

(No Model.)

2 Sheets—Sheet 1.

F. A. CALLEY.
KNITTING MACHINE.

No. 338,478.

Patented Mar. 23, 1886.

Fig. 1.

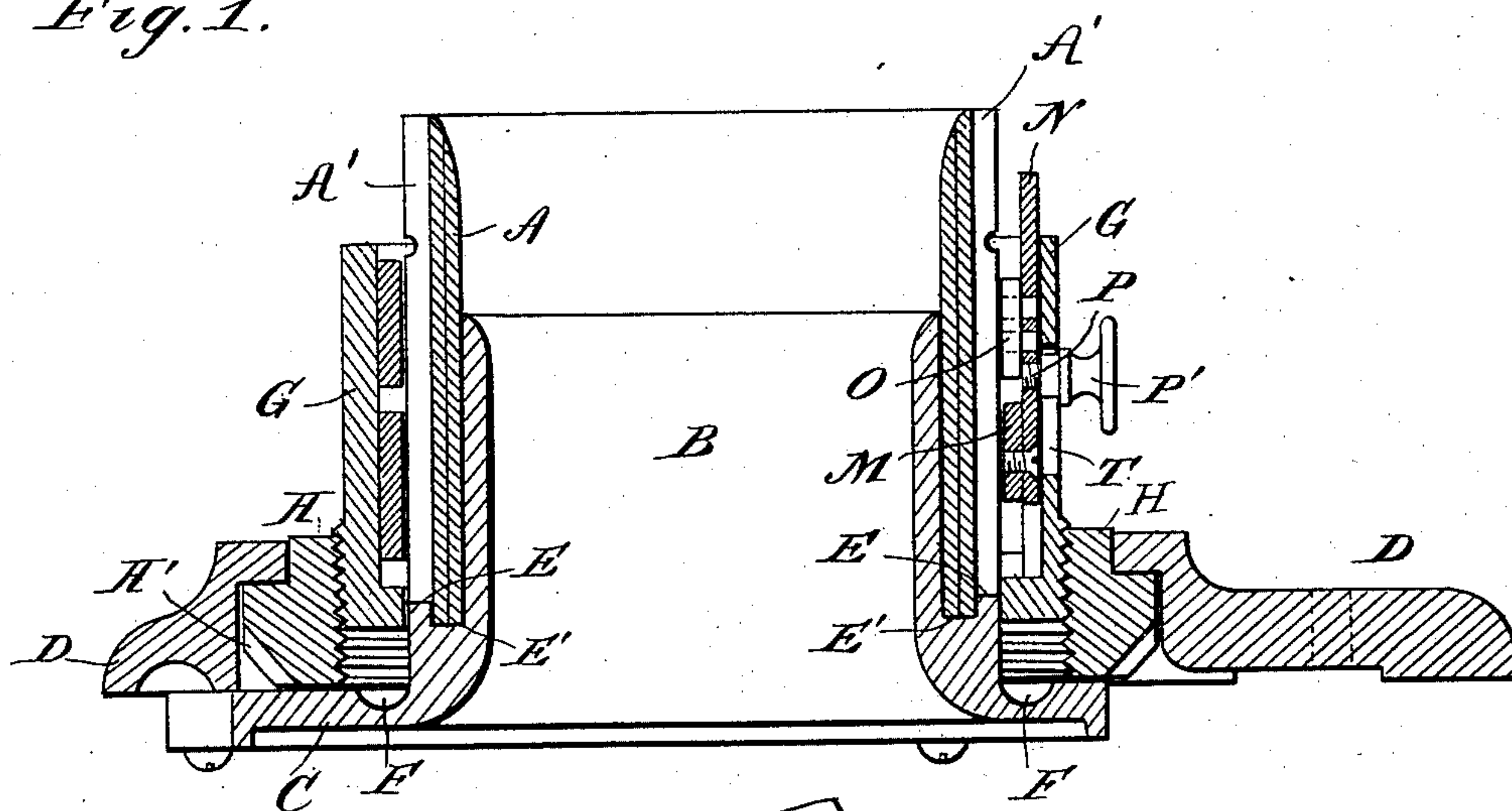
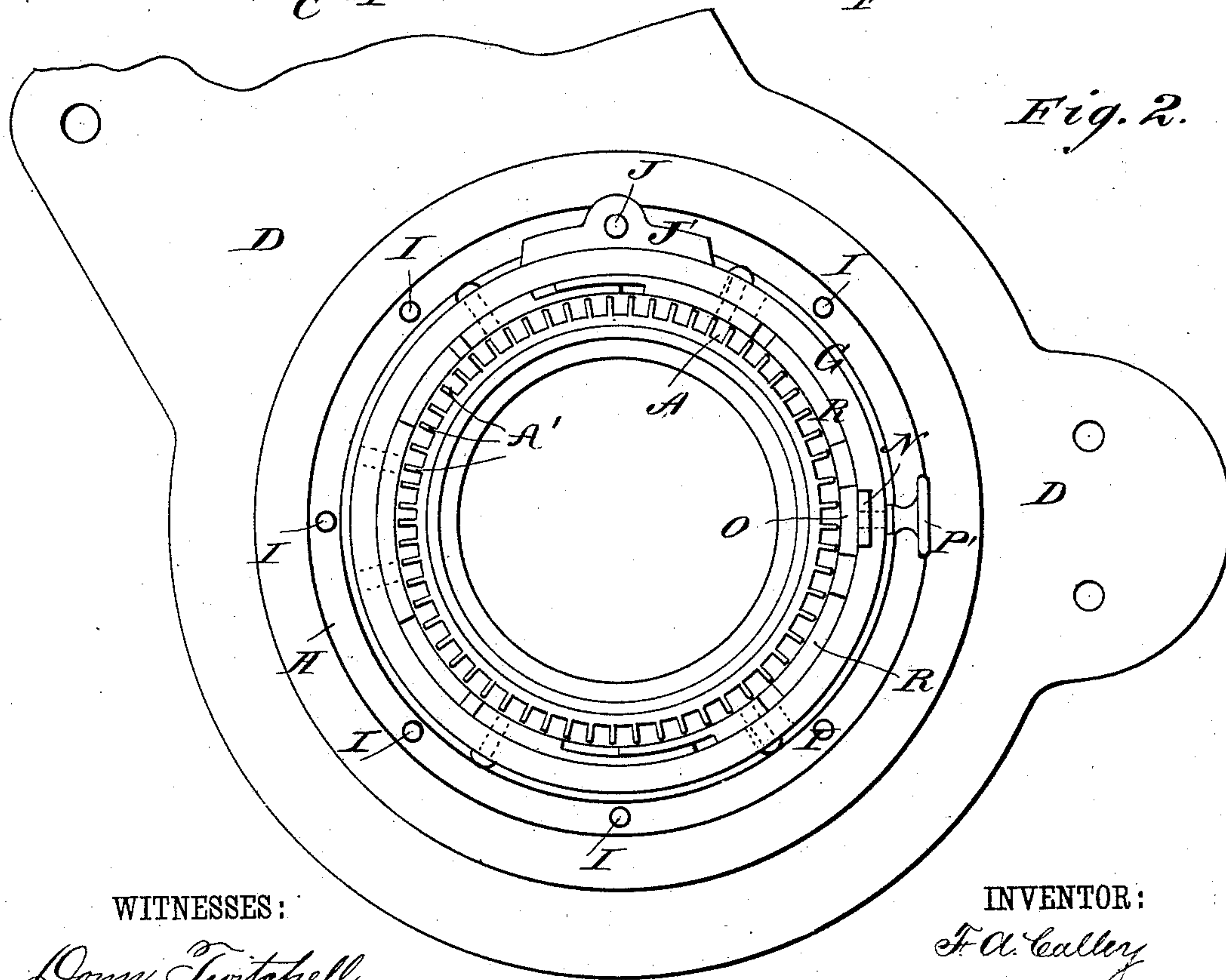


Fig. 2.



WITNESSES:

Donn Twitchell.
C. Sedgwick.

INVENTOR:

F. A. Calley
BY *Munn & Co.*
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

F. A. CALLEY.
KNITTING MACHINE.

No. 338,478.

Patented Mar. 23, 1886.

Fig. 3.

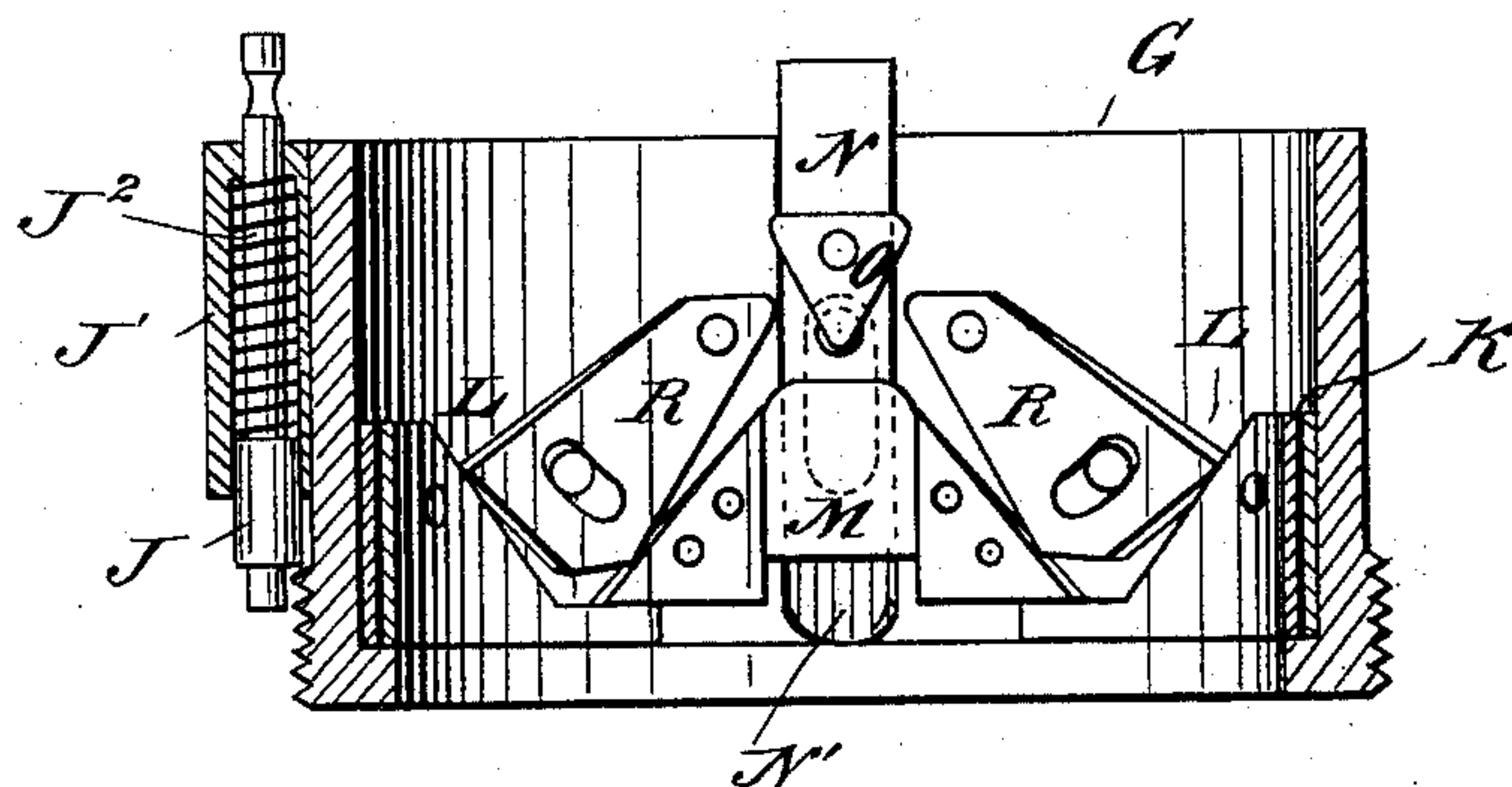


Fig. 4.

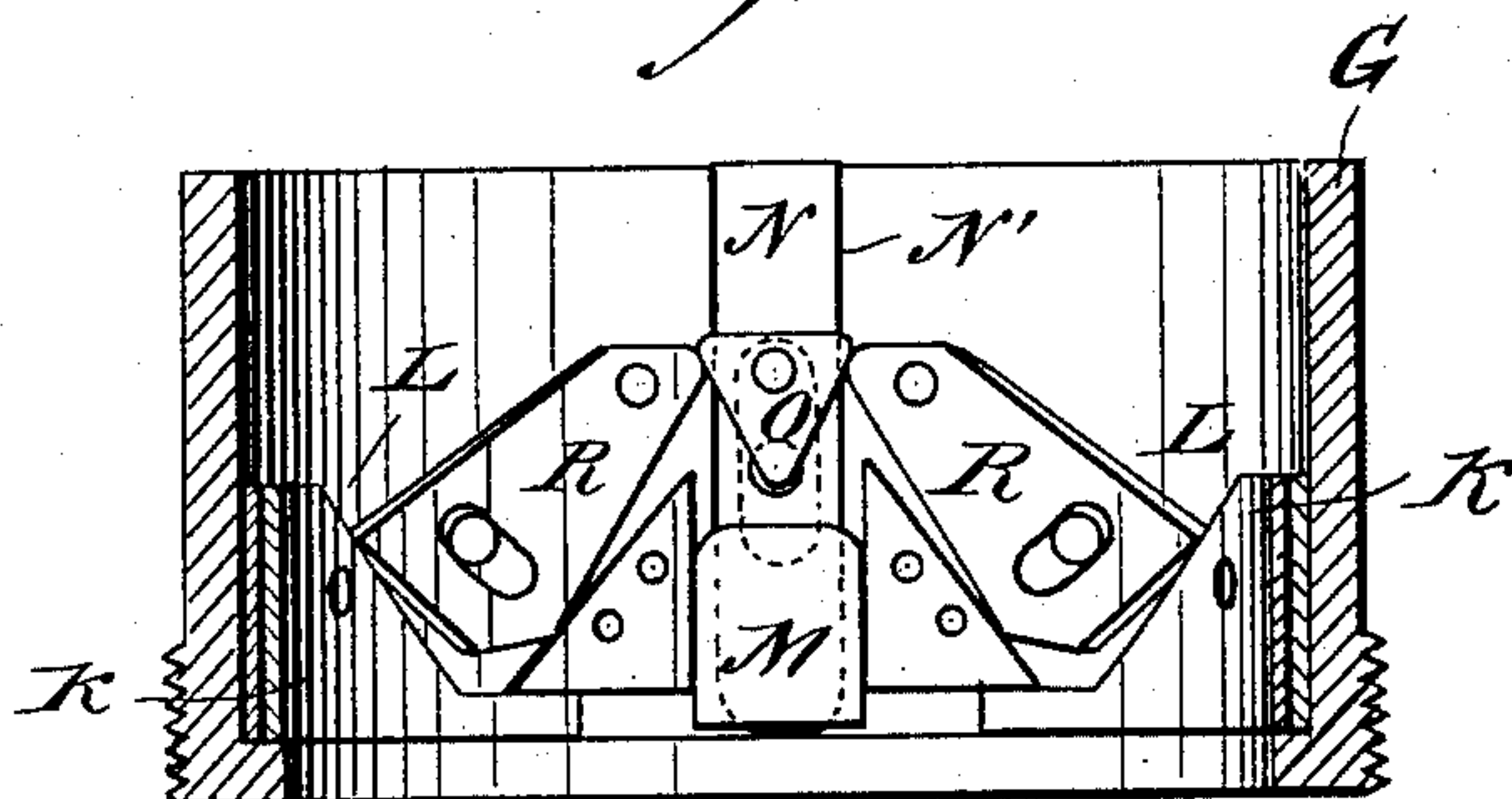
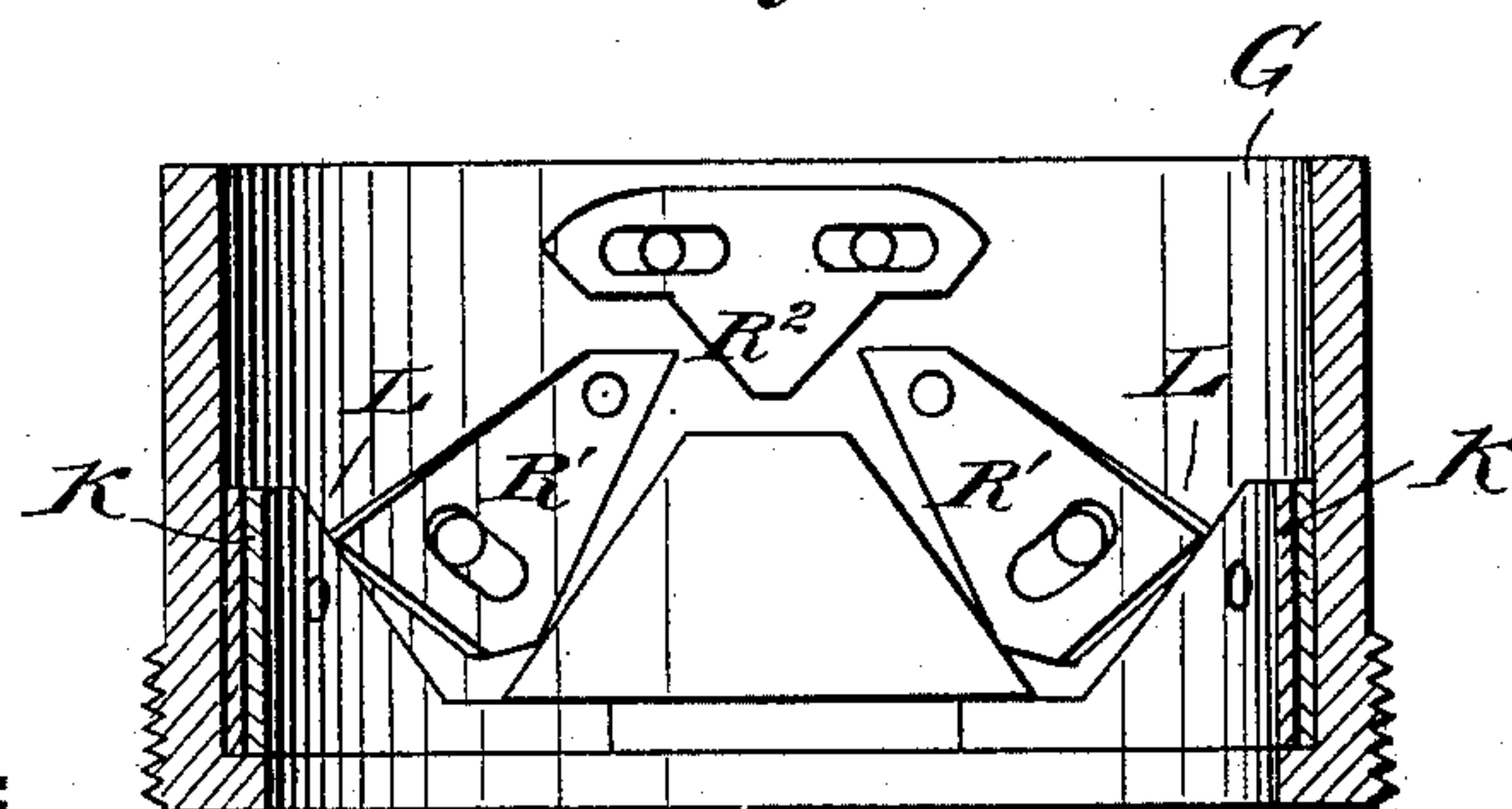


Fig. 5.



WITNESSES:

Donn Twitchell.
C. Sedgwick

INVENTOR:

F. A. Calley
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREEMAN A. CALLEY, OF PAWTUCKET, RHODE ISLAND.

KNITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 338,478, dated March 23, 1886.

Application filed March 21, 1885. Serial No. 159,656. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN A. CALLEY, of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and Improved Knitting-Machine, of which the following is a full, clear, and exact description.

This invention relates to knitting-machines; and it consists in various improvements on the knitting-machine for which Letters Patent No. 249,000 were issued to me on the 1st day of November, 1881.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional elevation of my improved knitting-machine. Fig. 2 is a plan view of the same. Fig. 3 is a cross sectional elevation of the cam-cylinder, showing the slide in the same raised. Fig. 4 is a similar view showing the slide lowered. Fig. 5 is a cross-sectional view showing the usual cams used, in addition to the cams shown in Figs. 3 and 4, when two threads are to be knit.

The needle-cylinder A surrounds an upwardly-projecting neck, B, formed on a fixed plate, C, connected with the base-plate D, the lower ends of the radial ribs A', forming the sides of the needle-grooves, resting upon an external annular shoulder, E, of the neck B, in which shoulder an annular groove, E', is formed for receiving the bottom edge of the needle-cylinder.

In the upper surface of the plate C an annular groove, F, is formed, in which the oil and grease collect that flow down from the several operating parts of the machine above. The cam-cylinder G, surrounding the needle-cylinder, is screwed into a ring, H, on which the bevel-gearing H' is formed. In the upper surface of the ring H a series of notches or apertures, I, are formed for receiving the lower end of a vertically-sliding bolt, J, held in a casing, J', on the outer side of the cam-cylinder G, and pressed down by a spring, J². A circular plate, K, is secured to the inner surface of the cam-cylinder G, and its top edge forms a track upon which the feet of the needles can run.

In the top edge of the track-ring K two V-shaped recesses, L, are formed, and between them a vertically-sliding piece, M, is arranged,

which is secured on a vertically-sliding plate, N, in a vertical slot or notch, N', in the side of the cam-cylinder G. A V-shaped piece, O, is secured on the vertically-sliding plate N, above the piece M. A screw, P, having a head, P', is passed through a vertical slot, T, in the cam-cylinder, and is screwed into an aperture in the slide N, and by drawing up the said screw the slide can be locked in the desired position.

In the recesses L the swinging wing-cams R are located, and between the upper ends of the same the V-shaped piece O can slide upward.

In the cam-cylinder, directly opposite the cams R R M O, the cams R' R' and R² are arranged in the manner shown in Fig. 5, when the machine is to knit with two threads. When but one thread is used, the cams R' R' R² may be dispensed with.

The operation is as follows: When the parts are in the position shown in Fig. 3, ordinary knit fabric is formed, and the feet of the needles slide from the top edge of the ring K, up the top edge of the left-hand cam, R, are depressed by and pass under cam O, down upon the top of the piece M, the top of which is raised to the level of the top of the ring K, down the left-hand edge of the right-hand V-shaped recess L, under the right-hand cam R, and up the right-hand edge of the right-hand recess L, then around the cam-cylinder on the top of the ring K, and so on. When the machine is reversed, the direction in which the needles travel is reversed, and they pass up over the right-hand cam R and under the left-hand cam. When tops are to be transferred on the needles, all the needles must be raised. To raise the needles and to keep them raised as long as desired, the slide N is moved down to bring the top edge of the piece O in line with the tops of the cams R, as shown in Fig. 4. The needles then run over the edges of the cams R and over the top edge of the piece O, and are not forced down by the cams, and consequently cannot form stitches. As all the needles are raised the top can easily be transferred to the needles. A top is a piece of web knit with a welt on a power knitting-machine, and forms the ribbed or top part of the stocking. To bring the needles in operation again, the slide N is raised to permit the feet of the needles to be drawn down from the upper ends of the cams R by the cam O upon

the piece M, which has also been raised, and then move on, as described before. To adjust the length of the stitch, the cam-cylinder G must be raised or lowered, the needle-cylinder A remaining stationary. To raise or lower the cam-cylinder, the latch or bolt J is raised and the cam-cylinder is held, and the ring H is turned more or less by means of the usual crank, and the cylinder G is thus raised or lowered, as the ring H and the lower part of the cam-cylinder are screw-threaded. The cam-cylinder is then locked in place on the ring H by the action of the bolt J, the latter being forced at its lower end by the spring J² into one of the apertures I in the ring H. The needle-cylinder rests against the outer surface of the neck, and is held firmly and need not be screwed into the bed, whereby the removal of the needle-cylinder for repairs or other purposes is greatly facilitated.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the needle-cylinder A, of the plates C and D, the neck B, 25 formed on the plate C, and having an annular groove, F, in its top, the ring H, and the cam-cylinder G, substantially as herein shown and described.

2. The combination, with the needle-cylinder A and the cam-cylinder G, provided with the casing J' and having a screw-thread on its outer surface at the bottom, the screw-ring H, having apertures, and the latch or bolt J, held in the casing J' on the outer side of the 35 cam-cylinder, substantially as herein shown and described.

FREEMAN A. CALLEY.

Witnesses:

JOHN P. GREGORY,

ISAAC SHOVE.