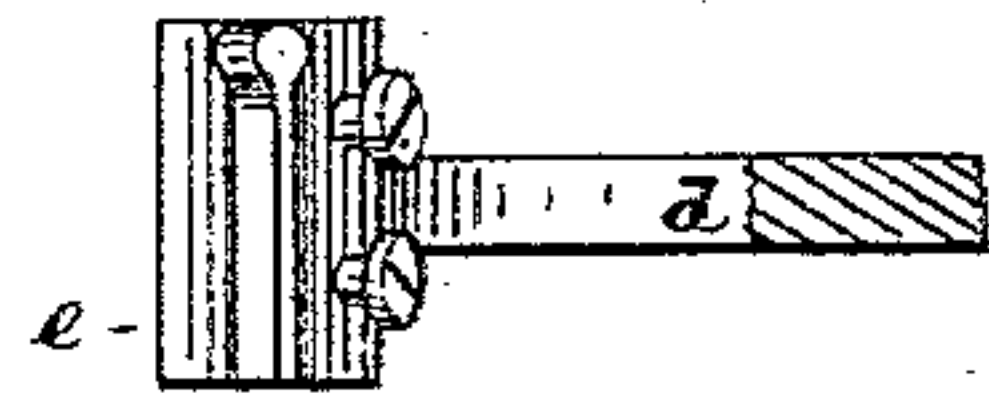


FIG. 3

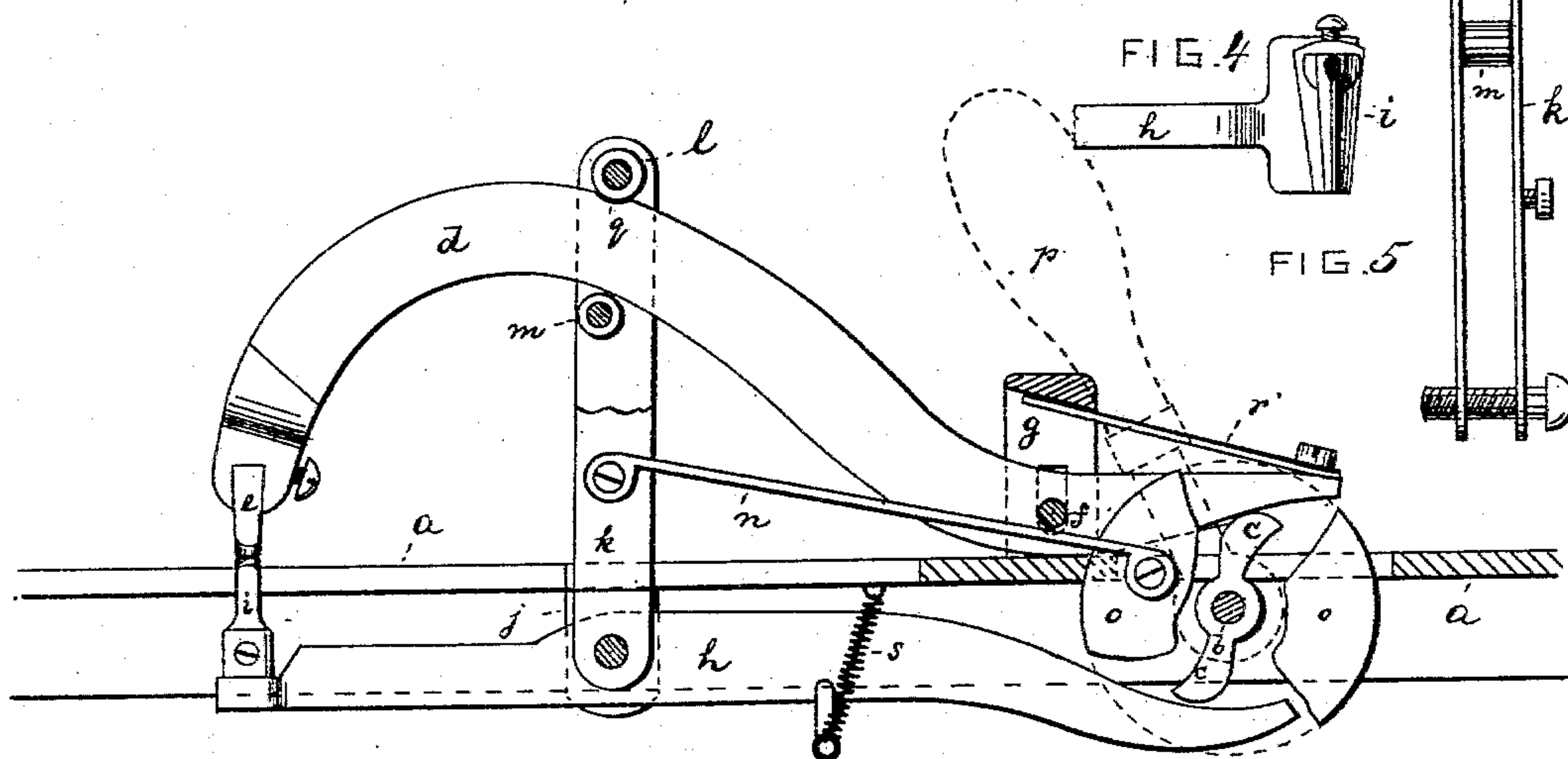


FIG. 2

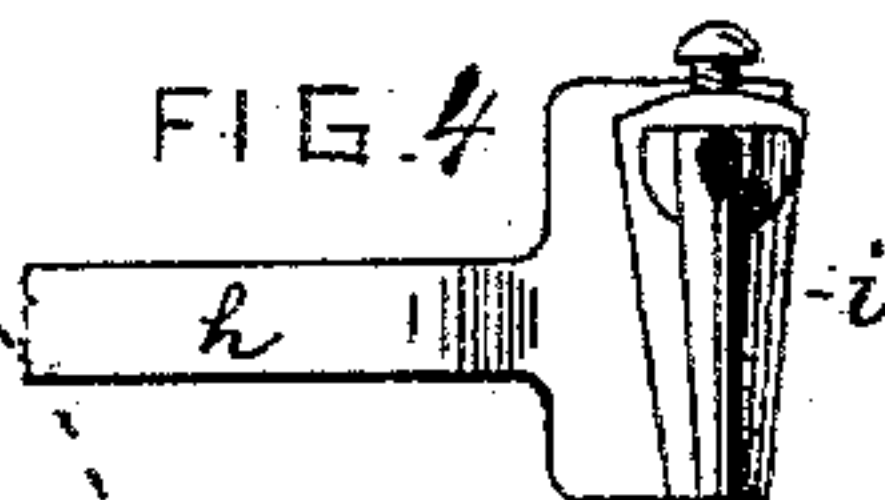
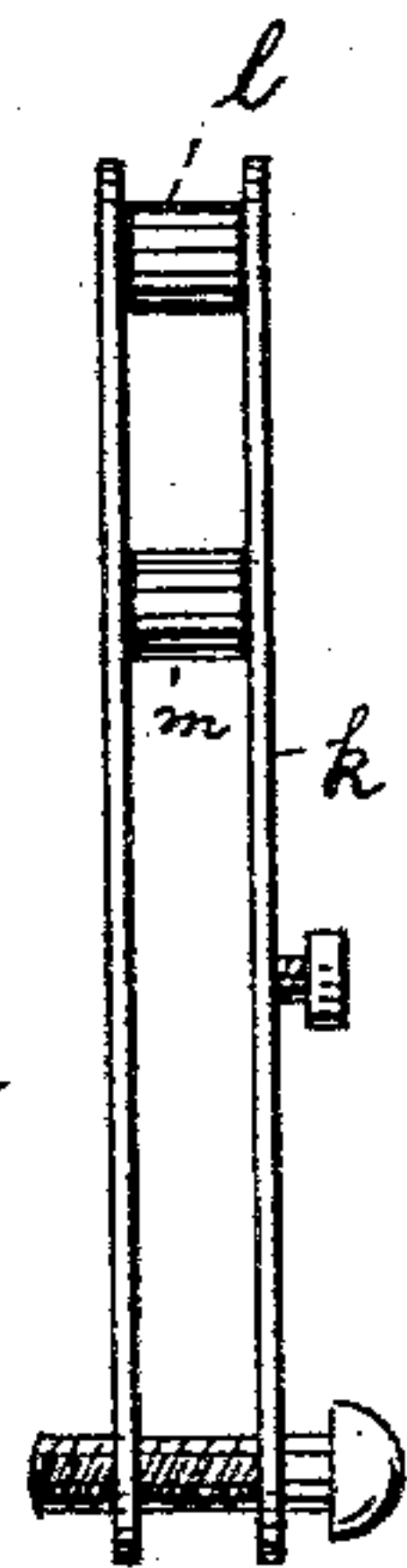


FIG. 4



WITNESSES

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FRIEDRICH E. SCHMIDT, OF BROOKLYN, NEW YORK.

BUTTON-HOLE CUTTER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 369,473, dated September 6, 1887.

Application filed October 20, 1886. Serial No. 216,706. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH E. SCHMIDT, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and Improved Cutter for Button-Hole Sewing-Machines, of which the following specification is a full, clear, and exact description.

This invention relates to an improved device for cutting or punching the button-hole through the cloth before the latter is exposed to the action of the needle. The cutter is composed of two levers pivotally connected to the bed-plate of a button-hole sewing-machine, and operated by a link and also by means of a cam bearing against the rear ends of the levers.

The invention consists in the various features of improvement hereinafter more fully pointed out.

In the accompanying drawings, Figure 1 is a sectional side view of my improved cutter, showing the same opened. Fig. 2 is a similar view, showing it closed. Fig. 3 is a bottom view of the upper cutting-die, and Fig. 4 is a top view of the lower cutting-die. Fig. 5 is a front view of the link or yoke *k*.

The letter *a* represents the bed-plate of a button-hole sewing-machine, beneath which there is hung, in suitable bearings, a transverse shaft, *b*. To this shaft there is secured a cam, *c*, as shown.

d is the curved upper lever that carries cutting-die *e*, and has trunnion *f*, free to slide vertically in bearing-posts *g*, projecting upwardly from bed-plate *a*.

h is the lower lever, carrying cutting-die *i*, and pivoted to a lug, *j*, projecting downward from plate *a*.

The levers *d h* have rearward extensions or tail-pieces, *d' h'*, against which the cam *c* operates. The lever *d* is embraced by a yoke or link, *k*, pivoted at its lower end to lug *j* or other suitable support, and having an upper roller or pin, *l*, and a lower roller or pin, *m*, between which pins the lever is introduced. The link *k* is connected by an arm, *n*, to a disk or arm, *o*, secured to shaft *b* in such a manner that by rocking the shaft backward and forward a corresponding motion will be imparted to the link.

The operation of the parts is as follows:

The cutter being opened as in Fig. 1, the shaft *b* is rocked forward by a handle, *p*. This will cause the link *k* to be swung forward by arm *n*, and the link in turn will, with its upper pin, *l*, bear upon lever *d* and force the same down. When the link *k* is in an upright or nearly upright position, it will fall into a notch, *q*, of lever *d*, and its farther forward motion will cease. The dies *e i* are now brought close above one another without being forced together. On a farther forward revolution of shaft *b* the cam *c* will bear against the tail-pieces *d' h'* of the levers *d h*, and thereby forcibly press the dies together to punch the button-hole out of the piece of interposed cloth. The shaft *b* is now rocked backward by handle *p* to permit a pair of springs, *r s*, secured to levers *d h*, to slightly press them apart. When the shaft has been rocked backward to a certain distance, the link *k* will, by arm *n*, be drawn backward. The lower pin, *m*, of the link, engaging the lower side of lever *d*, will now raise such lever until it arrives at its most upright position.

I claim as my invention—

1. In a button-hole sewing-machine, the combination of a pair of levers carrying the cutting-dies, with a link whose lower extremity is pivoted to the bed of the machine and whose upper extremity loosely engages the upper lever, and means for vibrating the said link upon its pivotal point, and a cam acting upon both levers, all being so constructed that the link and the cam operate successively to cause an approach of the dies, substantially as specified.

2. The combination, in a button-hole sewing-machine, of a pair of levers carrying the cutting-dies and pivoted to suitable supports, with an oscillating link or yoke, whose lower extremity is pivoted to the bed of the machine and whose upper extremity loosely engages the upper lever, and means for vibrating the said link upon its pivotal point, and a cam placed between the levers and bearing upon rearward extensions of the same, substantially as specified.

3. The combination, in a button-hole sewing-machine, of a pair of levers carrying the cutting-dies, with a link whose lower extremity

is pivoted to the bed of the machine and whose upper extremity loosely engages the upper and lower edges of the upper lever, and means for vibrating the said link upon its pivotal point, and a cam bearing upon rearward extensions of the levers, substantially as specified.

4. The combination, in a button-hole sewing-machine, of an upper curved and notched lever having a sliding bearing and carrying a cutting-die, with a lower lever carrying a cut-

ting-die, and with a link whose lower extremity is pivoted to the bed of the machine and whose upper extremity loosely engages the upper lever, and means for vibrating the said link upon its pivotal point, and with a cam engaging both levers, substantially as specified.

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Witnesses:

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