

No. 785,152.

PATENTED MAR. 21, 1905.

W. P. CHRYSLER.
PISTON ROD PACKING.
APPLICATION FILED APR. 14, 1904.

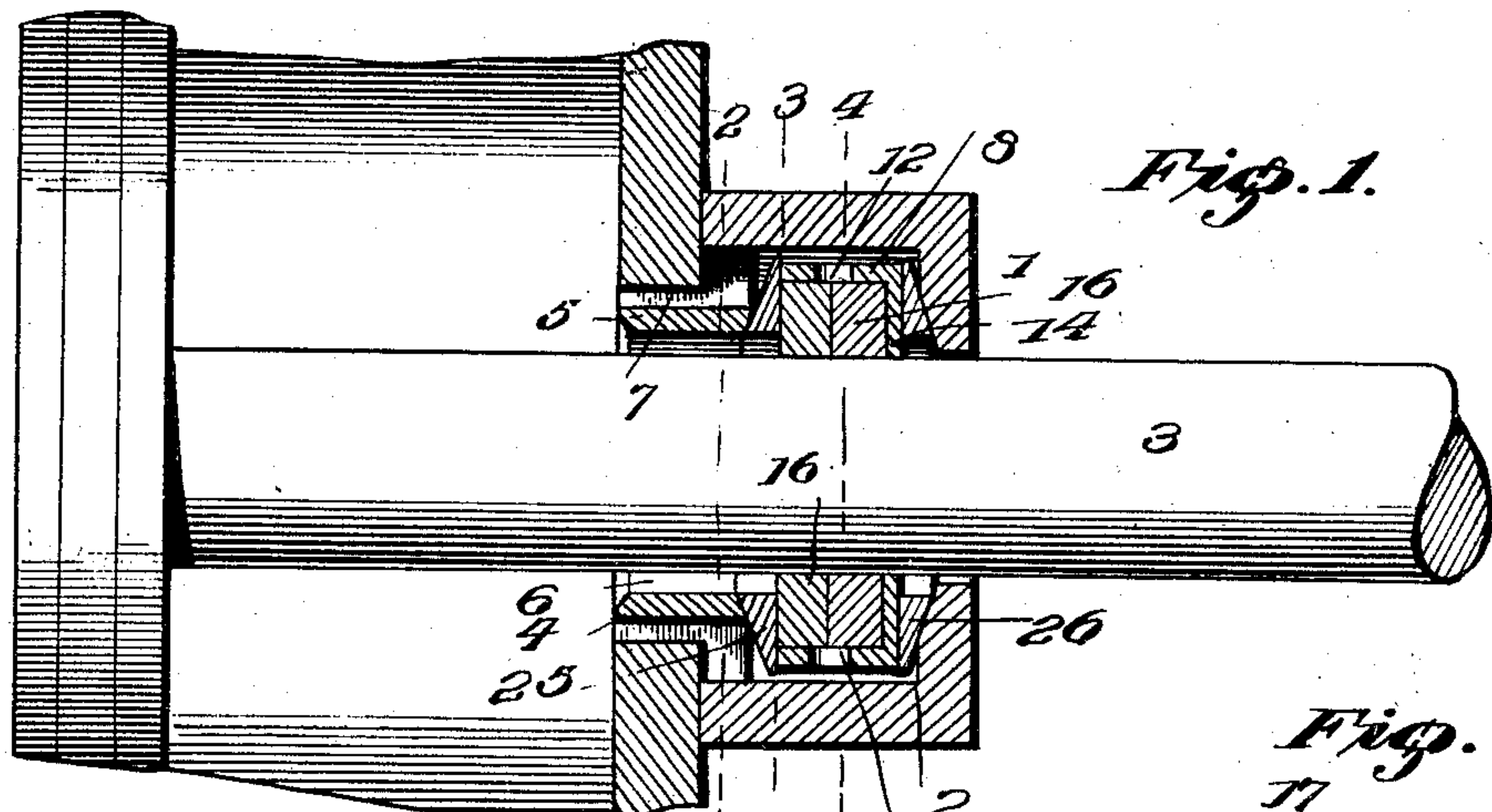


Fig. 1.

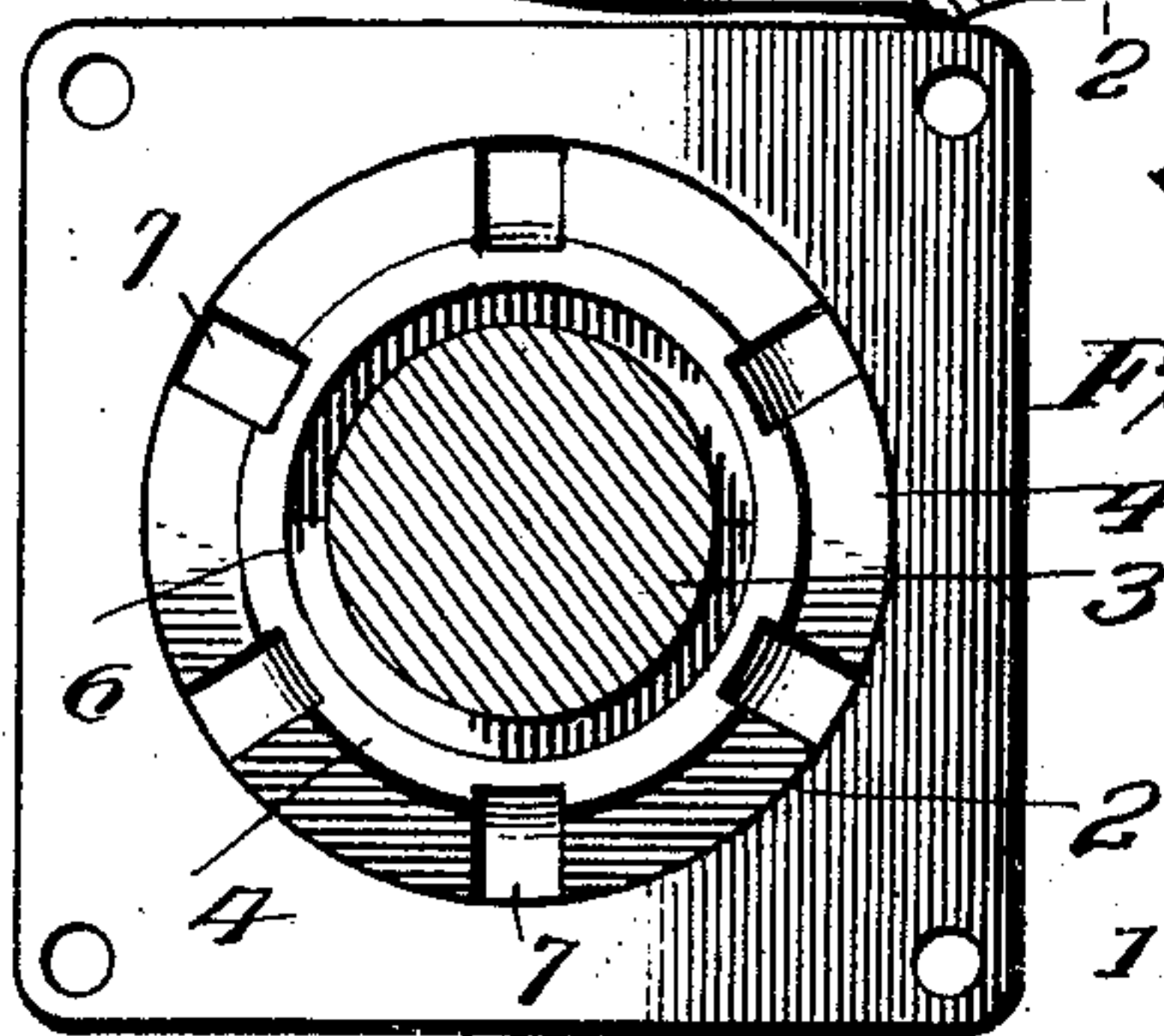


Fig. 2.

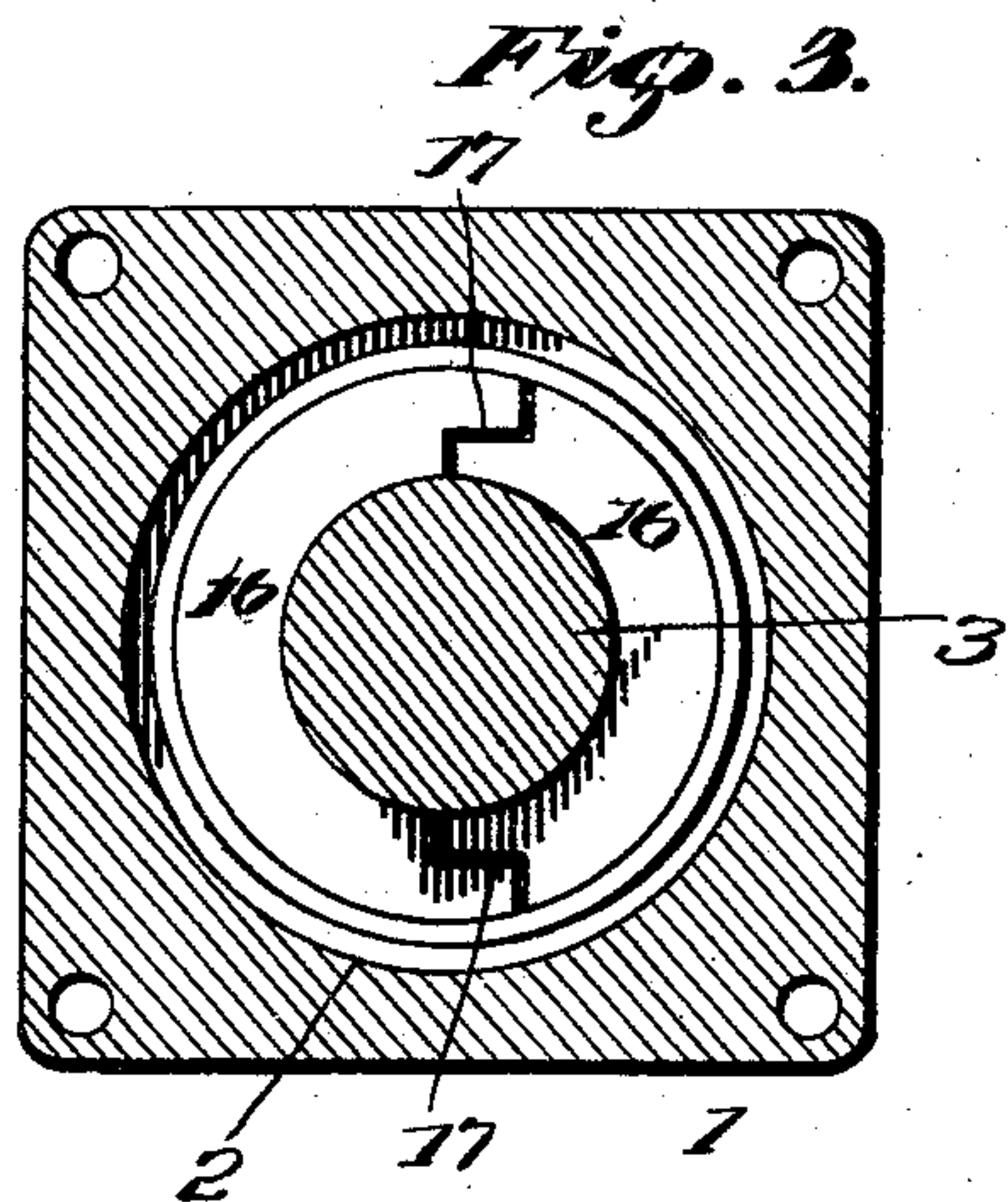


Fig. 3.

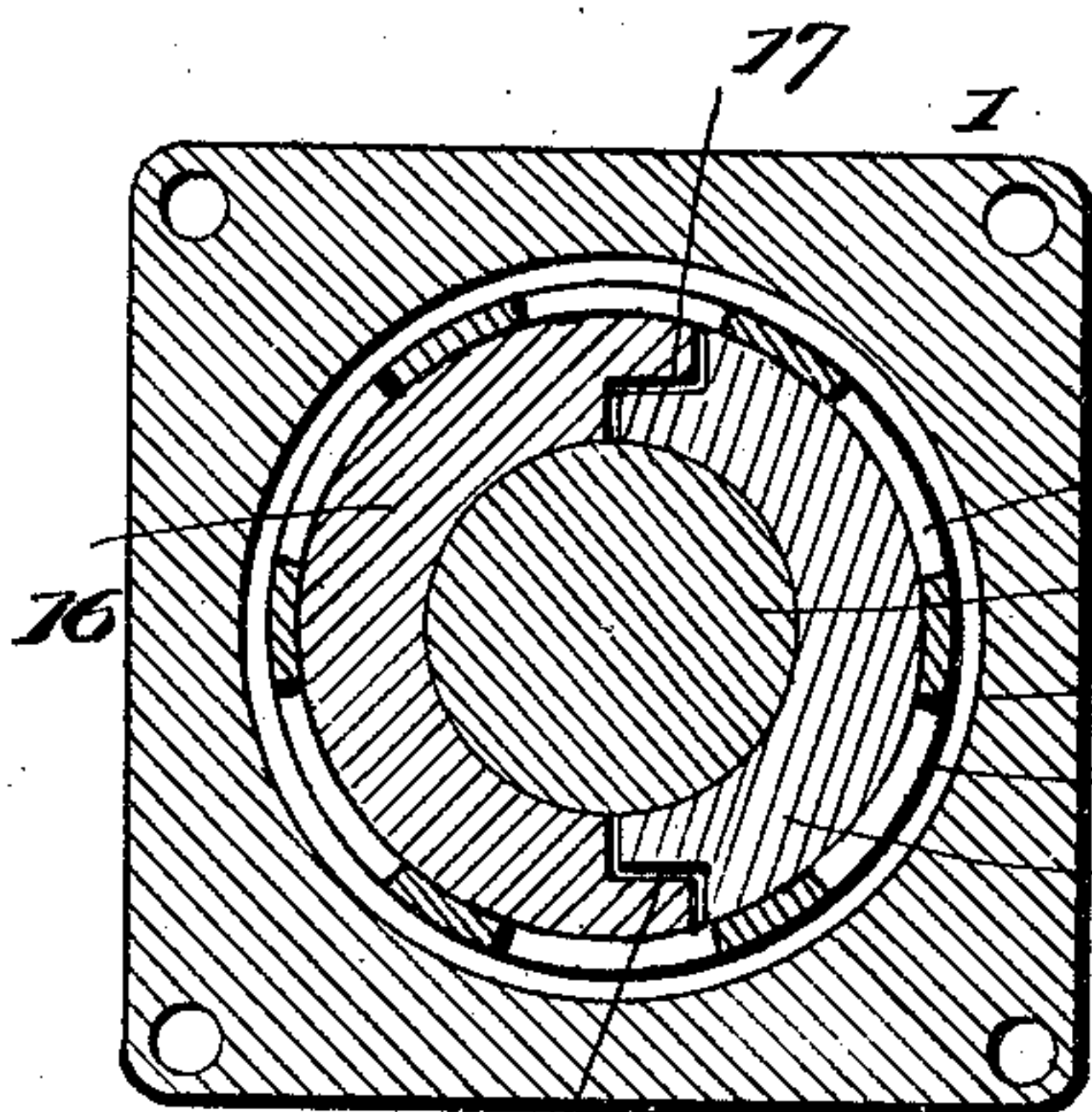
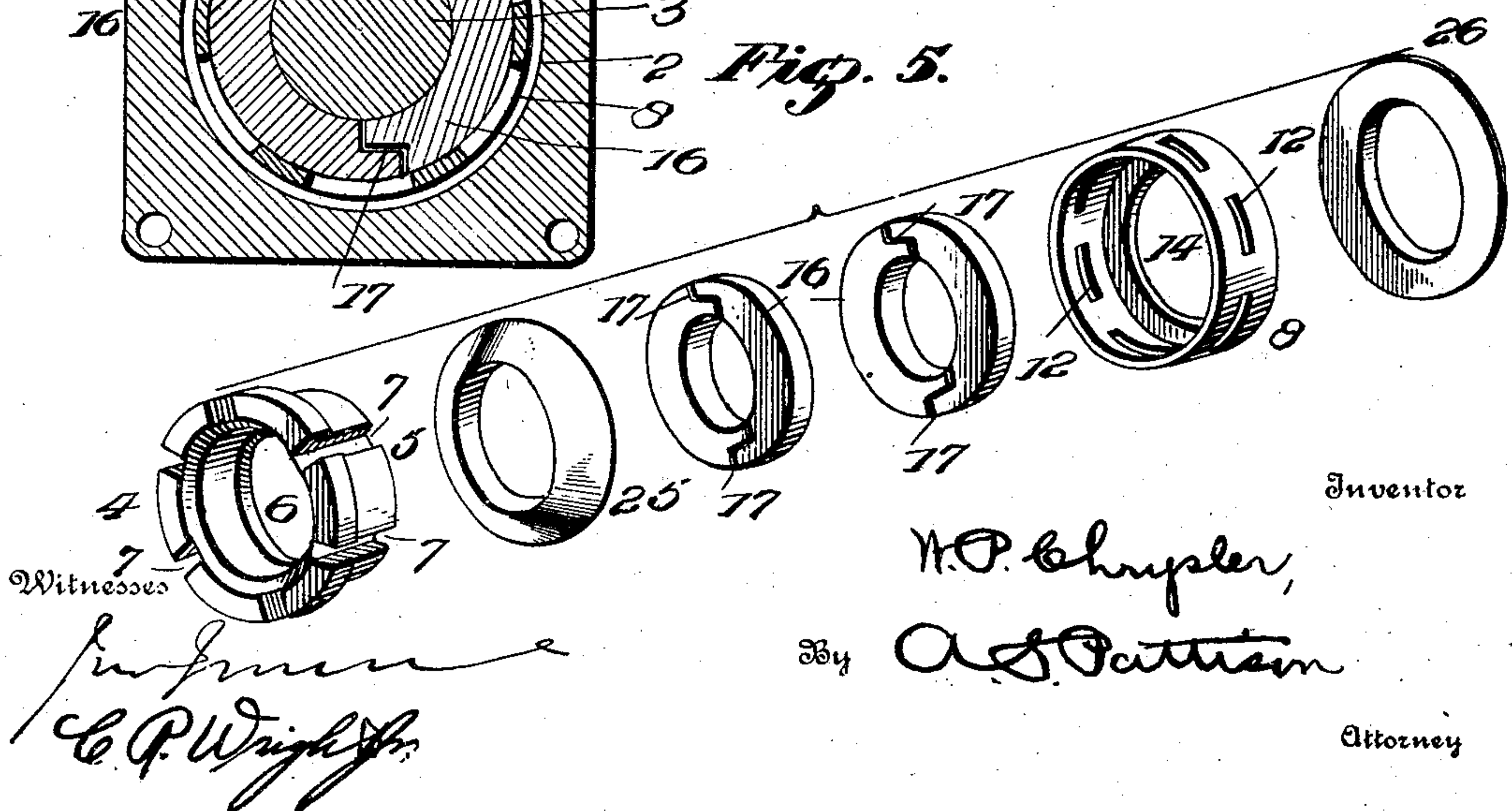


Fig. 4.

Fig. 5.



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WALTER P. CHRYSLER, OF TRINIDAD, COLORADO.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 785,152, dated March 21, 1905.

Application filed April 14, 1904. Serial No. 203,149.

To all whom it may concern:

Be it known that I, WALTER P. CHRYSLER, a citizen of the United States, residing at Trinidad, in the county of Las Animas and State of Colorado, have invented new and useful Improvements in Piston-Rod Packing, of which the following is a specification.

My invention relates to improvements in piston-rod packing, and pertains to that class of packing in which the pressure from the engine-cylinder is utilized for the purpose of pressing suitable packing-rings tightly against the piston-rod to make a steam-joint when the engine is running under steam-pressure, but in which the pressure upon the packing-rings will be relieved when the steam is cut off from the cylinder and the engine is drifting, the construction being simple, cheap, and effective and readily applied to the stuffing-boxes now in use in connection with locomotives and other steam-engines.

In the accompanying drawings, Figure 1 is a sectional view of a stuffing-box for engine-cylinders, showing my invention applied thereto. Fig. 2 is a section on line 2 2, Fig. 1. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is a section on line 4 4, Fig. 1. Fig. 5 is a perspective view of the several parts comprising my improvement.

My invention is more especially constructed for use in connection with the stuffing-boxes of locomotive-cylinders, and in which it is well known that owing to the wear of the guide the piston-rod becomes somewhat out of line with the cylinder, which necessitates a certain amount of lateral movement on the part of the packing devices in order to prevent a binding result, which would be very objectionable, as is well understood by those skilled in the art.

Referring now to the drawings, 1 indicates the usual stuffing-box, having the usual stuffing-box chamber through which the piston-rod 3 passes.

My invention pertains to the particular form of devices which I will now describe, and in which—

4 is a stuffing-box bushing. This bushing has a longitudinal flange 5, which fits tightly or snugly within the stuffing-box passage-way

and has a longitudinal opening 6, which is larger in cross-section than the piston-rod 3, as clearly shown in Fig. 1. The outer end of the flange 5 of this bushing 4 is provided with laterally-extending steam passage-ways 7, which communicate with the passage-way 2 and through which steam from the stuffing-box passage-way 2 can freely pass. A cone-shaped washer 25 abuts against the inner end of the bushing 4 with its cone-shaped portion in engagement with the said bushing. Placed within the stuffing-box 1 is a suitable, preferably cup-shaped, casing 8, and this casing is, in effect, a packing-ring retainer. This packing-ring retainer has formed in its longitudinal wall a suitable number of steam-passage-ways 12, communicating with the interior thereof, and its outer end is preferably formed with an inwardly-extending flange portion 14. As illustrated in Fig. 1, this retaining-ring 8 fits snugly between the said cone-shaped washer 25 and a second similar washer 26 and sufficiently snug to make a steam-tight joint, but permitting the lateral movement of the said retainer for a purpose to be presently explained.

Located within the retainer-ring 8 is one or more packing-rings 16, and these packing-rings 16 are formed of any desired number of sections, as shown in Fig. 4, which have straight overlapping portions, as shown at 17, to form a steam-tight joint and yet permit the packing-rings to be contracted sufficiently to make a steam-tight joint between them and the piston-rod 3.

The operation of my invention is that steam passes from the engine-cylinder through the bushing passage-ways 7 to the stuffing-chamber. The steam then passes through the openings or passage-ways 12 of the retainer-ring 8 and causes a pressure upon the packing-rings 16, which compresses or contracts the rings tightly around the piston-rod 3, making a steam-tight joint as long as the engine is working under steam-pressure. As soon, however, as the steam-pressure is cut off from the engine-cylinder and the engine is drifting then the pressure upon the packing-rings is relieved, and the damage to them under these circumstances is thus prevented.

From the foregoing description it will be observed that when the piston-rod 3 becomes out of line with the engine-cylinder on account of the wearing of the guide and other parts the retainer in which the packing-rings are located and also the packing-rings can readily vibrate laterally to follow in the consequent lateral movement of the piston-rod, and thus prevent binding and unnecessary wear of the parts and also insuring a steam-tight joint between the packing-rings and the piston-rod.

The foregoing construction enables me to form the casing 8 of a sufficient size to accommodate large piston packing-rings and their coöperating parts, thus making them long-lived and more effective and also in providing sufficient space for the lateral movement of the parts hereinbefore referred to. The arrangement is simple and cheap, easily applied, and effective in result.

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

1. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein and transversely-contracting packing-rings in said retainer.

2. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein and having steam passage-ways extending through its periphery and transversely-contracting packing-rings in said retainer.

3. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein and having steam passage-ways extending through its periphery, transversely-contracting packing-rings in said retainer, and a cone-shaped member bearing against the stuffing-box casing and having a flat face bearing against the packing-ring retainer.

4. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein, transversely-contracting packing-rings within said retainer, and cone-shaped members bearing against the ends of said casing and having straight flat faces bearing against the ends of said packing-ring retainer.

5. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein, transversely-contracting packing-rings within said retainer, a bushing within the inner end of said stuffing-box casing, and having steam passage-ways therein, and cone-shaped members bearing against said bushing and the end of the stuffing-box casing and having straight faces bearing against the ends of the packing-ring retainer.

6. A steam-pressure-actuated packing, comprising a stuffing-box casing, a packing-ring retainer therein, and contracting packing-rings within said retainer.

7. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein and packing-rings in said retainer.

8. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein, steam-compressed packing-rings within said retainer, and a cone-shaped member bearing against the stuffing-box casing and having a flat face bearing against the packing-ring retainer.

9. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein, packing-rings within said retainer, a bushing within the inner end of said stuffing-box casing and having steam passage-ways therein, and cone-shaped members at each end of the retainer and having flat faces bearing against the same and the cone faces of the same bearing respectively against the bushing and stuffing-box casing.

10. A steam-pressure piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein, packing-rings within said retainer, and a cone-shaped member bearing against the stuffing-box casing and having a flat face bearing against the packing-ring retainer.

11. A steam-pressure piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer therein, packing-rings within said retainer, a bushing within the casing, and cone-shaped members on each side of the retainer, and having cone-shaped outer faces bearing against the bushing and the casing.

12. A steam-pressure-actuated piston-rod packing, comprising a stuffing-box casing, a transversely-movable packing-ring retainer, therein and having steam passage-ways in its outer periphery, steam-compressed packing-rings within said retainer, a bushing within the inner end of said stuffing-box casing and having steam passage-ways therein, and cone-shaped members at each end of the retainer and having flat faces bearing against the same and the cone-shaped faces of the same bearing respectively against the bushing and stuffing-box.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WALTER P. CHRYSLER.

Witnesses:

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B. F. SPRINGER.