

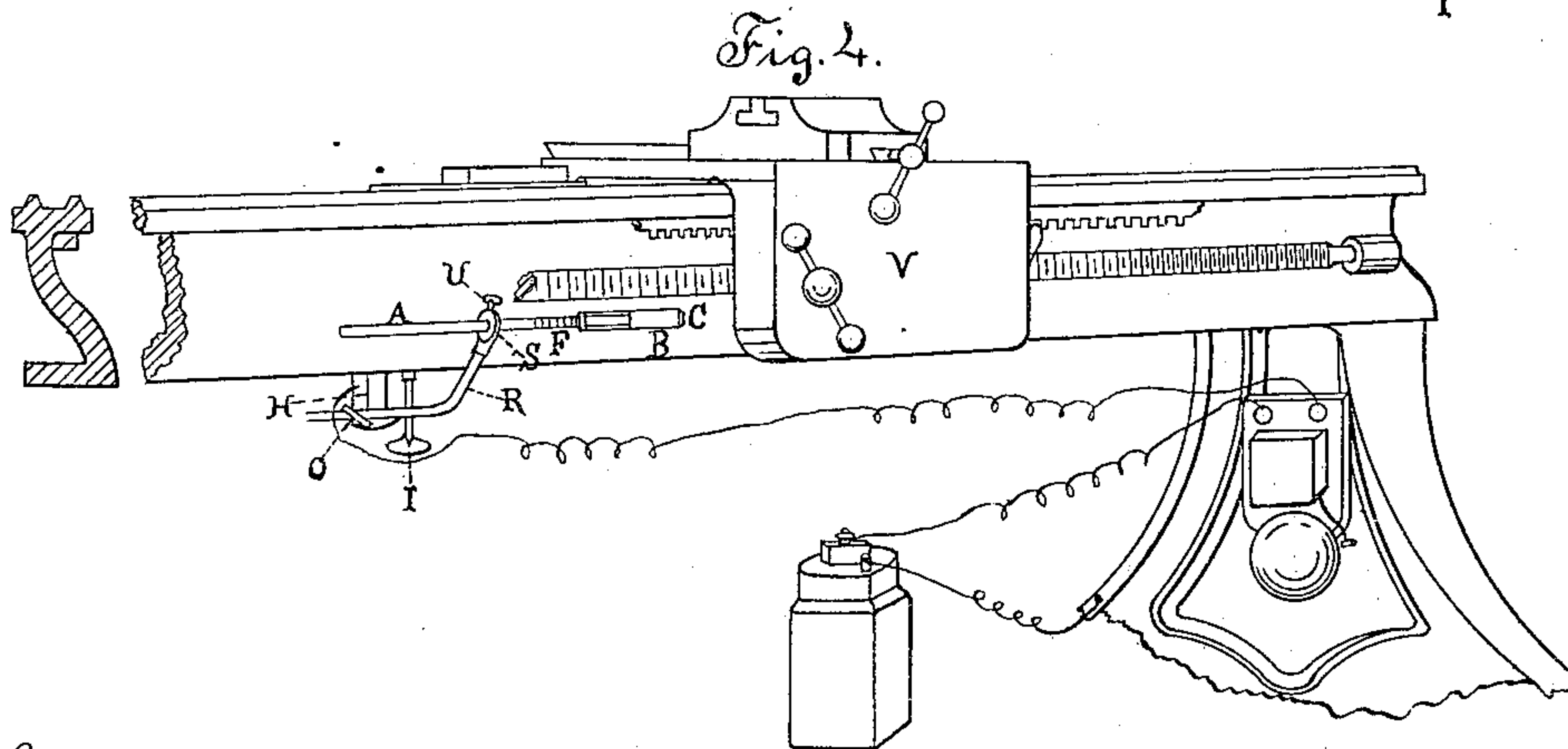
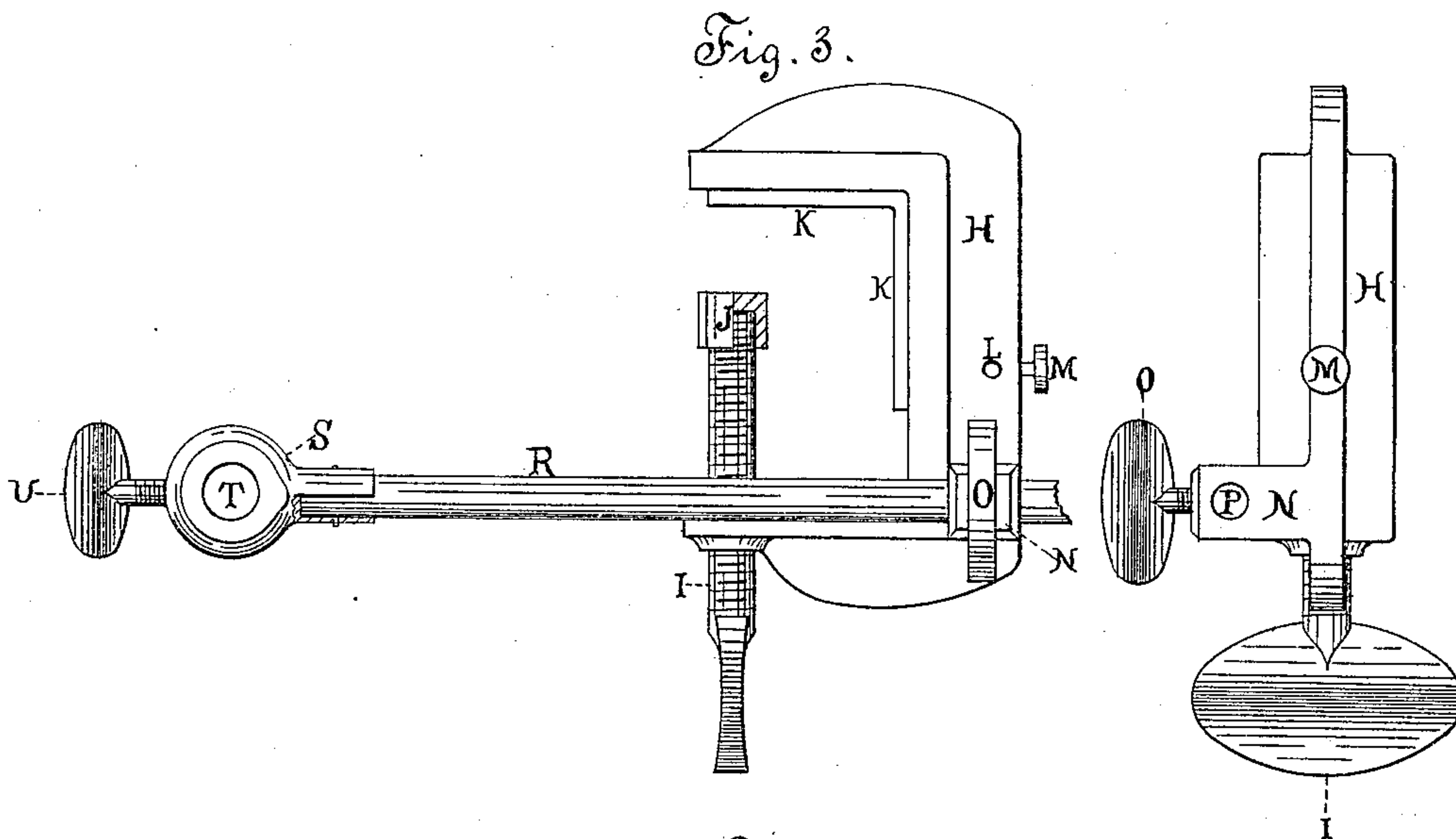
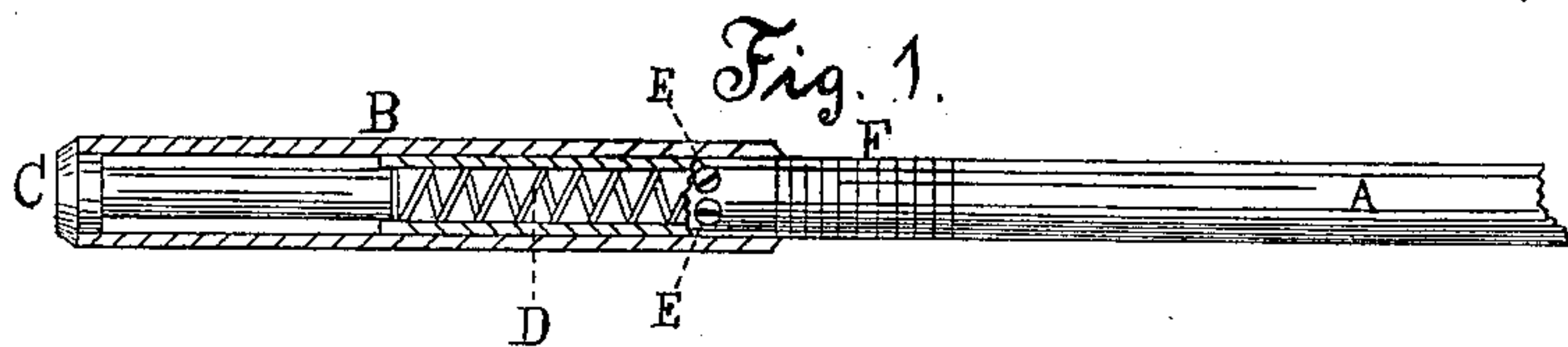
(No Model.)

M. W. GROVESTEN.

ELECTRIC SIGNALING APPARATUS FOR MACHINERY.

No. 329,830.

Patented Nov. 3, 1885.



Witnesses
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ELECTRIC SIGNALING APPARATUS FOR MACHINERY.

SPECIFICATION forming part of Letters Patent No. 329,830, dated November 3, 1885.

Application filed February 10, 1885. Serial No. 155,529. (No model.)

To all whom it may concern:

Be it known that I, MILTON W. GROVESTEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric Signaling Apparatus for Machinery; 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.

This invention relates to means for notifying an attendant, automatically, when the carriage or other moving part of a lathe, or other similar machine in which the tool or the work is fed automatically, has nearly reached the limit of its advance and needs to be returned to repeat its movement.

I am aware that machines have heretofore been provided with automatic stopping devices to prevent their being operated beyond a point of safety or to the injury of the article which is being fashioned or fabricated.

My invention, however, is designed to be applied to machines in which any stoppage would occasion a serious loss of time.

By means of my invention one attendant can safely be put in charge of a number of machines, or he may attend to a single machine and occupy himself with other work during the intervals of such attendance.

I employ electricity as the means of sounding an alarm for the attendant, and the manner in which I apply it to that purpose is illustrated in the accompanying drawings, in which—

Figure 1 is a view, partly in section, of one part of a circuit-closer adapted to be used in connection with my alarm apparatus, showing devices by means of which it is rendered compressible, and also a device for indicating to what degree it has been compressed. Fig. 2 is an exterior view of the same. Fig. 3 shows a side and a rear elevation of a clamp adapted to carry one part of the circuit-closer and to be attached to a lathe or other similar machine. Fig. 4 represents a lathe with my improved devices applied thereto.

Corresponding reference-letters are used in the several figures to designate similar parts.

Referring first to Fig. 3, H is a clamp of such configuration as to adapt it to be rigidly

secured to some part of the machine whose movements it is designed to regulate—such, for instance, as a lathe, boring-machine, or planing-machine. The body of the clamp is lined with insulating material K, and the thumb-screw I, for attaching the clamp to the machine, is capped with insulating material J. It is thus apparent that the clamp will be insulated from the frame of the machine, electrical connection being made with the clamp through binding-screw M. A lug, N, is cast on the clamp H, said lug being provided with a perforation, P, in which a rod, R, is adapted to be adjusted longitudinally, a thumb-screw, O, being provided to clamp the rod when the proper adjustment has been attained. Formed on or secured to the outer end of rod R is a knob, S, having a transverse perforation, T, for the reception of what I shall term my “indicator-rod” A, (see Figs. 1 and 2,) which forms part of my circuit-closer. This rod or tube is also adjustable within the perforation T, and is secured, after adjustment, by means of the thumb-screw U. The rod or tube is of metal, and is provided with a metallic sleeve, B, capable of sliding thereon. In the end of sleeve B is a plug, C, the diameter of whose shank is a little less than the inside diameter of the tube A. A spring, D, within said tube, presses at one end against the inner end of plug C and at the other end against two screws or pegs, E E, which also serve to prevent the turning of sleeve B upon the tube A. A scale, F, is marked on tube A, as shown, to indicate, in connection with the sliding sleeve B, how far the latter has advanced, and how far the carriage has been fed, and may still be fed with safety.

The application and operation of the parts described is as follows: The clamp H is attached to any convenient stationary part of a machine in which the tool or the work is fed automatically. If necessary, the rod R is bent so as to bring the tube A, or rather the sleeve B, into the path of the carriage V, near the limit of its advance. One pole of an electric battery is connected to the frame of the machine, and the other pole is connected, through an electro-magnetic bell, with the clamp H by binding-screw M, and so with the tube A, sleeve B, and plug C. It is evident that when the carriage V has advanced far enough to

come into contact with the plug C, the bell-circuit will be complete, and an alarm will be sounded. This takes place a little before it is necessary to shift the carriage, thus giving
5 time to an attendant to reach the machine from a distance in season to make the proper change. The scale F and sleeve B will indicate how imperative the need for promptness is, and when the proper relation of the parts
10 has once been fixed will indicate just the right point at which to change the carriage.

It will be apparent that instead of securing the clamp H to a fixed part of the machine, with the rod or tube A held in the path of a
15 moving part to indicate the approach of the latter to its desired limit of travel, said clamp might be secured to the moving part and hold the tube A in a position to come in contact with a fixed portion of the machine.

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

1. The combination, in an electric circuit, of an electro-magnetic alarm apparatus, the carriage of a lathe or other similar machine,
25 and a conducting-rod located in the path of the carriage and provided with a sleeve for sliding over the rod, whereby the carriage is allowed to advance after the sounding of an alarm, substantially as set forth.

30 2. The combination, in an electric circuit, of an electro-magnetic alarm apparatus, the

carriage of a lathe or other similar machine, and a conducting-rod located in the path of said carriage, the said rod being provided with a sliding sleeve and the rod with a scale, 35 substantially as described.

3. The combination, with an insulated clamp capable of being attached to a lathe or other similar machine, of a compressible conducting and indicating rod, the whole adapted
40 to form a circuit-closer, substantially as before set forth.

4. The combination, substantially as before set forth, of the insulated clamp, a conducting-rod secured thereto, a sleeve adapted to slide
45 upon said rod, a scale affixed to the bar adjacent to said sleeve, and a spring interposed between the rod and the sleeve.

5. The combination, with a lathe, and an indicator consisting of a stationary number
50 provided with a scale, and a movable number adapted to slide upon said scale, of an alarm to indicate the commencement or progress of the moving number upon the scale, substantially as before set forth.

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

MILTON W. GROVESTEEEN.

Witnesses:

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CHAS. E. GROVESTEEEN.