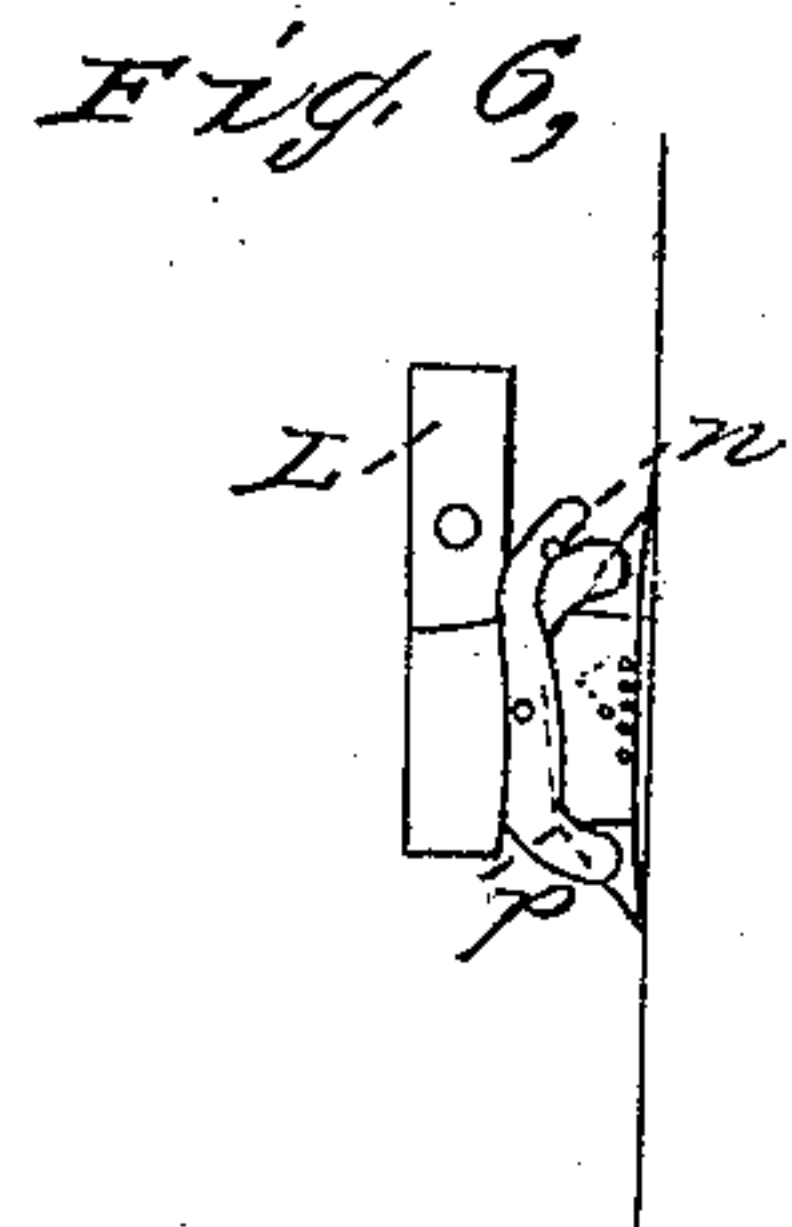
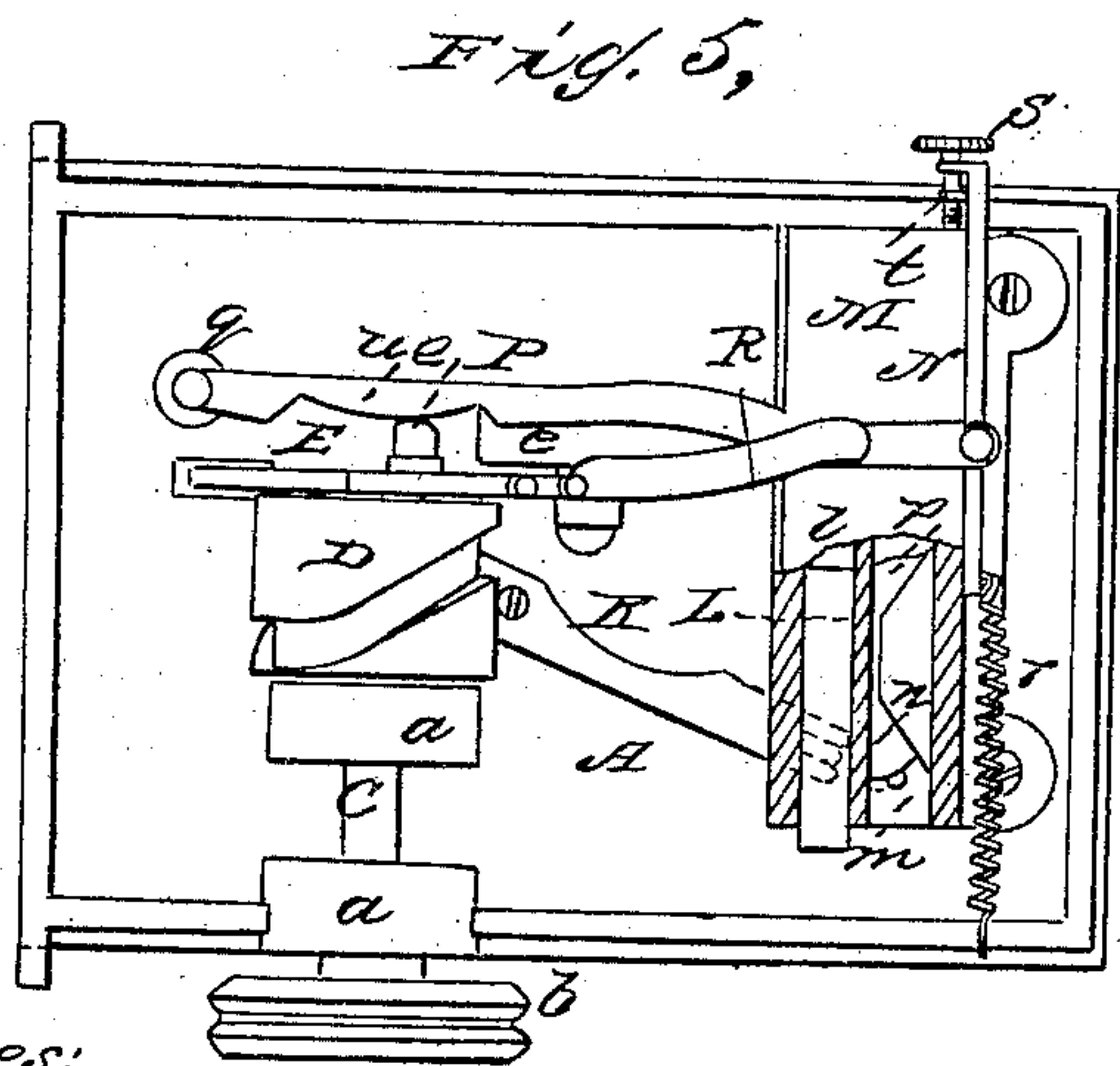
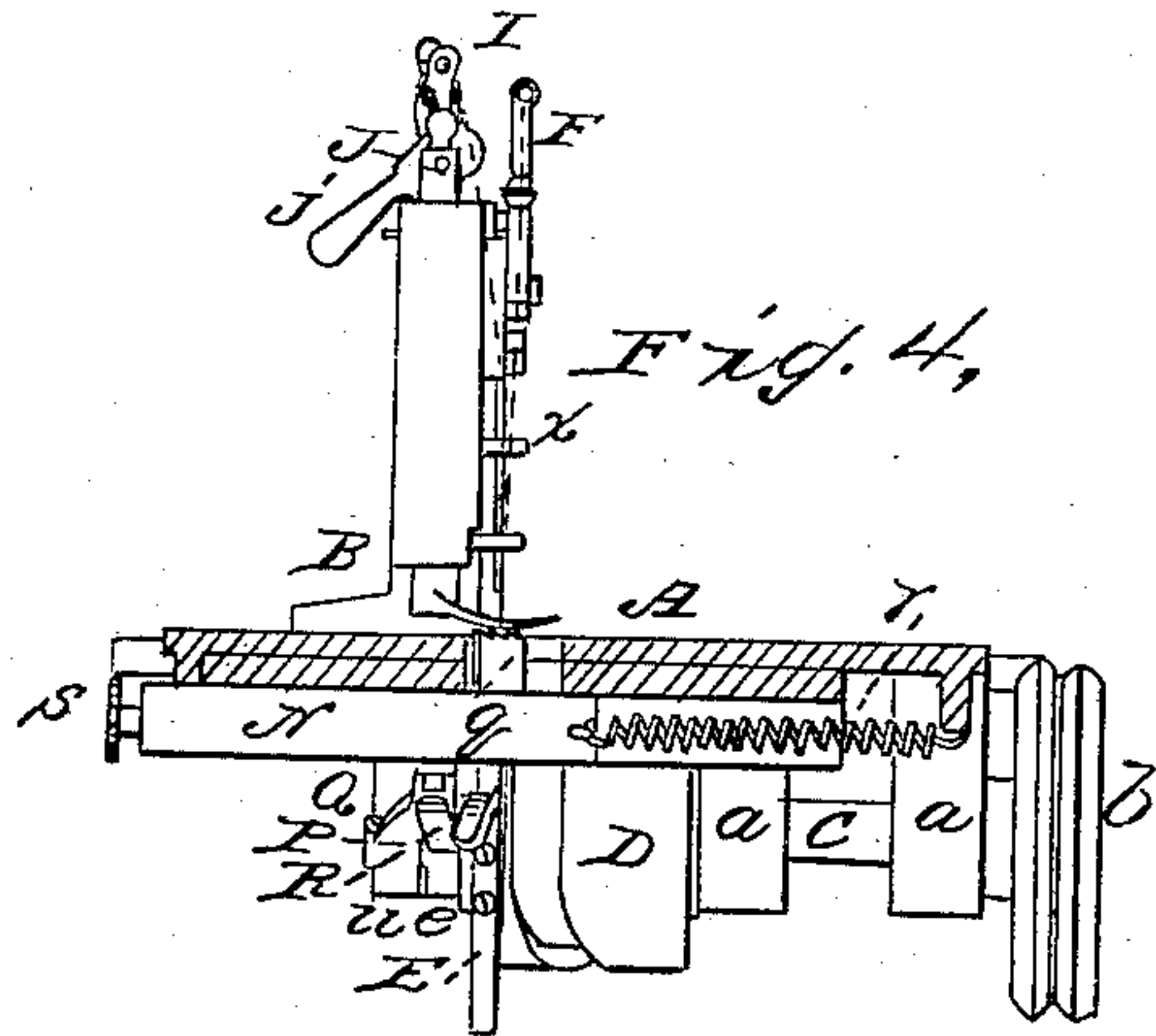
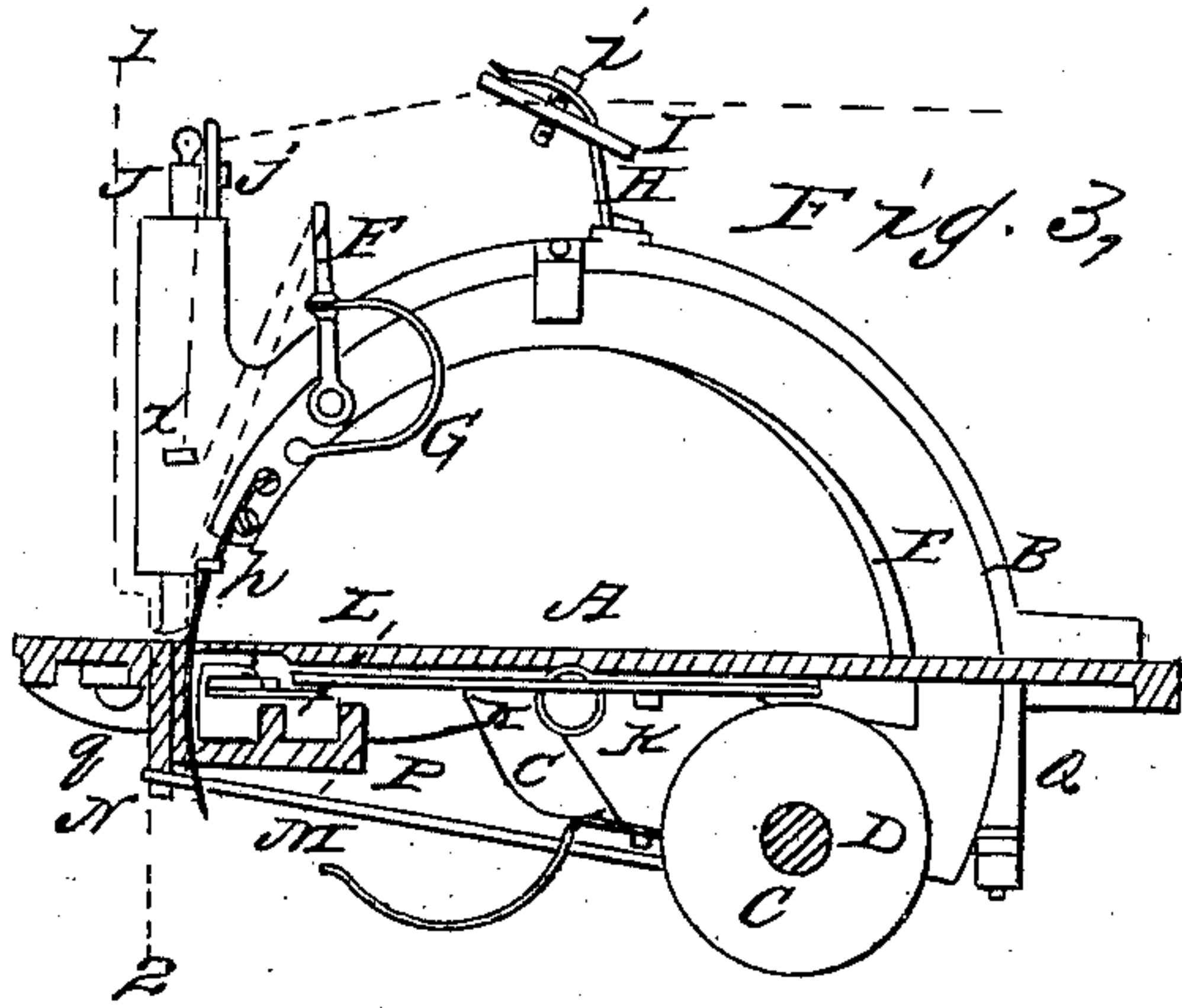
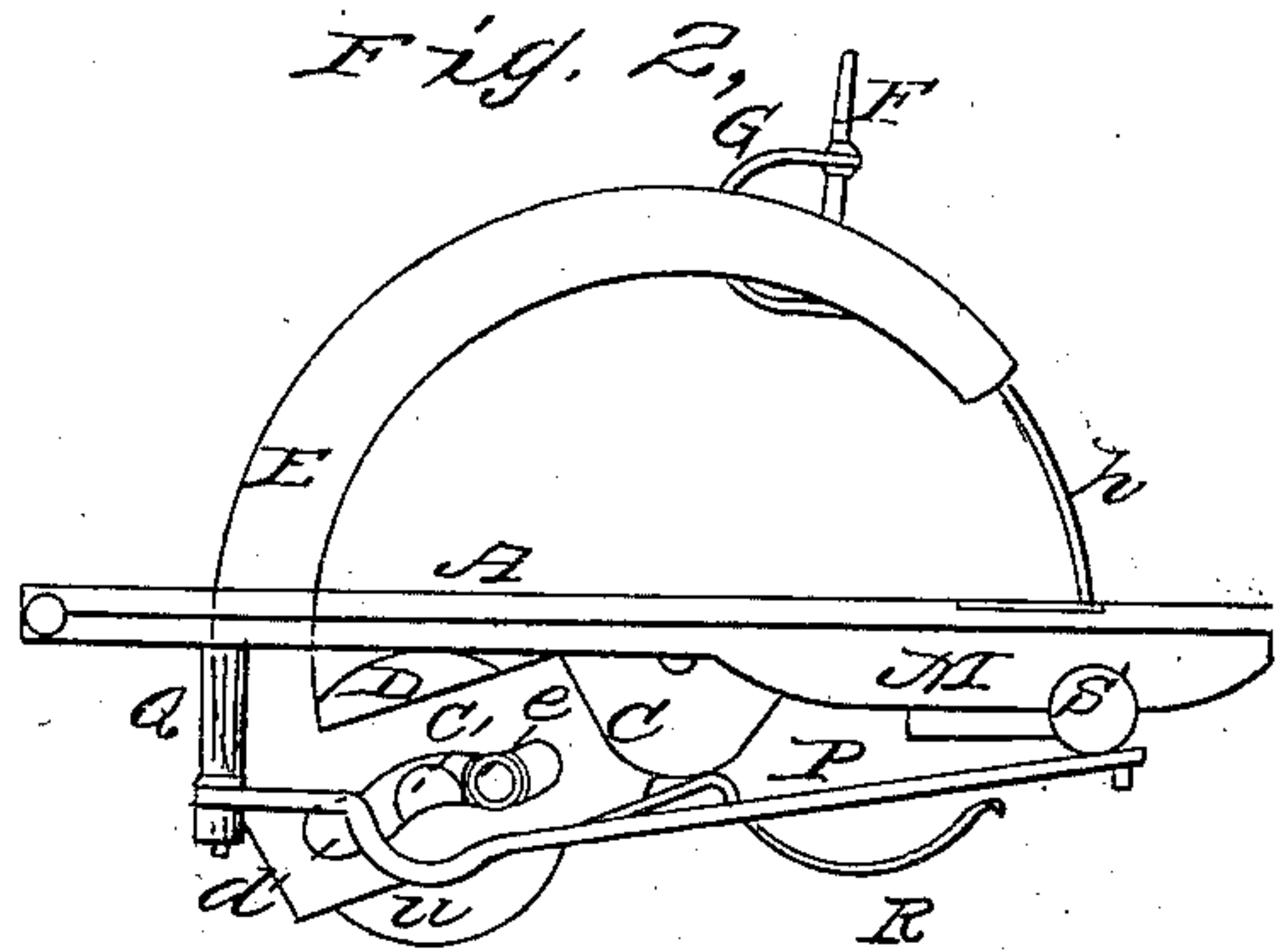
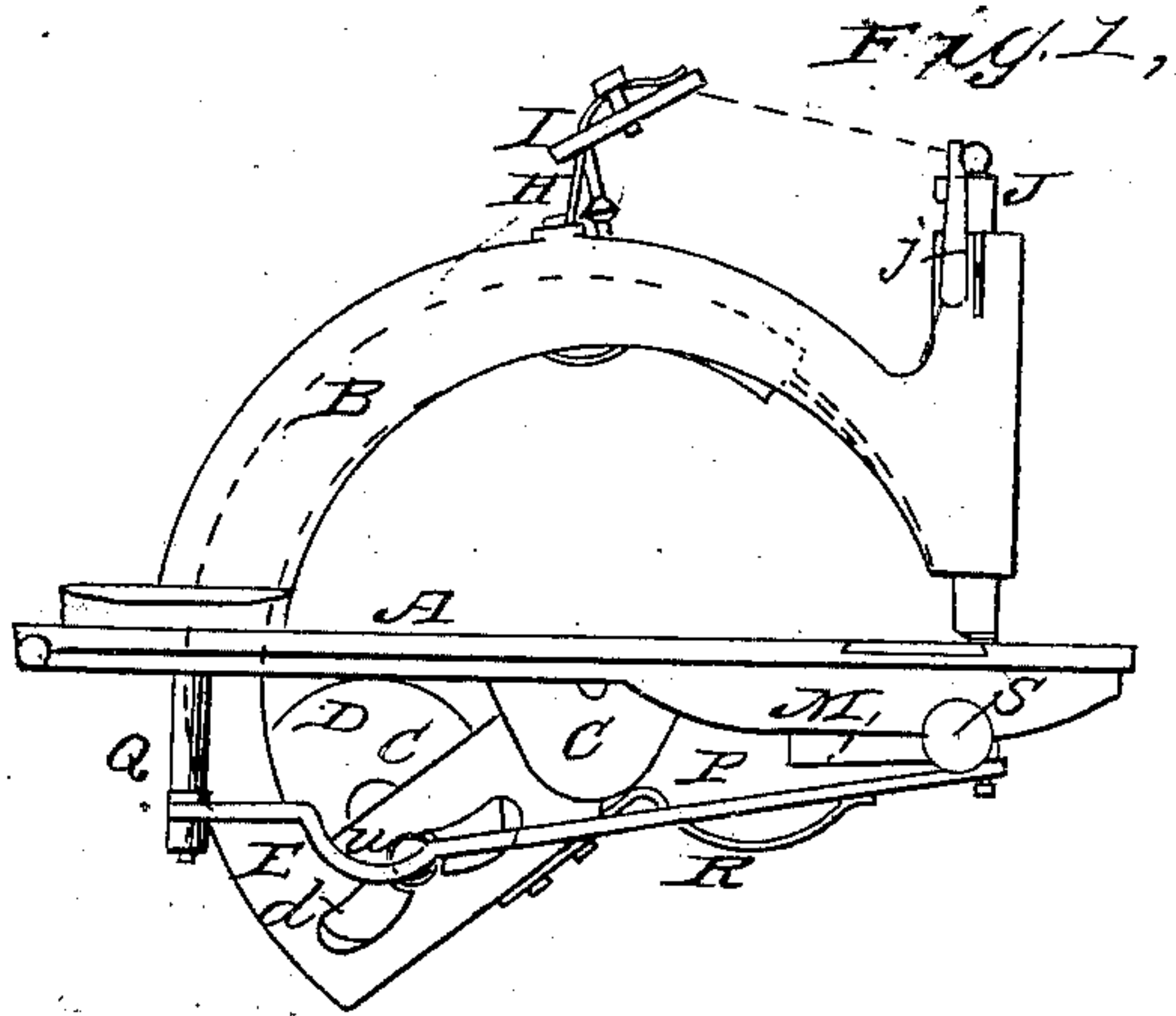


A. H. JONES.
Sewing Machine.

No. 27,546.

Patented March 20, 1860.



Witnesses:
Jung Howson
Horace Lee

Inventor:
Abram H. Jones

UNITED STATES PATENT OFFICE.

ABRAM H. JONES, OF FALLSINGTON, PENNSYLVANIA.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 27,546, dated March 20, 1860.

To all whom it may concern:

Be it known that I, ABRAM H. JONES, of Fallsington, Bucks county, Pennsylvania, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of a shuttle-driver of the peculiar construction described hereinafter, whereby the shuttle may be released from and replaced in a position to be acted upon by the said driver.

In order to enable others skilled in this class of machinery to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a side view of my improved sewing-machine; Fig. 2, the same with part of the frame-work removed and the working parts in a position differing from that illustrated in Fig. 1; Fig. 3, a sectional view of the machine in a position the reverse of that shown in Figs. 1 and 2; Fig. 4, a transverse sectional elevation on the line 1 2, Fig. 3; Fig. 5, an inverted plan view of the machine with a portion of the same shown in section, and Fig. 6 a detached view of the shuttle and shuttle-driver.

Similar letters refer to similar parts throughout the several views.

A is the base of the machine; B, the stationary arm secured to the same; C, the driving-shaft turning in projections *a a* on the under side of the base, and provided with a suitable driving-pulley, *b*, as well as with a scroll cam-wheel, D, for operating the shuttle-arm.

E is the needle-arm, hung to a projection, *c*, on the base, and having a slot, *d*, of peculiar form, into which fits a roller hung loosely on a pin, *e*, the latter being attached to the face of the cam-wheel D at an appropriate distance from its center. This needle-arm is guided laterally by a plate, *f*, attached to the stationary arm B, and is provided with an arm, F, which is controlled by a spring, G, a suitable curved needle, *h*, being attached to the outer end of the needle-arm.

A spring, H, is attached to the top of the stationary arm B, and to this is secured a bar,

I, by means of a screw, *i*, the form and relative position of the spring and the bar being best observed on reference to Figs. 1 and 3.

The end of the stationary arm has the usual spring-pressure bars, J, furnished at the bottom with the ordinary pad, and at the top with an arm, *j*, by operating which the said pressure-pad may be raised and lowered at pleasure.

K is the shuttle-arm, hung to a pin, *k*, on the under side of the base A, a projection on the end of the short arm fitting into the groove of the cam-wheel D, and the forked end of the long arm of the same lever catching over a pin on the bar L of the shuttle-carrier, which slides in a race, *l*, adjacent and parallel to the race *m* of the shuttle, both races being formed in one plate, M, attached to the under side of the base A. The shuttle is pointed at both ends, and the shuttle-driver, which is best observed on reference to Fig. 6, has a permanent projection, *n*, on the slide L for catching against a shoulder near one end of the shuttle, an arm, *p*, being hung to a pin on the slide in such a manner as to be readily vibrated on the said pin, so that its bent end may be caused to strike against the shoulder of the shuttles opposite to the shoulder against which the projection *n* strikes, and so that it may be turned laterally free from the said shoulder, and thus allow the shuttle to be readily withdrawn from contact with the driver and from the race, and as readily replaced. The shuttle is of the ordinary hollow-case construction, and is provided with the usual spool and any suitable appliances for imparting the necessary tension to the spool-thread.

N is the feed-bar, having a projection, *q*, with a serrated upper edge passing through an opening in the base A, directly under the pressure-pad, and being connected at one end to a permanent projection on the base by means of a spiral spring, *r*, the opposite forked end sliding on a pin, *s*, which screws into the base or into the plate M, and which has a collar, *t*, which limits the inward movement of the bar caused by the spiral spring *r*.

The outward movement of the bar is caused by the pin *e* on the face of the cam-wheel D, the end of the pin striking against the inclined plane *u* of the arm P, which is hung to a pin, Q, on the under side of the base A, and the outer end of which is loosely connected to

the feed-bar N. The upward movement of the latter is caused by a spring, R, attached to the needle-arm E, the end of the spring striking against the under side of the arm P.

The needle-thread passes from a spool which may be connected to any stationary part of the machine, along the side of the bar I, under the latter, upward through a hole in the bar, and downward through another hole, the bent end of the spring bearing on that portion of the thread which passes from one hole to the other on the top of the bar. From the latter the thread passes to an eye in the lever *j*, by which the pressure-bar is raised, thence through an eye, *x*, on the end of the stationary arm B, and thence through an eye in the spring-arm F to the eye of the needle.

The slot *d* is of such a form and is so arranged in respect to the center of the driving-shaft and its pin *e*, as well as in respect to the center of vibration of the needle-arm, that the latter will make one complete vibration during one complete revolution of the driving-shaft, the vibration being always in the same direction, no matter whether the driving-shaft be turned to the right or to the left. In other words, should the direction of the motion of the driving-shaft be accidentally changed, the

regular vibration of the needle-arm at the proper intervals and in the proper direction will not be interrupted.

The operation of the feed-bar and its action on the cloth, as well as the mode of regulating the extent of its movement by the adjusting-screw *s*, will be readily understood by those familiar with sewing-machines without further description.

It will also be seen without further explanation that by moving the arm *p* the shuttle may be readily released from the driver and as easily replaced in connection with the same.

I claim as my invention and desire to secure by Letters Patent—

The reciprocating slide L, its permanent projection *n*, and the movable bent arm *p*, in combination with and arranged in respect to the double-pointed shuttle, as and for the purpose herein set forth.

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

ABRAM H. JONES.

Witnesses:

HENRY HOWSON,

CHARLES D. FREEMAN.