

No. 768,442.

PATENTED AUG. 23, 1904.

G. W. FOSTER.
SPINNING AND TWISTING MACHINE.

APPLICATION FILED SEPT. 10, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

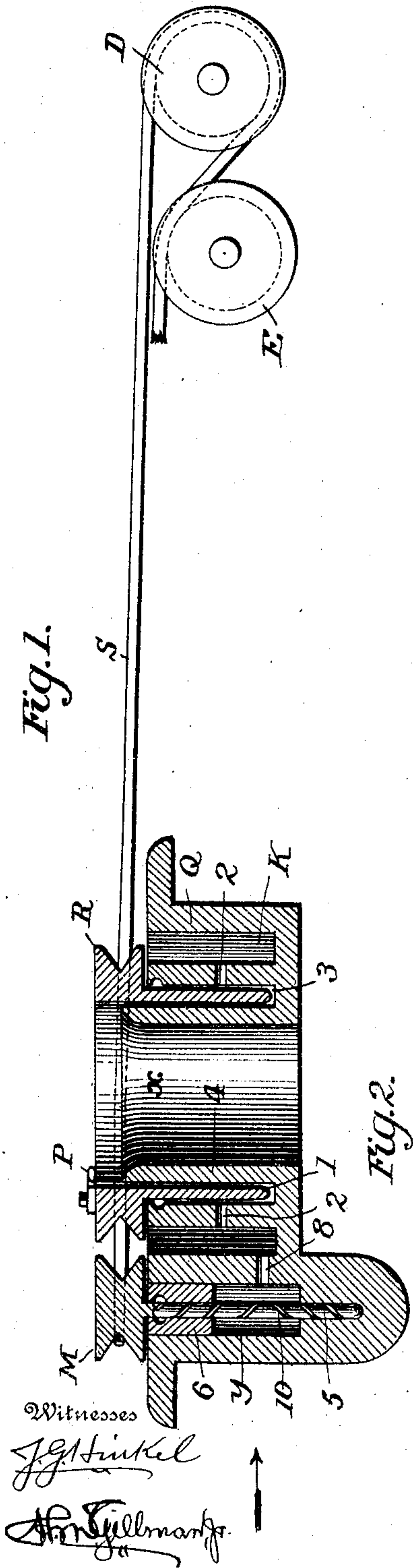


Fig. 3.

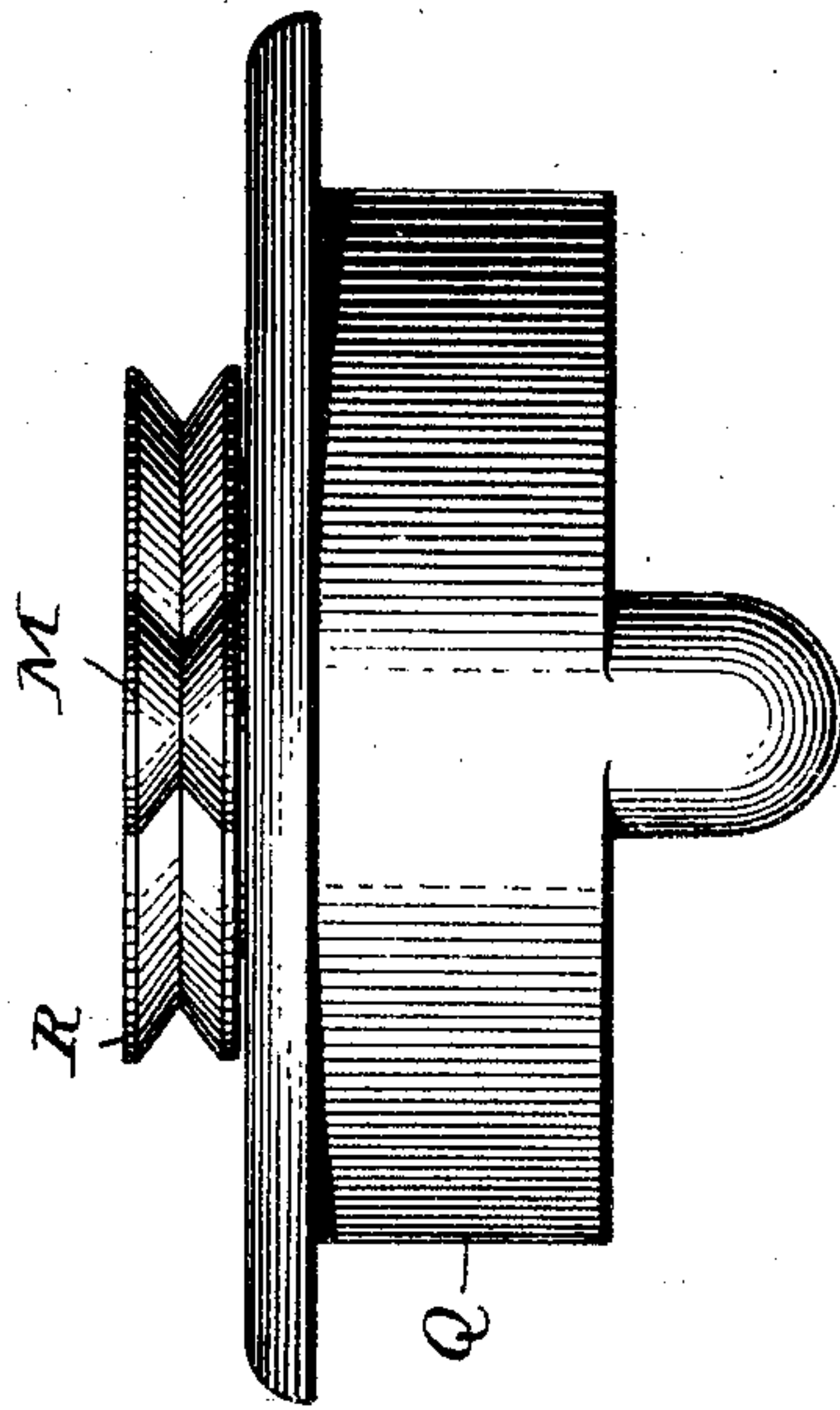
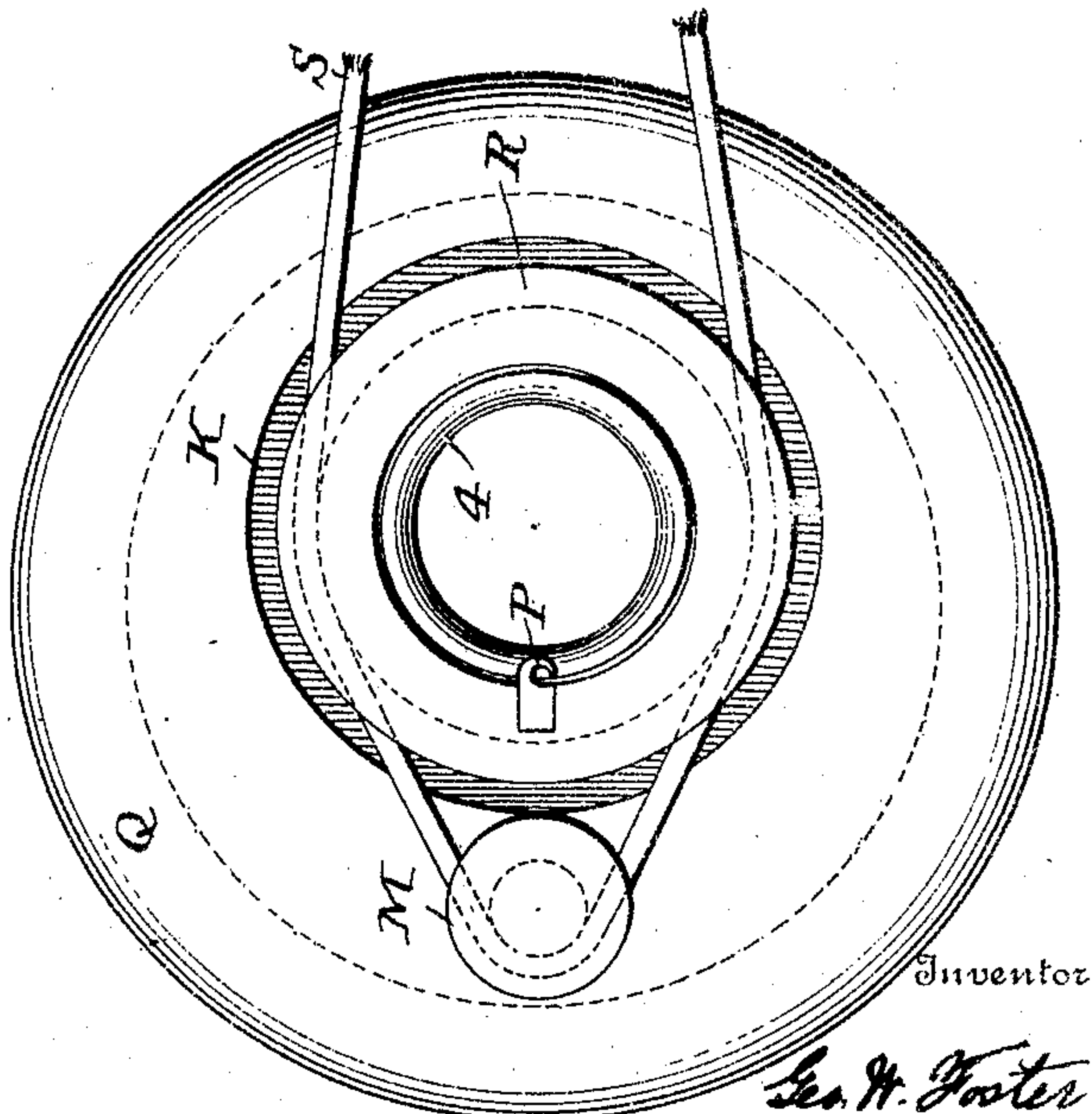


Fig. 2.



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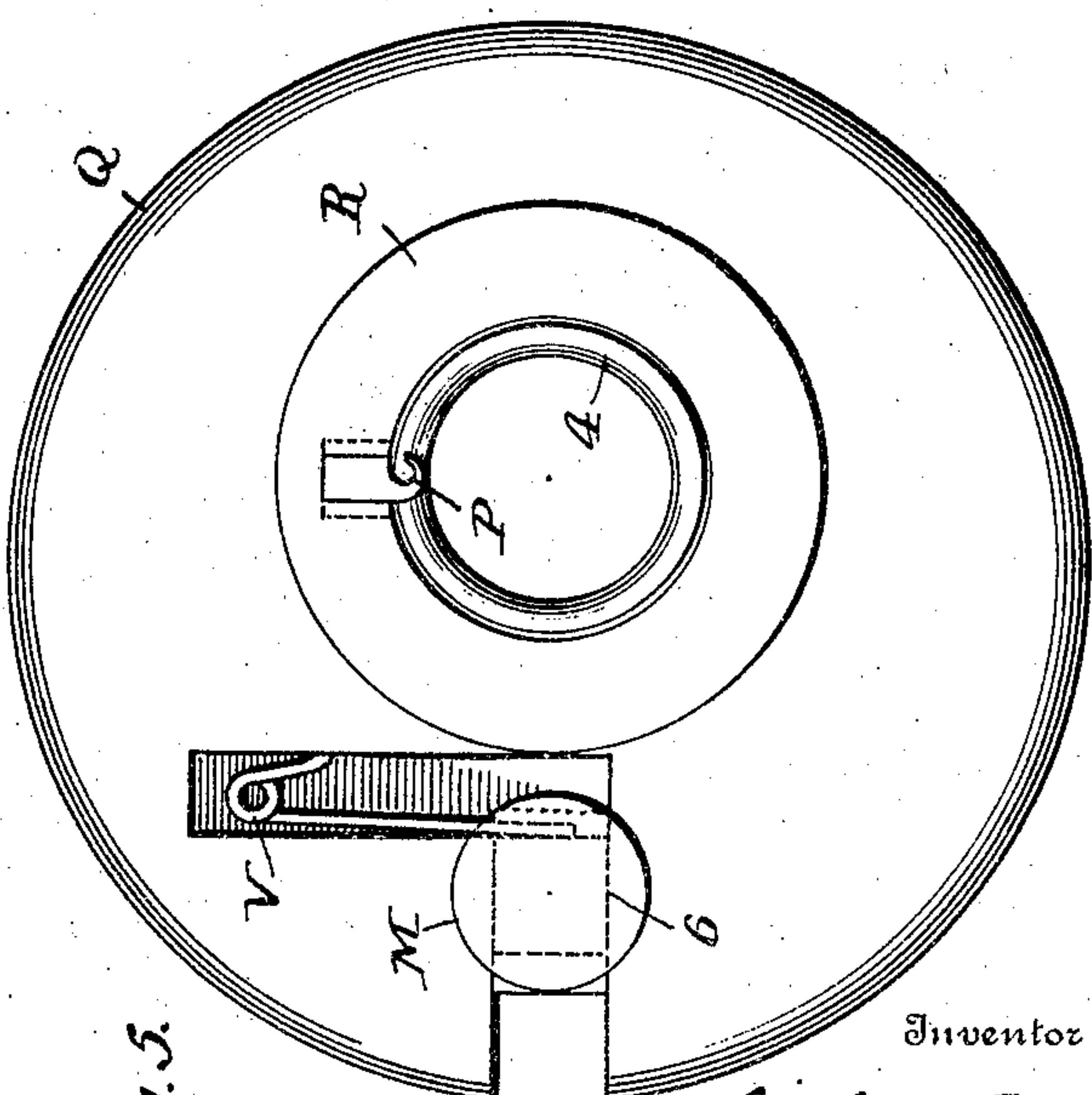
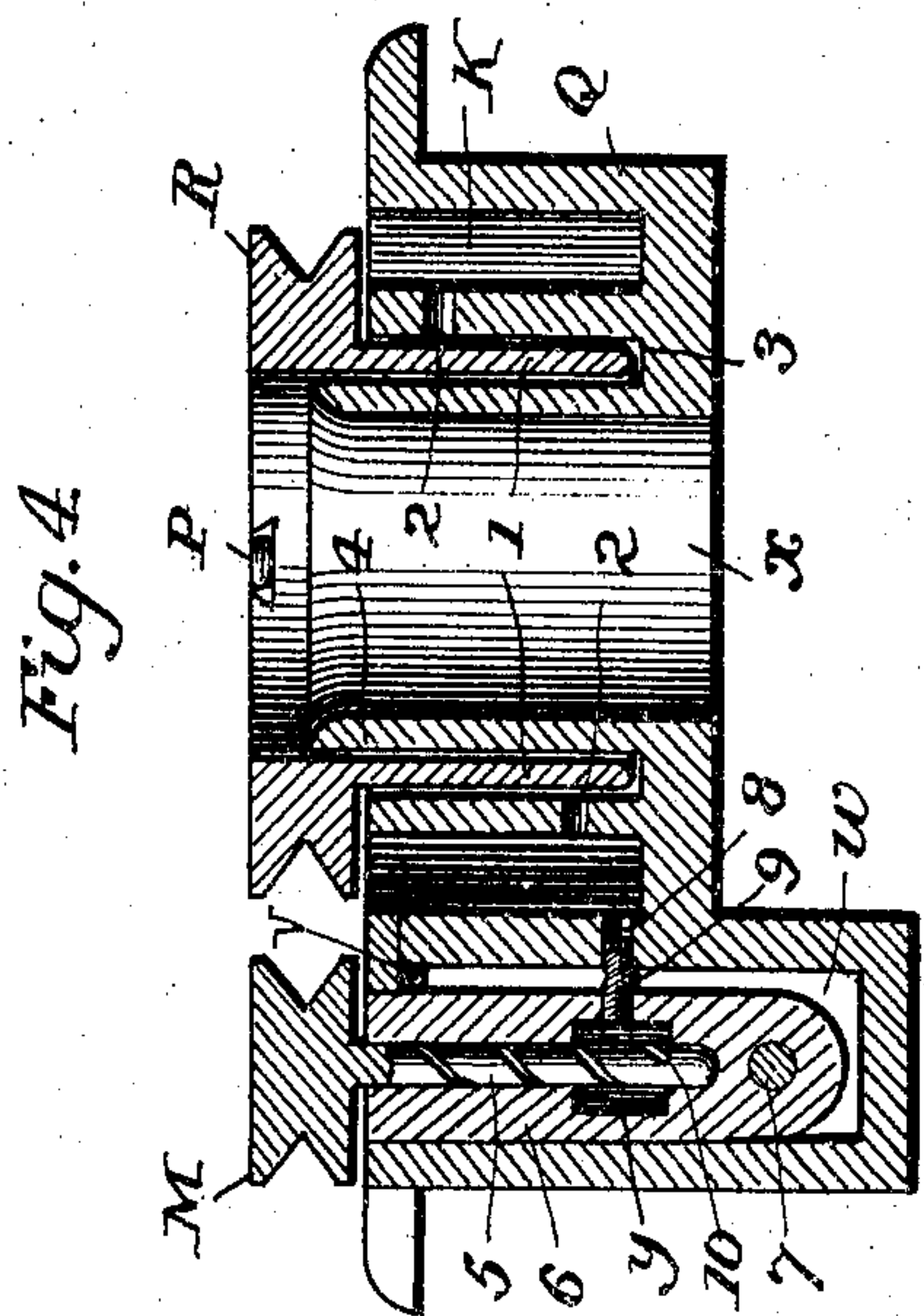
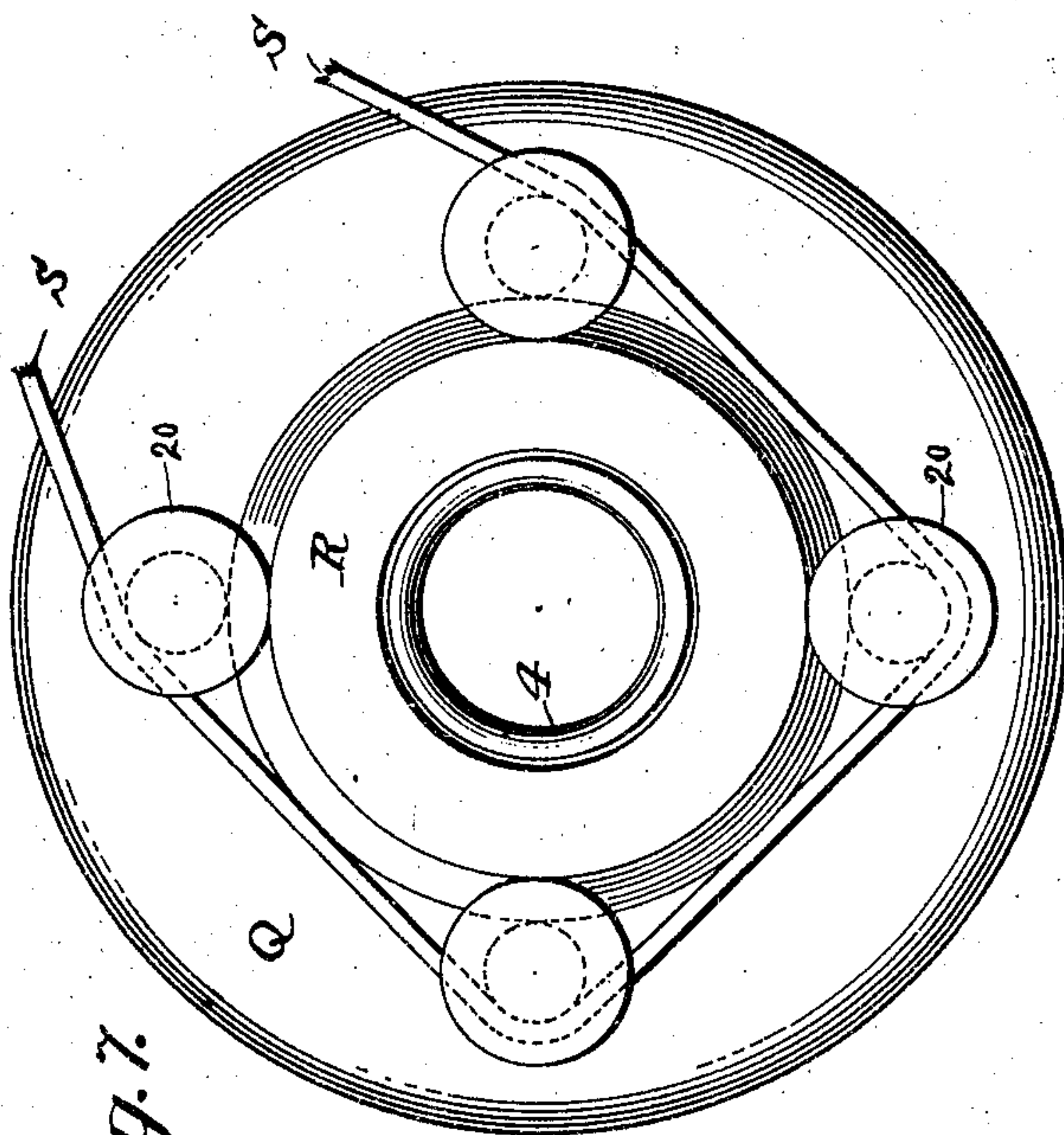
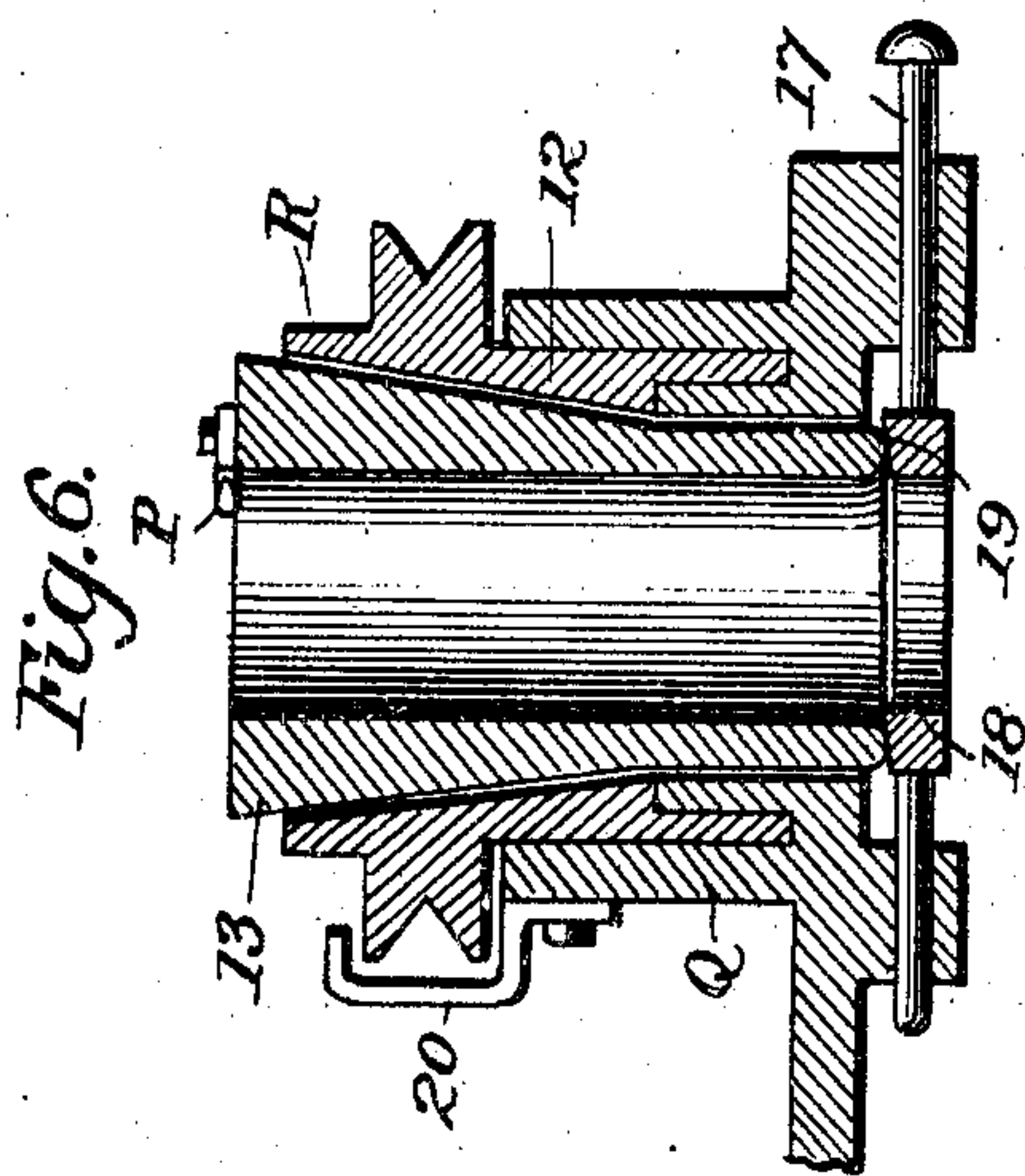
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NO MODEL.

2 SHEETS—SHEET 2.



Witnesses
J. Hinkel
H. Gellman Jr.

Fig. 5.

Inventor

Geo. H. Foster

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By *Joseph Freeman*

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UNITED STATES PATENT OFFICE.

GEORGE W. FOSTER, OF WESTFIELD, MASSACHUSETTS.

SPINNING AND TWISTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 768,442, dated August 23, 1904.

Application filed September 10, 1902. Serial No. 122,882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. FOSTER, a citizen of the United States, residing at Westfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Spinning and Twisting Machines, of which the following is a specification.

My invention relates to spinning or twisting machines; and it consists in means for driving a carrier supporting the guide-eye and in certain details of construction, as fully described hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a section of sufficient of a spinning or twisting machine to show my invention. Fig. 2 is a plan of Fig. 1; Fig. 3, an edge view looking in the direction of the arrow, Fig. 1. Fig. 4 is a section illustrating a preferred construction; Fig. 5, a plan of Fig. 4; Fig. 6, a section illustrating a modification; Fig. 7, a plan showing another driving arrangement.

Generally the eye through which the yarn passes in a spinning or twisting machine is in the form of a traveler carried loosely upon a ring by the motion of the yarn. In my invention the eye is secured to a carrier, which may be annular or tubular and which is driven positively by the belt, gearing, or otherwise. The carrier R supports the eye P, through which the yarn is passed, and a rotation being imparted to said carrier the yarn delivered by feed-rolls, as usual, receives from the eye a definite twist and is then wound upon its bobbin or support as usual or in any suitable manner.

To drive the carrier positively and at the same time avoid any tendency of the driving means to thrust the carrier laterally in any direction against its bearings, I apply said driving means, whatever the same may be, (as friction or toothed pulleys or bands,) to opposite points of the periphery of the carrier. As shown in Figs. 1 to 5, the driving means is a band S, which may pass around a driving-drum D and over idlers E and round a guide-pulley or whirl, passing on opposite sides of the carrier and touching the latter at opposite points. By this means the carrier

is rotated without any draft laterally in any direction, rotating practically in suspension, especially if the groove 3, as shown, is made of such size that the sleeve 1 can have a very slight play therein. To insure a more positive drive, the periphery of the carrier has a V-groove to receive a round driving-band.

The carrier R is supported by desired means so as to rotate freely. As shown, it has a hollow sleeve 1 extending into an annular groove 3 in the rail, bearing-block, or other support Q, preferably within a surrounding oil-chamber K, with oil-passages 2 between, so that oil can flow freely to the groove 3, the inner wall 4 of the latter being the highest, so that the oil can not work its way into the central passage x and onto the thread, said passage being of any required diameter.

It is of course desirable to reduce the frictional resistance to the rotation of the guide-pulley M, and the spindle 5 of the latter is therefore extended into a bearing 6, fitting a recess in its support. This support may be stationary, as in Fig. 1, but preferably is a box pivoted at 7 to swing freely within a chamber w in the block Q and pressed outward by a spring V, as shown in Figs. 4 and 5. The bearing 6 contains an oil-chamber y , which communicates through a channel 8 with the oil-chamber K, and when the bearing 6 is pivoted a flexible pipe 9 may carry the oil across the chamber w . In case of leakage the chamber w will receive the oil. The oil is fed along and toward the top of the spindle by means of a spiral groove 10, suitably disposed.

The rotation of the carrier may be started and arrested by any suitable means, one means being shown in Fig. 6, and consists of a two-part carrier with a frictional engagement between the parts. Thus the part 12 fits the supporting-bearing and the part 13 is a sleeve within the part 12, the coinciding faces of the parts 12 and 13 being tapered, so that if one part is elevated or depressed independently of the other they are carried out of or into frictional contact. The shifting means may be of any suitable character. In Fig. 6 there is a bar 17, sliding in the block Q and carrying a ring 18 with lugs 19, having inclined faces

below the lower end of the part 13. By pushing in the bar 17 the part 13 is lifted and will no longer be driven by the part 12, while the outward movement of the bar will bring the parts into frictional contact. A stop 20 prevents an upward movement of the part 12 in case of any tendency of the parts to stick together. It will be evident that it is immaterial whether the taper of the parts be upward or downward.

In Fig. 7 the driving-band, instead of contacting with the carrier, drives friction or other pulleys 20, of any desired number, which engage the periphery of the carrier. It will be seen that in this case there is no need of any other guide for the carrier than the pulleys 20, while there is no lateral draft whatever on the carrier itself.

Without limiting myself to the construction of parts shown and described, I claim—

1. The combination with the eye of a spinner or twister, of a carrier therefor, and driving means contacting with and constituting the support of the carrier to rotate it without supporting contact with other parts, substantially as set forth.

2. The combination with the eye of a spinner or twister, of a carrier therefor having a circular grooved periphery, and a driving-band supported to touch said periphery tangentially at symmetrically-disposed points and constituting the support for said carrier to rotate it without supporting contact with any other part, substantially as set forth.

3. The combination with the eye of a spinner or twister, of a circular carrier therefor, a bearing supporting the carrier when not in working position and in which the carrier rests loosely, and a driving-band supported to touch the periphery of the carrier tangentially at different points and constituting the sole support thereof to hold it out of contact with the bearing when in operation, substantially as set forth.

4. The combination of the carrier and its eye, a guide-pulley, a driving-band passing round the pulley and making contact with the periphery of the carrier at opposite points, and a spring tending to carry the pulley away from the carrier, substantially as set forth.

5. The combination of a support Q having an opening *w* surrounded by an annular recess 3, a carrier with a sleeve extending into said recess, driving means acting on the periphery of the carrier at opposite points, and an oil-chamber outside of and communicating with the recess, substantially as set forth.

6. The combination of a support Q having an opening *w* surrounded by an annular recess 3, a carrier with a sleeve extending into said recess, driving means acting on the periphery of the carrier at opposite points, a guide-pulley turning in a bearing arranged in a chamber *w*, and an oil-chamber arranged to supply oil to both the recess and chamber *w*, substantially as set forth.

7. The combination of a support Q having an opening *w* surrounded by an annular recess 3, a carrier with a sleeve extending into said recess, driving means acting on the periphery of the carrier at opposite points, and a guide-pulley turning in a movable bearing, substantially as set forth.

8. The combination of a support Q having an opening *w* surrounded by an annular recess 3, a carrier with a sleeve extending into said recess, driving means acting on the periphery of the carrier at opposite points, a guide-pulley turning in a movable bearing, and a spring acting to carry the guide-pulley outward, substantially as set forth.

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

GEO. W. FOSTER.

Witnesses:

HENRY FULLER,

EDMUND W. FOTHERGILL.