

No. 640,162.

Patented Dec. 26, 1899.

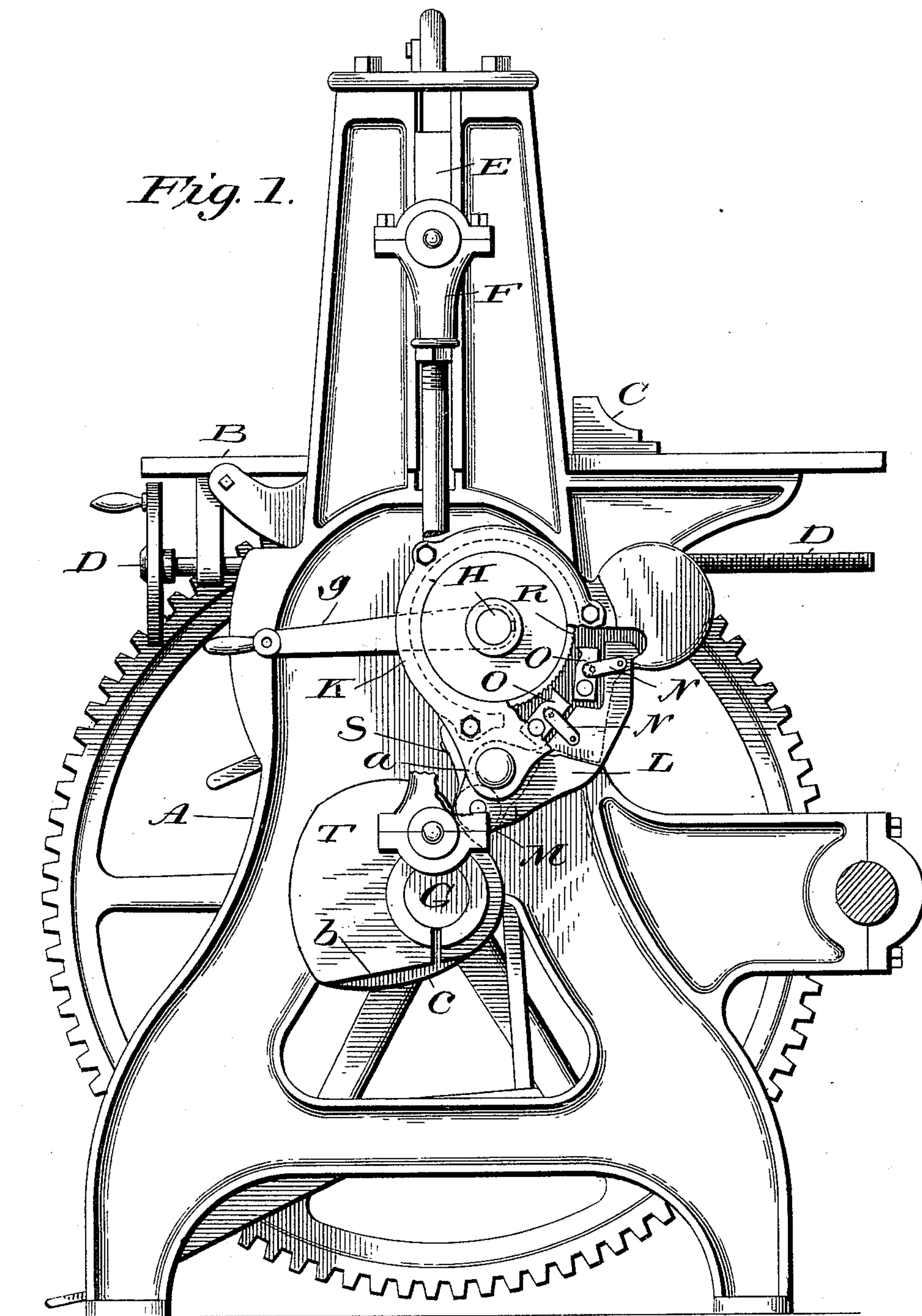
E. M. LOCKWOOD.

CLAMP OPERATING DEVICE FOR PAPER CUTTING MACHINES.

(Application filed Apr. 7, 1899.)

(No Model.)

2 Sheets--Sheet 1.



Witnesses

L. C. Mills
E. J. Redmond

Inventor

Edward M. Lockwood

By *W. A. Edmund*

Attorney

No. 640,162.

Patented Dec. 26, 1899.

E. M. LOCKWOOD.

CLAMP OPERATING DEVICE FOR PAPER CUTTING MACHINES.

(No Model.)

(Application filed Apr. 7, 1899.)

2 Sheets—Sheet 2.

Fig. 2.

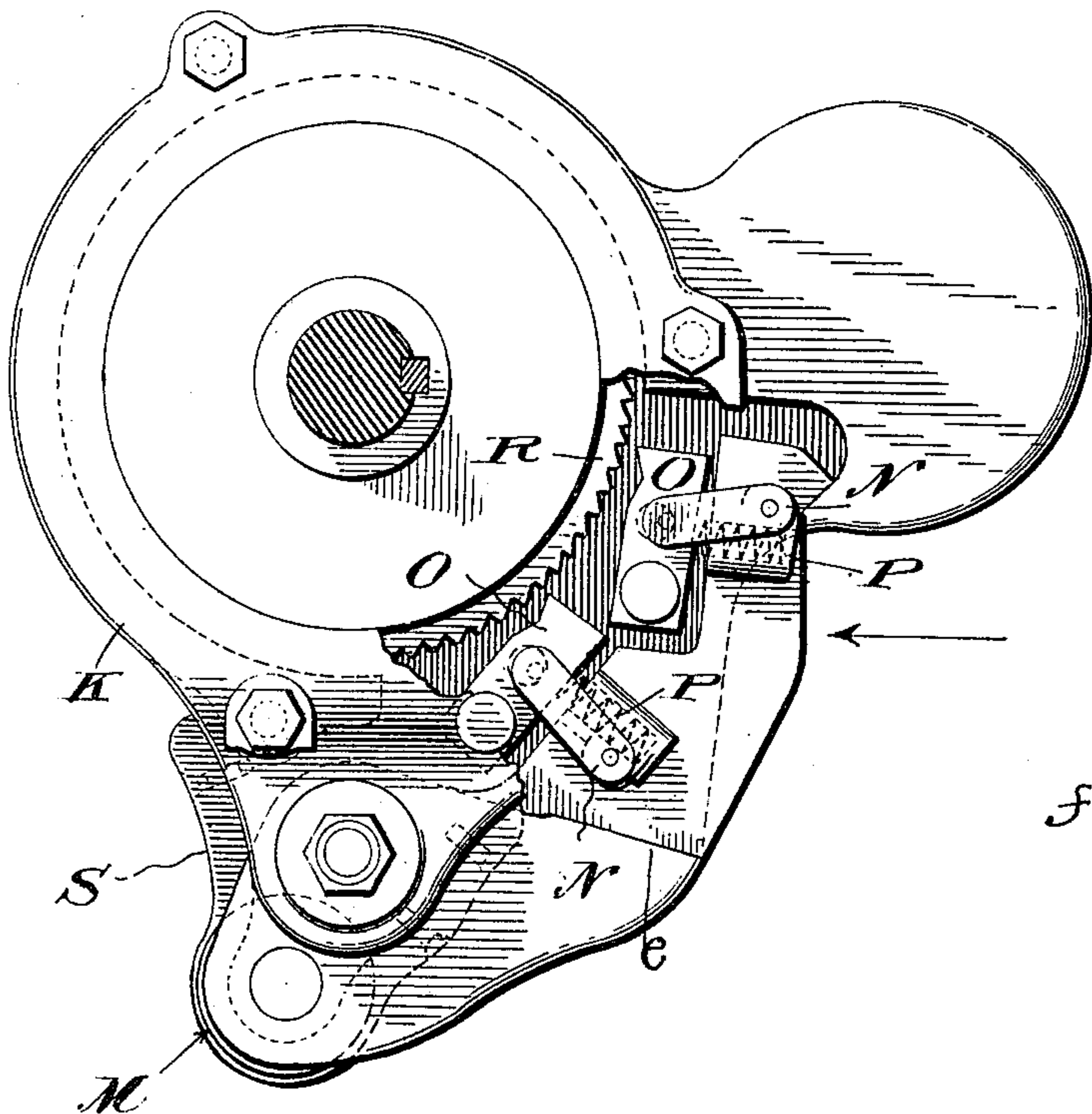


Fig. 3.

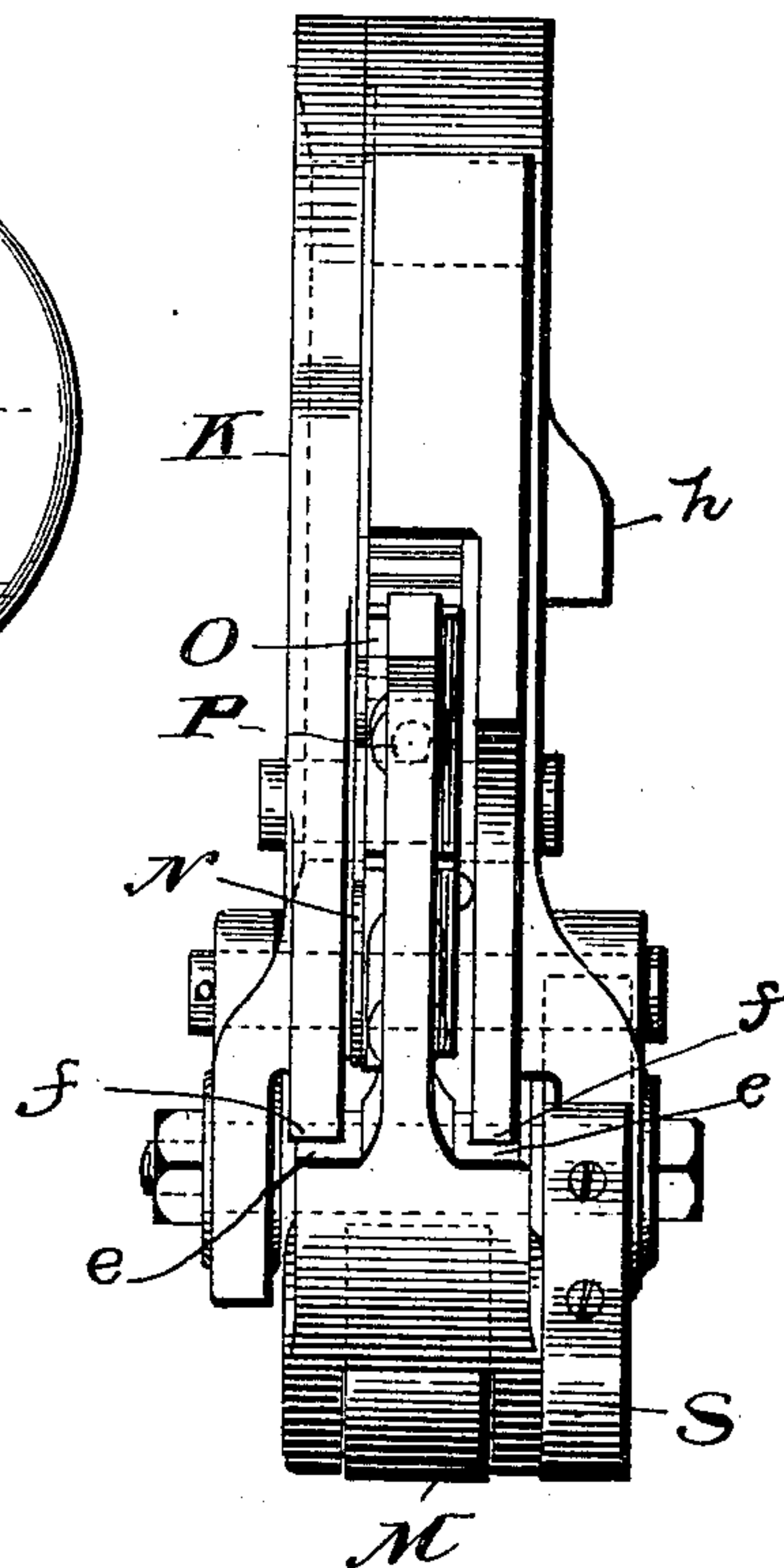


Fig. 4.

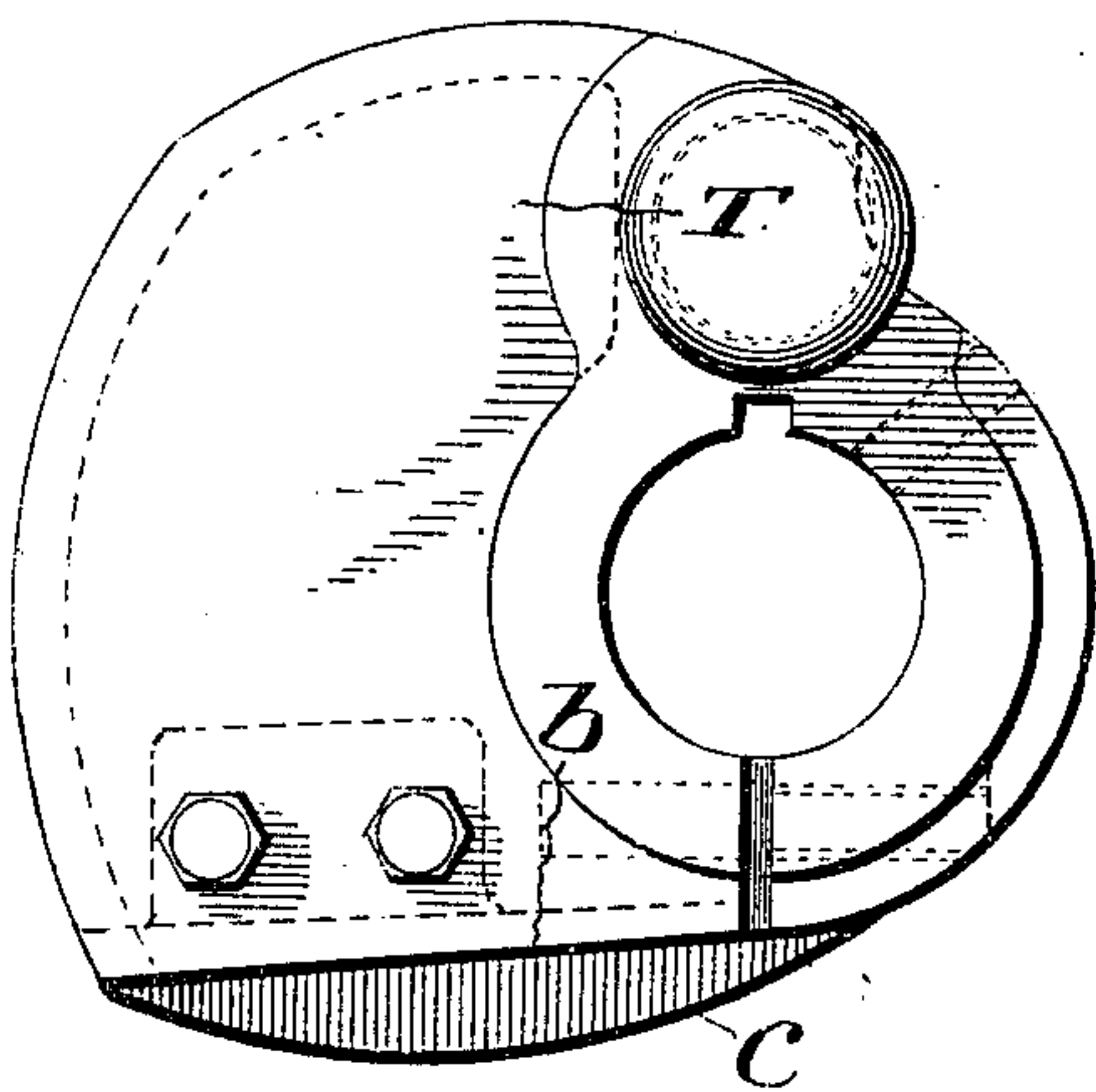
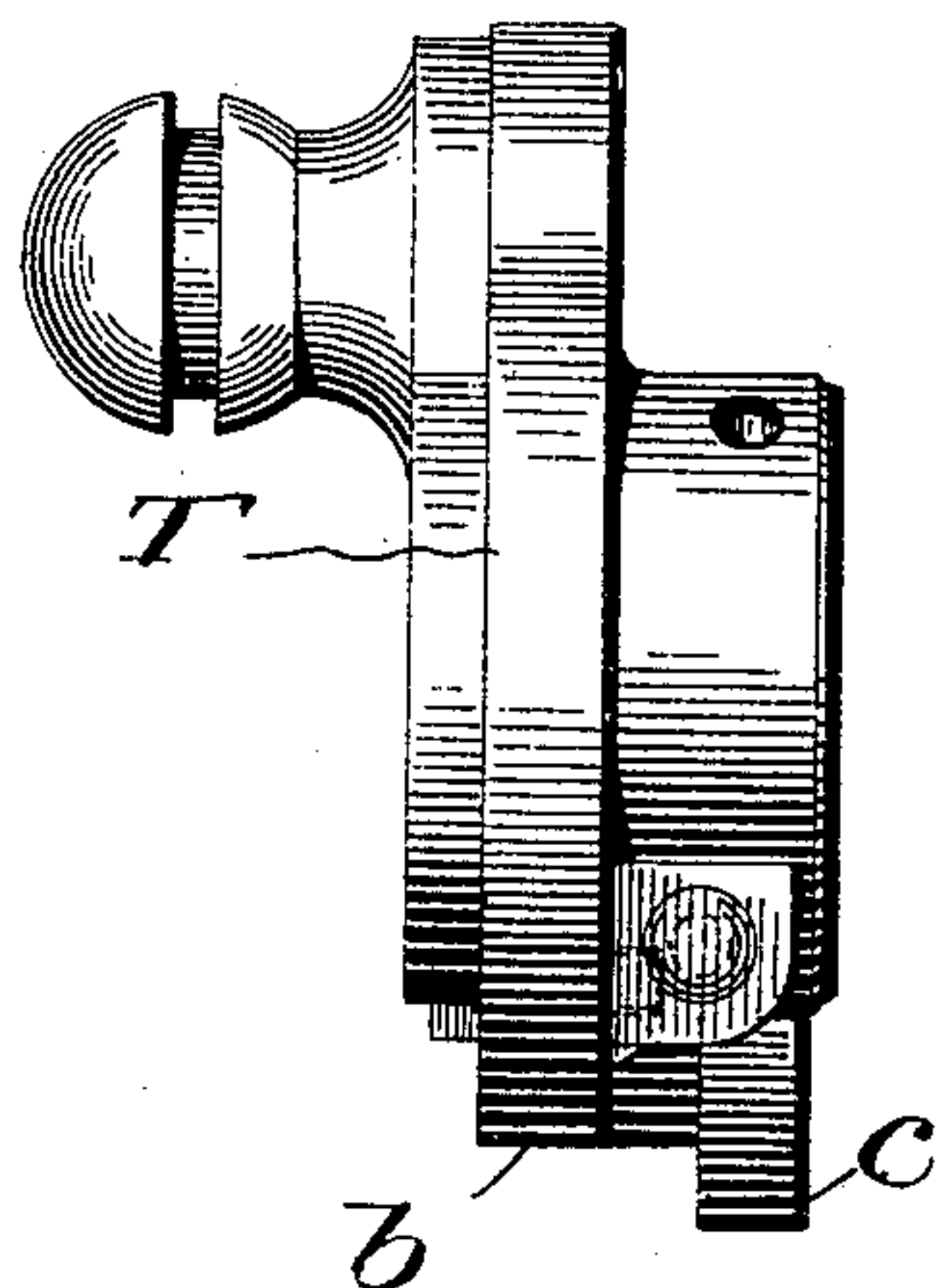


Fig. 5.



Witnesses

L. C. Mills.
E. J. Redmond

Inventor

Edward M. Lockwood

By

W. A. Redmond

Attorney

UNITED STATES PATENT OFFICE.

EDWARD M. LOCKWOOD, OF PHOENIXVILLE, PENNSYLVANIA, ASSIGNOR TO
THE OSWEGO MACHINE WORKS, OF OSWEGO, NEW YORK.

CLAMP-OPERATING DEVICE FOR PAPER-CUTTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 640,162, dated December 26, 1899.

Application filed April 7, 1899. Serial No. 712,097. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. LOCKWOOD, a citizen of the United States, residing at Phoenixville, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Clamp-Operating Devices for Paper-Cutting Machines; and I do 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 generally to paper-cutting machines and particularly to the means for operating the clamping devices of such machines; and it has for its object to provide a simple device for preventing rebound of the pressure-lever; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is an end elevation of a paper-cutting machine supplied with my improved device; Fig. 2, an enlarged side elevation of the friction device for operating the clamps; Fig. 3, an end elevation looking in the direction of the arrow, Fig. 2, and showing the weight in section; Fig. 4, a side elevation of the cam for operating the friction device, and Fig. 5 an edge elevation of said cam.

Similar letters refer to similar parts throughout all the views.

As the invention hereinafter described relates specifically to the friction device for operating the clamp of paper-cutting machines and the cam for operating the same and may be applied to all such machines in which the clamping device is operated in a vertical plane and the knife caused to have an oblique or draw-cutting action, particularly such as the machine described in the United States States Letters Patent to E. J. Armstrong, No. 575,291, dated January 12, 1897, and is an improvement on the device shown in my United States Patent No. 623,089, dated April 11, 1899, only a general description and illustration of such machines is thought necessary in connection with a full description of my present invention and such parts as coact di-

rectly therewith to render clear the construction and operation of my improvement.

In the operation of the parts shown and described in my above-mentioned patent the casing is let down to its initial position by the engagement of its jaw-roller and the cam which operates the casing. The engagement between the cam and the roller keeps the jaw shut and the pawls, which are operated by said jaw, in engagement with the ratchet-wheel to almost the instant of release of the clamp at the termination of the knife-stroke. The period of time between the release and the raising of the clamp cannot be calculated too closely in order to provide for the full release of the clamp before or at the instant the clamp-lifting mechanism starts to operate, and it is necessary, therefore, to have the release-face of the cam formed with a flat straight surface *b*, ending abruptly and extending from the point of greatest pressure of the cam—that is, from a point farthest from the center of motion of the cam to a point of clearance from the lever or jaw after the same has dropped out of contact with the casing and the latter has come to rest on the arm *g*, which arrests its motion. With this construction and operation the jaw and casing drop or fall as soon as the cam passes the point of greatest pressure in its engagement with the jaw-roller, the jaw dropping first by reason of the pressure of the spring or springs *P* thereon and the casing dropping by gravity after the jaw has taken up all the play permitted by the pawl-links *N*. The quick release of the casing, caused by the sharp or abrupt ending of the flat face of the cam, permits of the casing coming into violent contact with the arm *g*, which causes the casing to rebound and the jaw to vibrate, and thus sometimes throw the pawls again into engagement with the ratchet wheel or rim, and as the latter is turning in the opposite direction at this time (the clamp being lifted by the lifting-cam) the machine works against itself and breaks.

Now my present invention is intended to obviate all liability of the accidental reengagement of the pawls with the ratchet wheel

or rim at the time of the release of the clamp from the pressure mechanism by preventing a shock or blow between the casing and the arm *g* upon the return of the casing to its first position.

Referring to the drawings, A represents the frame of a paper-cutting machine; B, the horizontal bed on which the paper is placed to be cut; C, a gage for adjusting the paper; D, a screw-rod for operating the gage; E, the knife-stock; F, the pitman-rods for operating the knife; G, the main driving-draft, and H the shaft for the friction device. All the parts named are or may be of the usual or any desired construction.

K represents a casing inclosing friction-disks and a ratchet wheel or ring R, mounted on the shaft H, as fully described in my said patent, and between ears or lugs *a*, formed on the casing, is pivoted a lever or jaw L, in the forked end of which is journaled a roller M. The jaw or lever L extends obliquely upward and is connected by links N to pawls O, which are pivotally secured at one end to the casing K and held properly extended by springs P, seated in recesses in the jaw or lever L, as clearly shown. The limit of motion of the jaw or lever L is fixed by the stops or projections *e* on the lever or jaw, which engage the offsets or edges *f* of the casing, and thereby arrest the upward throw of said lever or jaw.

The pawls O engage the ratchet R in order to impart motion to the friction device, as fully described in my above-mentioned patent.

An arm *g* is loosely mounted on the hub surrounding the shaft H between the friction device and the end piece of the frame and is adjustably secured to the edge of the said end piece in position to be engaged by a projection or stop *h*, cast with or otherwise secured to the casing, thereby limiting the return move-

ment of the casing, and thus controlling the position of roller M with reference to the pressure-cam T, which engages said roller to operate the friction device.

To the casing K, at one side, I bolt or cast a steel plate or bar S, bent to conform to the shape of the roller M and extending out in line therewith, as clearly shown in Figs. 2 and 3, to form a rider, which engages a cam-piece *c*, cast on the pressure-cam T, to one side of the straight or uncurved let-down face *b* of said cam, the instant the pressure-cam has passed the point of greatest pressure, and thus gently lower the casing to the arm *g*, which arrests it without shock, and leaving the mechanism in position for another stroke of the knife, and constituting, with the rider and cam-piece, a means of continuous cam action on the jaw and case, and avoiding all shocks incident to the sudden release of the jaw and casing from the cam, and the jaw is allowed to open as soon as it has finished pressing, and the casing is laid down without rebound and with a closer period.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination with the friction device for the clamp of a paper-cutting machine, of a casing provided with a rider, a jaw pivoted to said casing, and a cam for engaging said jaw provided with a cam-piece for engaging said rider, whereby continuous cam action is provided between the cam and the jaw and casing and the latter lowered to initial position without shock.

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

EDWARD M. LOCKWOOD.

Witnesses:

H. H. GILKYSON,
E. A. NYMAN.