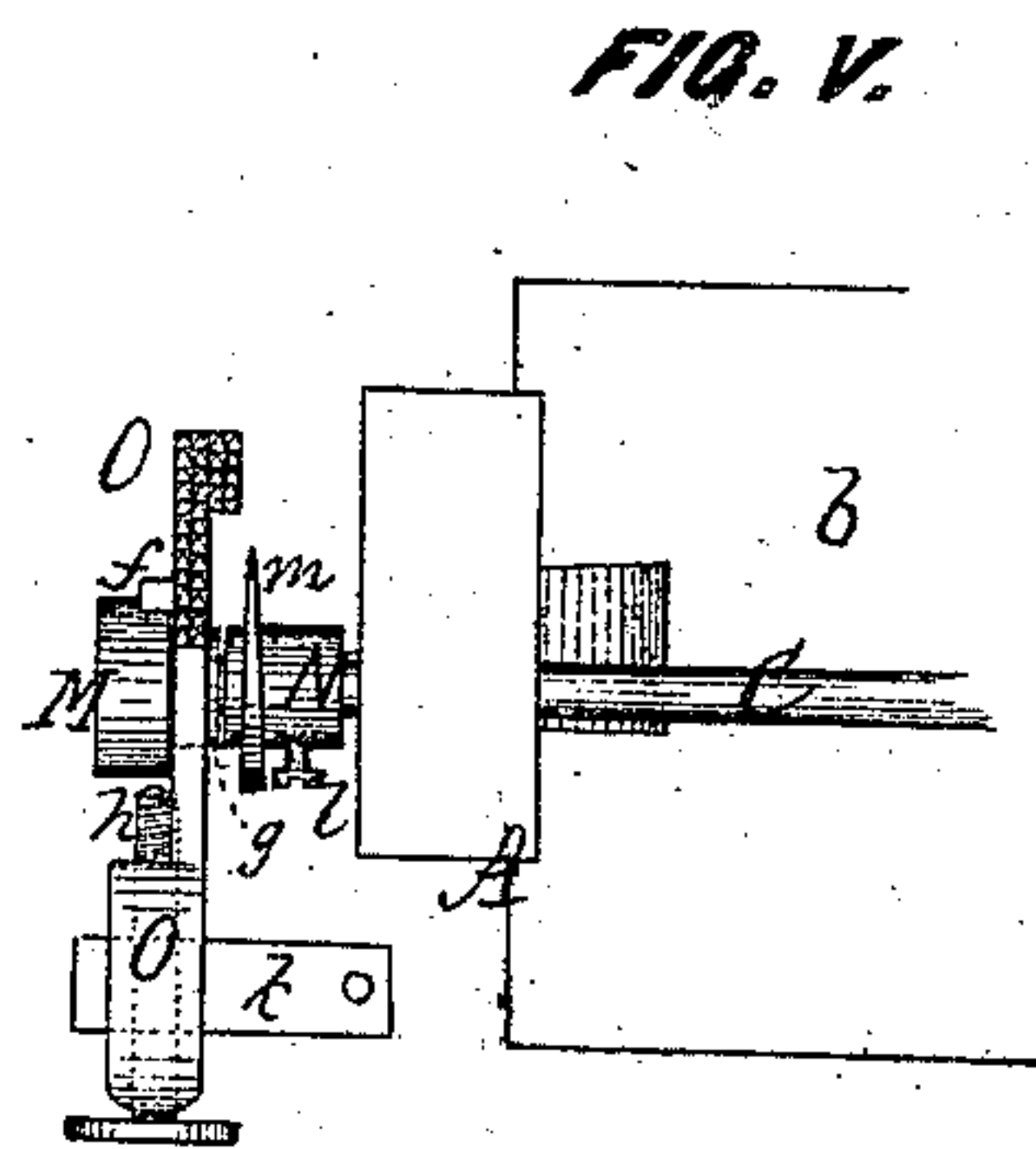
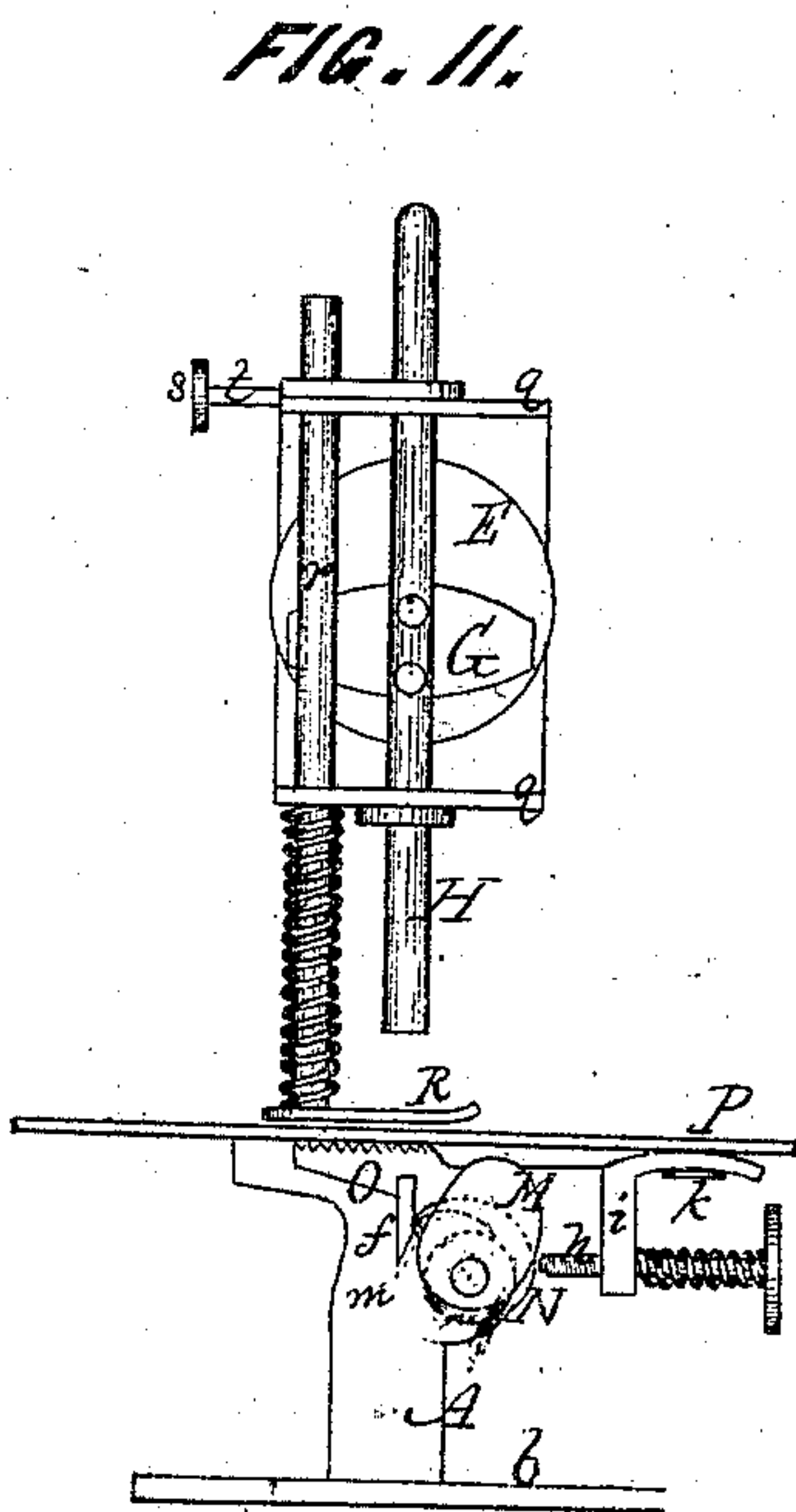
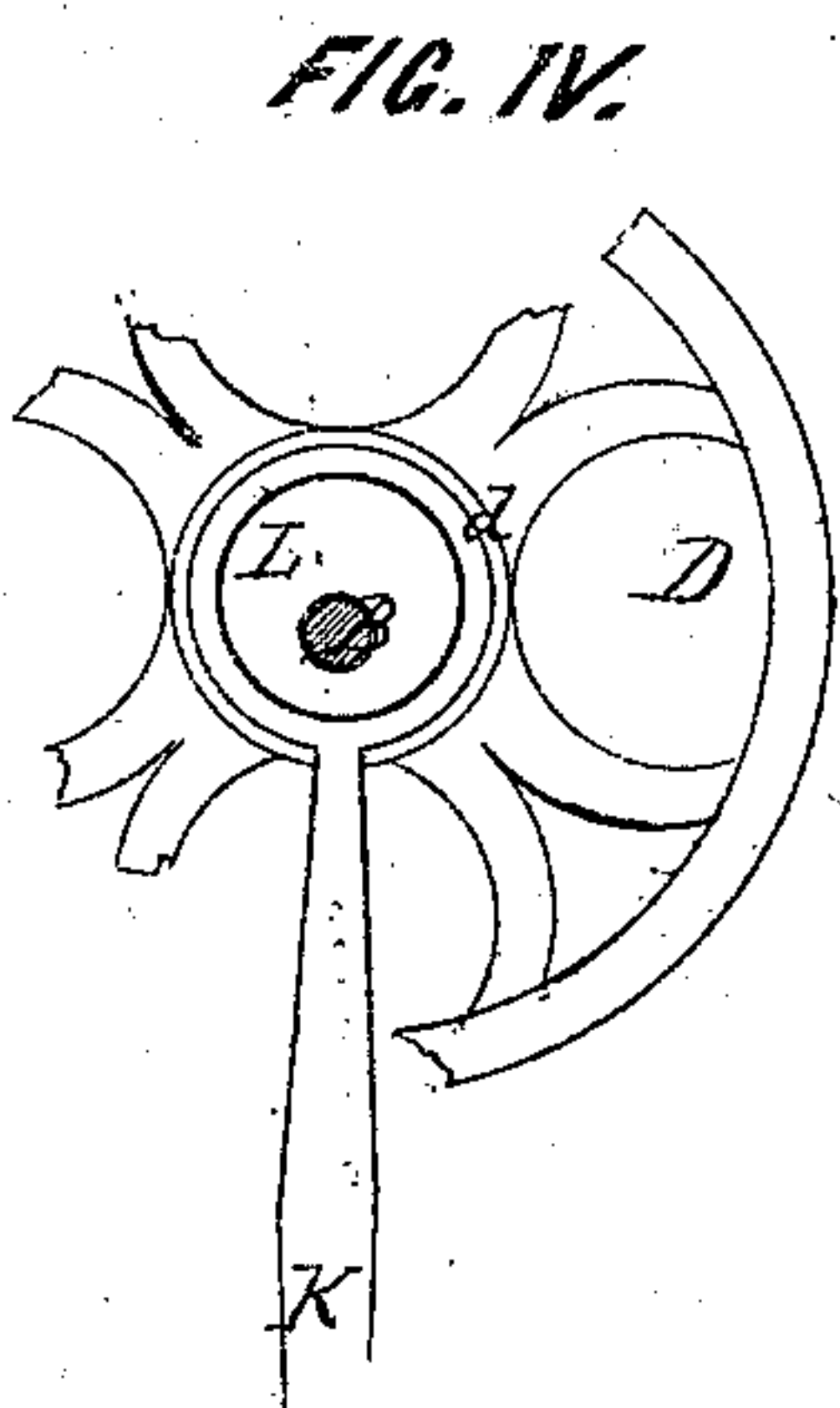
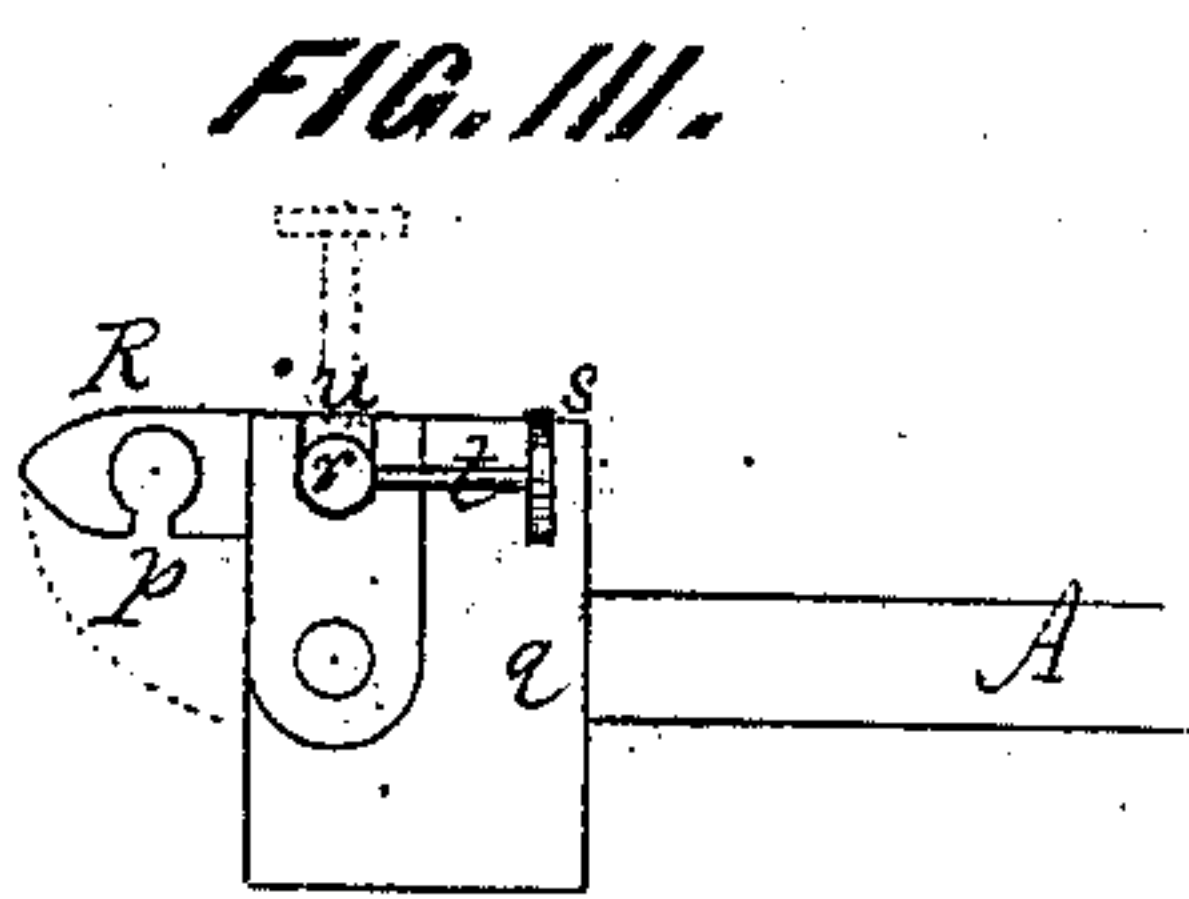
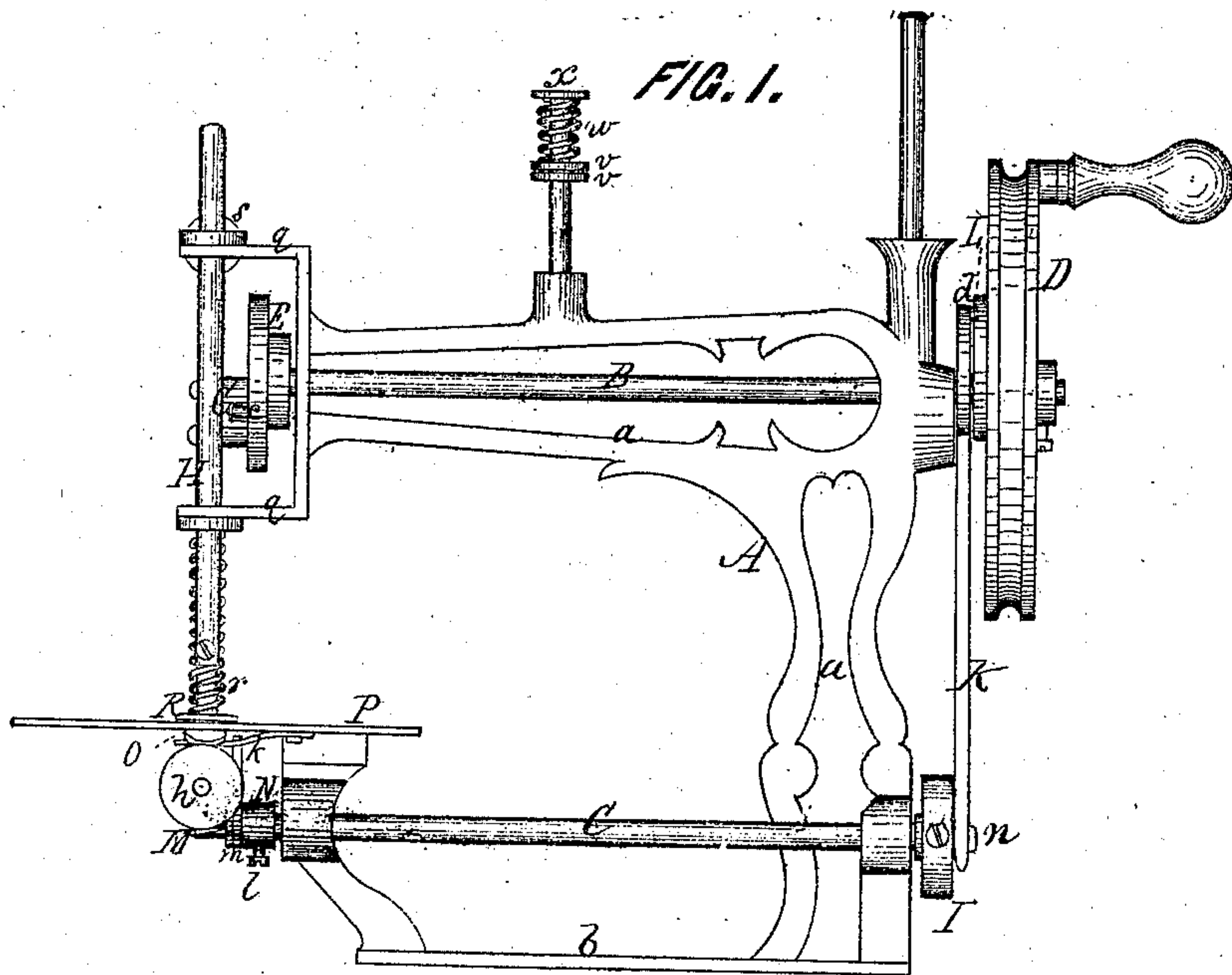


A. Porter.
Sewing Machine.
No. 99704. *Patented Feb 8. 1870*



WITNESSES.

Chas. F. Spencer
Geo. W. Matt

Alvgo Porter,
By J. F. & Co.,
attys.

United States Patent Office.

ALONZO PORTER, OF ROCHESTER, NEW YORK, ASSIGNOR TO HIMSELF, ELISHA G. MARSHALL, AND SARAH R. YOUNG, OF SAME PLACE.

Letters Patent No. 99,704, dated February 8, 1870.

IMPROVEMENT IN SEWING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, ALONZO PORTER, assignor to myself, ELISHA G. MARSHALL, and SARAH R. YOUNG, all of the city of Rochester, county of Monroe, and State of New York, have invented a certain new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved machine.

Figure 2, a similar view, but at right angles to fig. 1.

Figure 3, a top view of the front end of the frame, showing the connection and attachment of the cloth-presser.

Figure 4, a view, showing the cam of the driving-wheel, and the connection of the pitman-rod therewith.

Figure 5, a diagram, showing a plan of the parts connected with the feed-bar and needle.

Like letters of reference indicate corresponding parts in all the figures.

My invention consist in the arrangement of the operating-parts, as hereinafter described.

In the drawings—

A indicates the frame, having open-work bars or arms, *a a*, and a base-plate, *b*, for attaching to a table.

Two shafts, B C, are mounted in the frame, the upper serving to give motion to the needle, while the lower gives motion to the feed-mechanism, and also the hook which holds the loop of thread while the needle goes up.

At one end of the upper shaft is mounted a crank-wheel, D, having, preferably, a groove in its periphery for the reception of a band, which connects with a motive-power below, in the ordinary manner.

At the opposite end of the upper shaft is situated a crank-head, E, the pin *e* of which rests in a slotted bar, G, attached rigidly to the needle-bar H. The revolutions of the crank-head give the up-and-down motion to the needle-bar.

The outer end of the lower shaft has a crank-head, I, with the pin of which connects a pitman, K, passing upward, and having a loop, *d*, at the top, which rests on an eccentric, L, which forms a solid part of the driving-wheel D. Every revolution of the latter imparts simply a rocking motion to the crank-head I, and, consequently, to the shaft C.

To the opposite end of the lower shaft is secured a cam, M, and hook-head N.

At every forward motion of the cam, it strikes lug *f* of the feed-bar O, thereby causing it to throw the cloth along upon cloth-plate P.

The stem of the feed-bar rests upon an eccentric surface, *g*, of the cam, which, in the forward motion, elevates the feed-bar sufficiently to make it hold in the cloth.

The reverse motion of the feed-bar is produced by a screw, *h*, which passes through a bearing, *i*, of the bar,

in such a position as to be struck by the cam M, in its back action. By turning this screw up, more or less, it is apparent that the throw of the feed-bar will be changed, and, consequently, the length of the stitches adjusted as desired.

The rear end of the feed-bar is held up by a spring, *k*, which allows, by its elasticity, the necessary motions of the bar.

The hook-head N is in the form of a collar, which simply slips on the shaft, and is held thereto, in any position, by a set-screw, *l*. It is provided with a hook, *m*, which is thrown forward by the rocking of the shaft, and its adjustment and action are such, relatively to the needle, that when the needle goes up the hook catches the thread in the needle, and holds it, thereby forming a loop through which the needle passes in its next descent. This forms a lock-stitch, with a single thread, that will not unravel under ordinary circumstances.

The crank I is provided with a curved slot, in which the pin *n*, that connects with the pitman K, is secured, and may be adjusted to properly time the operation of the parts.

The cloth presser-foot R has slot, *p*, through which the needle passes; and this slot is made open through the side, to allow the foot to swing around free of the needle, which is necessary in threading, since the eye of the needle does not come high enough to free from the presser in its ordinary position.

The shaft *r* of the presser turns free in bearings *q q* of the frame; and, at the upper end, it has a roller, *s*, whose shaft, *t*, rests in an open slot, *u*, of the upper bearing. This keeps it in position in working.

When it is desired to raise the presser, to turn it around, the roller *s* strikes on top the bearing *q*, the shaft *t*, at the same time, freeing from slot *u*, as in fig. 3.

The tension-device, for holding the thread, consists simply of two disks, *v v*, one being fast and the other loose, and a spring and nut, *w x*, pressing down upon the loose one. The thread, passing between the disks, receives any desired amount of friction, by turning down the nut.

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

The rotating shaft B, provided with the mechanism for operating the needle-bar and needle, the fly-wheel D, having the eccentric L cast with it in one piece, the pitman K, the adjustable stud *n*, the crank-head I having the curved slot, the working-shaft C, the adjustable looper *m*, the feed-operating cam M and feeding-dog O, and its adjusting and supporting-devices, and the presser, its pin, *t*, and aid roller, *s*, when all are constructed and arranged as described.

In witness whereof, I have hereunto signed my name, in the presence of two subscribing witnesses.

Witnesses:

ALONZO PORTER.

R. F. OSGOOD,

CHAS. F. SPENCER.