

No. 846,668.

PATENTED MAR. 12, 1907.

W. HOEY.
METALLIC PISTON PACKING.
APPLICATION FILED SEPT. 4, 1906.

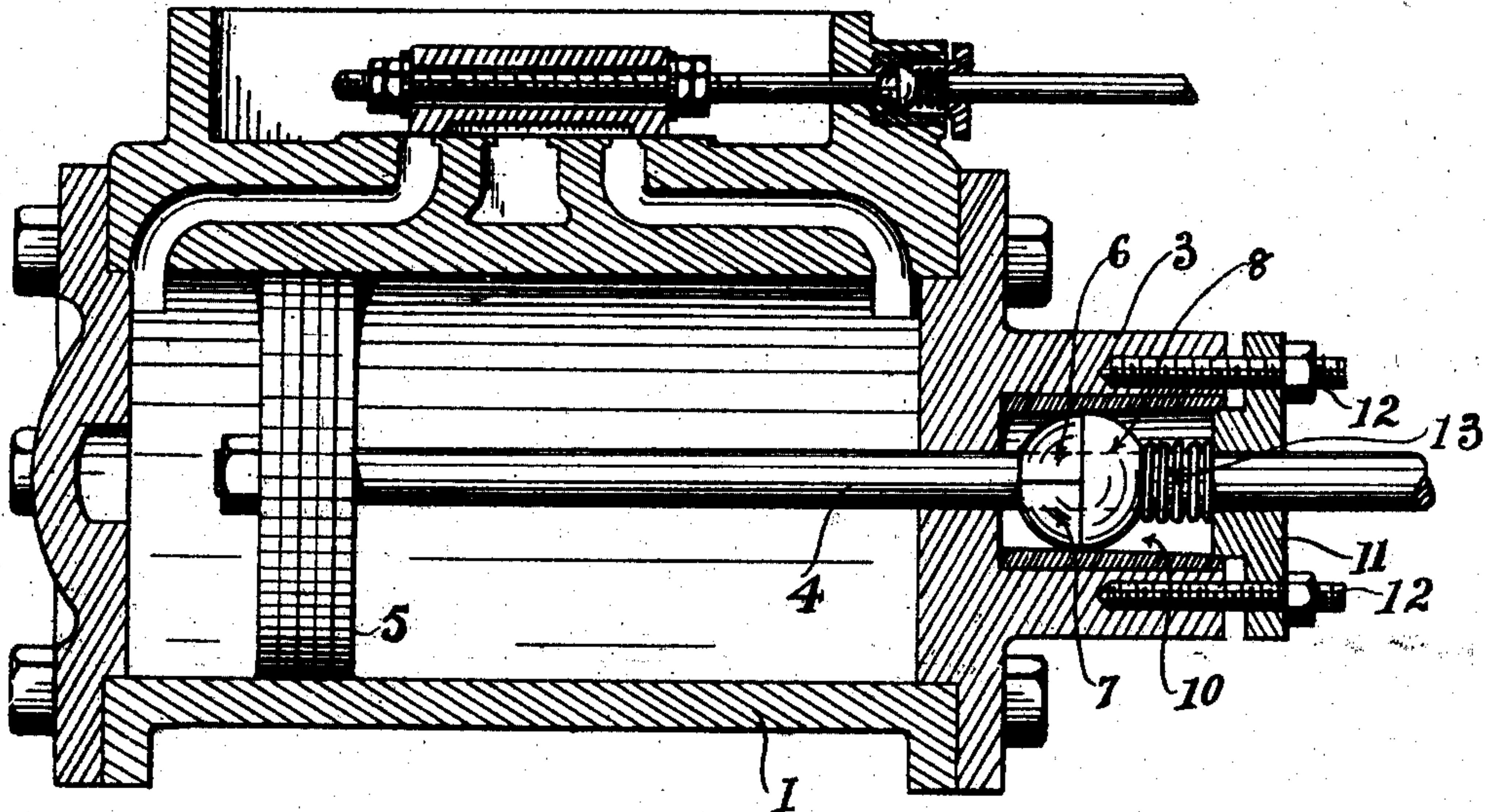


Fig. 1.

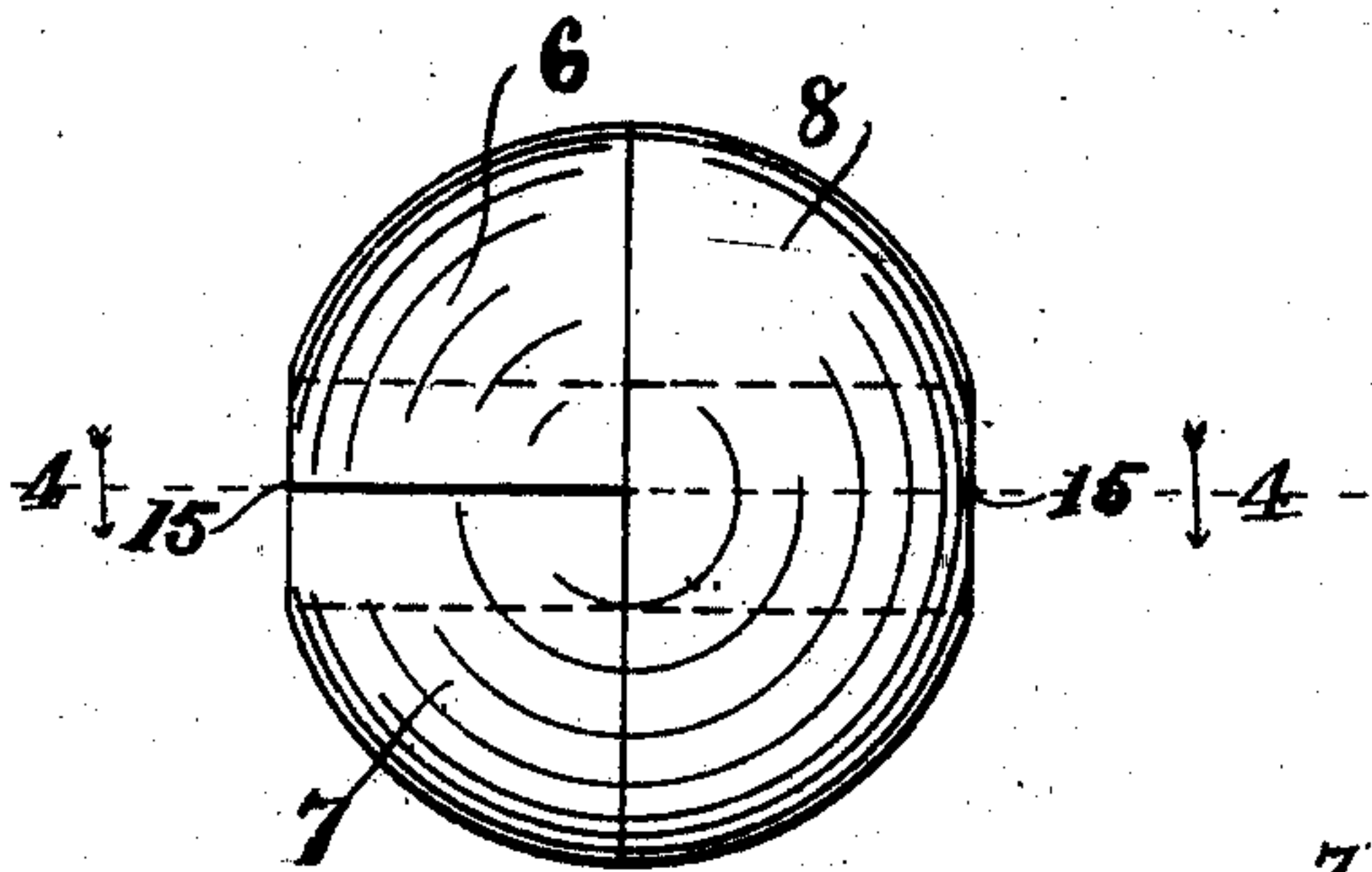


Fig. 2.

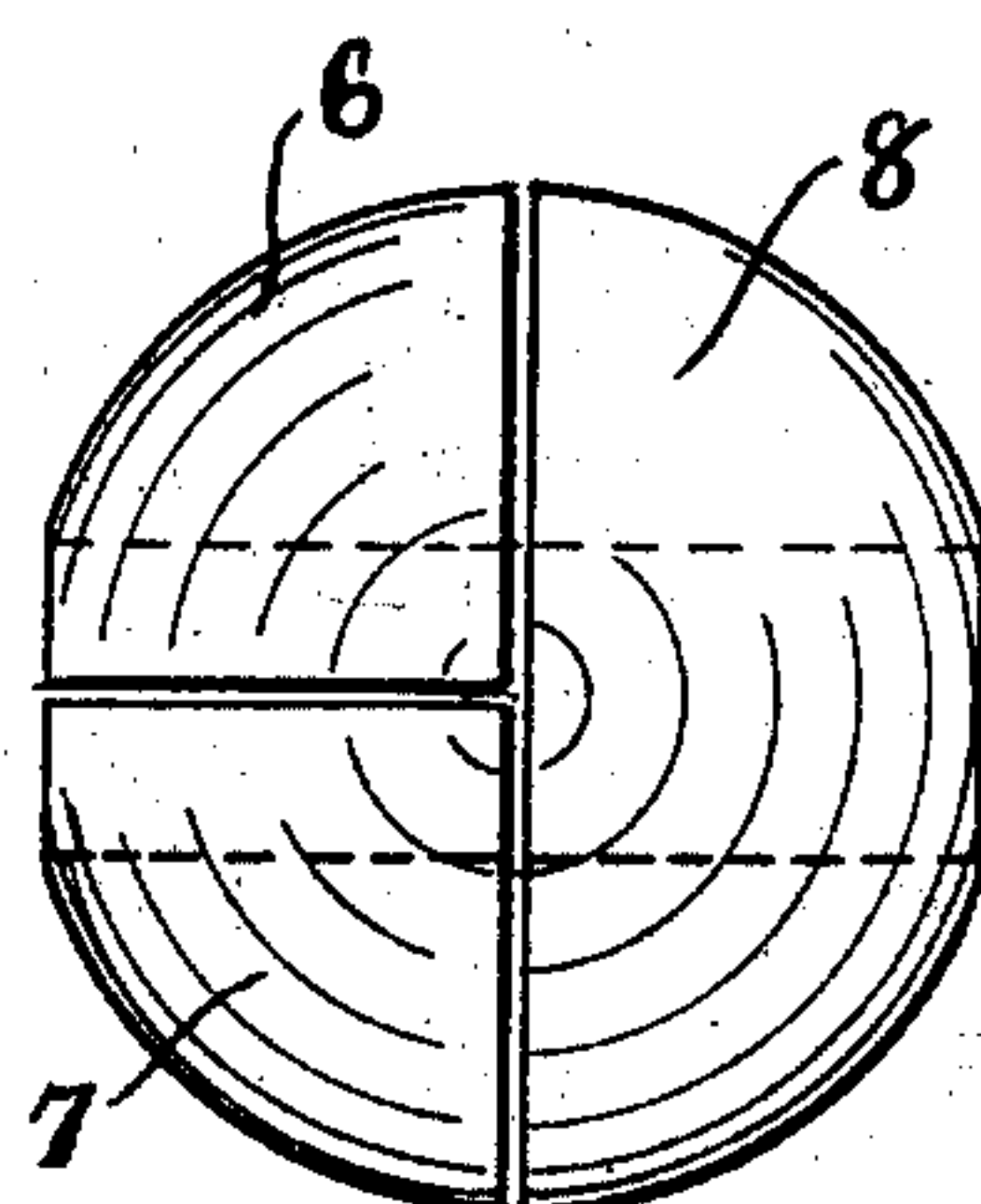


Fig. 3.

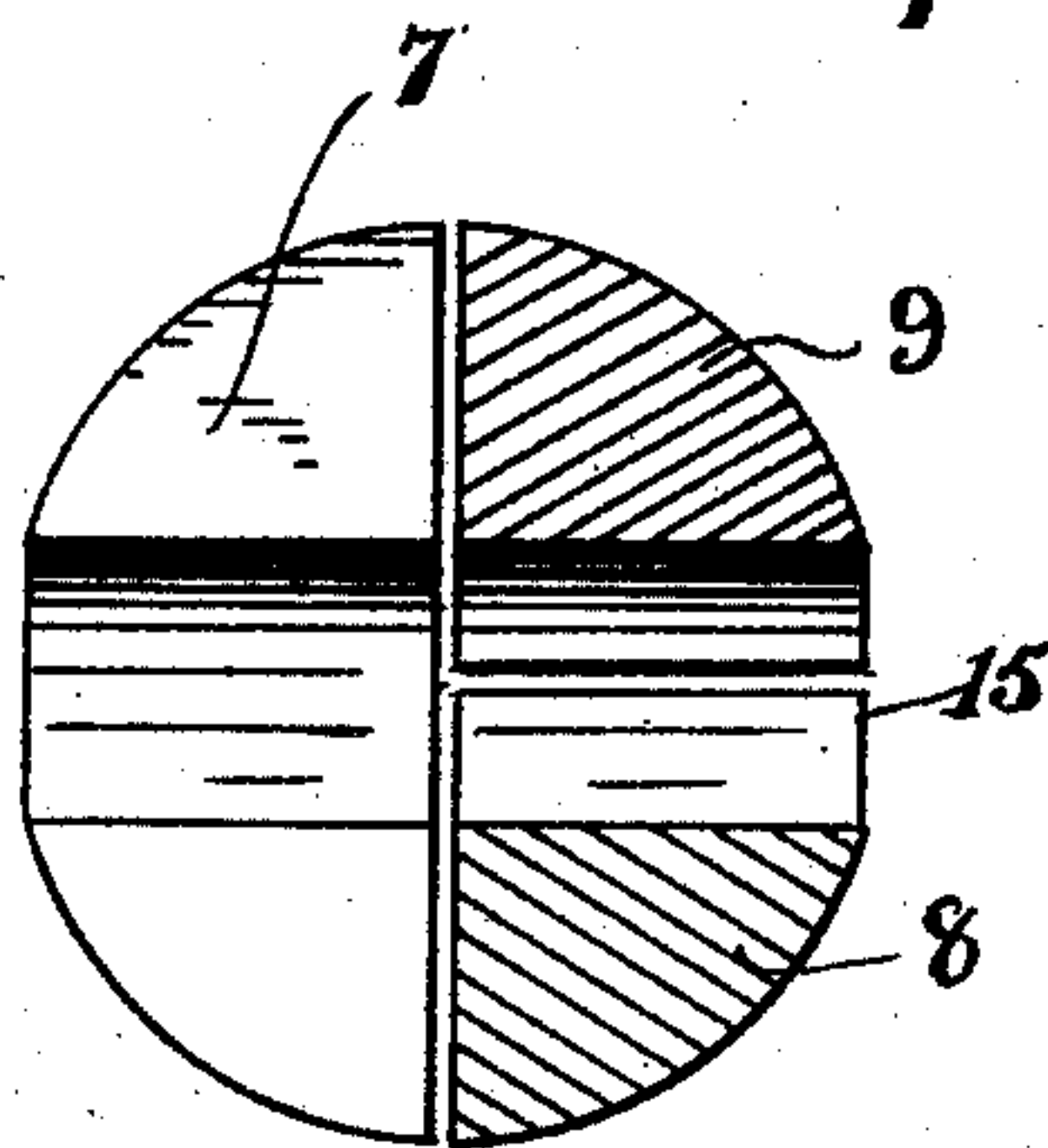


Fig. 4.

Witnesses
Palmer A. Jones.
Georgiana Chace

Inventor
William Hoey
By Luther V. Moulton
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM HOEY, OF CHICAGO, ILLINOIS.

METALLIC PISTON-PACKING.

No. 846,668.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed September 4, 1906. Serial No. 333,150.

To all whom it may concern:

Be it known that I, WILLIAM HOEY, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Piston-Packings; 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.

My invention relates to improvements in metallic piston-packings, and more particularly to such packings that are used in steam-engines; and its object is to provide a packing that automatically adjusts itself to take up the wear, and maintains its alinement relative to the piston-rod, and to provide the same with various new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a steam-engine cylinder with my improved packing applied to the piston-rod and valve-stem; Fig. 2, my improved packing enlarged and assembled as in working position; Fig. 3, the same with the parts spaced apart to show the joints, and Fig. 4, a section taken on the line 4 4 of Fig. 2.

Like numerals refer to like parts in all of the figures.

1 is a cylinder, 3 the stuffing-box, 4 the piston-rod, 5 the piston-head, 11 the packing-gland, and 12 the gland-tightening bolts, all of the usual steam-engine construction.

10 is an internally-tapered bushing, fitted into the stuffing-box 3 with its smallest diameter opening at the inner end next the cylinder-head.

13 is a coiled compression-spring surrounding the piston-rod 4, contacting the inner surface of the gland 11 at one end and the metal ball-packing at its other end.

6, 7, 8, and 9 are the respective quarters of the packing-ball as I prefer to divide the same, and 15 is the axial opening to receive the piston-rod 4.

My improved packing consists, essentially, of a metal ball made of any suitable packing metal and having an axial opening to receive the piston-rod. It is then divided transversely at right angles to the axial opening into halves. These halves are each divided, one half being divided vertically in the plane

of the axis, the other half being divided horizontally through the axis. Thus the ball is divided into quarters, the respective dividing-lines being at right angles to the next abutting division-line. In thus dividing the ball no two seams will coincide to permit leakage through the abutting seams. The outside diameter of the packing-ball is greater than the smaller opening of the internally-tapered bushing 10, but is of less diameter than the large end of its bore, so that when the ball is assembled around the piston-rod and carried into the stuffing-box its greatest transverse diameter will contact the wall of the bushing at substantially its center and form a fluid-tight joint.

The operation of my device is as follows: The packing is put in place around the piston-rod and forced into the tapered bushing until it forms a joint between the walls of the bushing and its greatest transverse diameter. The action of this tapered sleeve is to cause the several parts to contact the piston-rod and form a fluid-tight joint. The spring 13 holds the several parts closely in contact. The tension of this spring is adjusted by the bolts 12 through the gland 11.

I do not wish to be understood as limiting myself to a ball-packing divided into quarters, as other divisions will accomplish the same result; but I prefer to use the smallest possible number of divisions to reduce the number of parts.

What I claim is—

1. In combination with a stuffing-box having a sleeve provided with a tapered bore, a piston-rod, a metal ball surrounding the piston-rod and divided so that the several parts will contact the piston-rod and the walls of the stuffing-box to form fluid-tight joints, and means for holding the several parts of said ball in contact and operative position.

2. In combination with a stuffing-box having a sleeve provided with a tapered bore, a piston-rod, a metal ball having an axial opening to receive the piston-rod, and divided so that when assembled the joints meet at right angles, and means for holding the several parts of said ball in contact with the piston-rod, the walls of the stuffing-box and each other.

3. In combination with a stuffing-box having a sleeve provided with a tapered bore, a piston-rod centrally located therein, a metal ball divided into four equal parts and having an axial opening to receive the piston-rod, a

gland to said stuffing-box, a spring between the gland and the metal ball, and means for adjusting the pressure of the spring, whereby the several parts of the ball are held in contact with the piston-rod, the walls of the stuffing-box and each other to form fluid-tight joints.

4. The combination of a stuffing-box, a sleeve therein having a tapered internal bore, a piston-rod centrally located therein, a metal ball having an axial opening to receive the piston-rod, said ball being divided into four parts so that all the joints meet at right

angles, a gland to close the stuffing-box, a spring surrounding the piston-rod and in contact with the metal ball at one end and with the gland at the other end, and bolts to hold the gland in place, and adjust the pressure of the spring.

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

WILLIAM HOEY.

Witnesses:

PETER T. BURNS,
JAMES J. HARDIN.