

R. H. RICE.
PACKING.

APPLICATION FILED APR. 12, 1904.

Fig. 1.

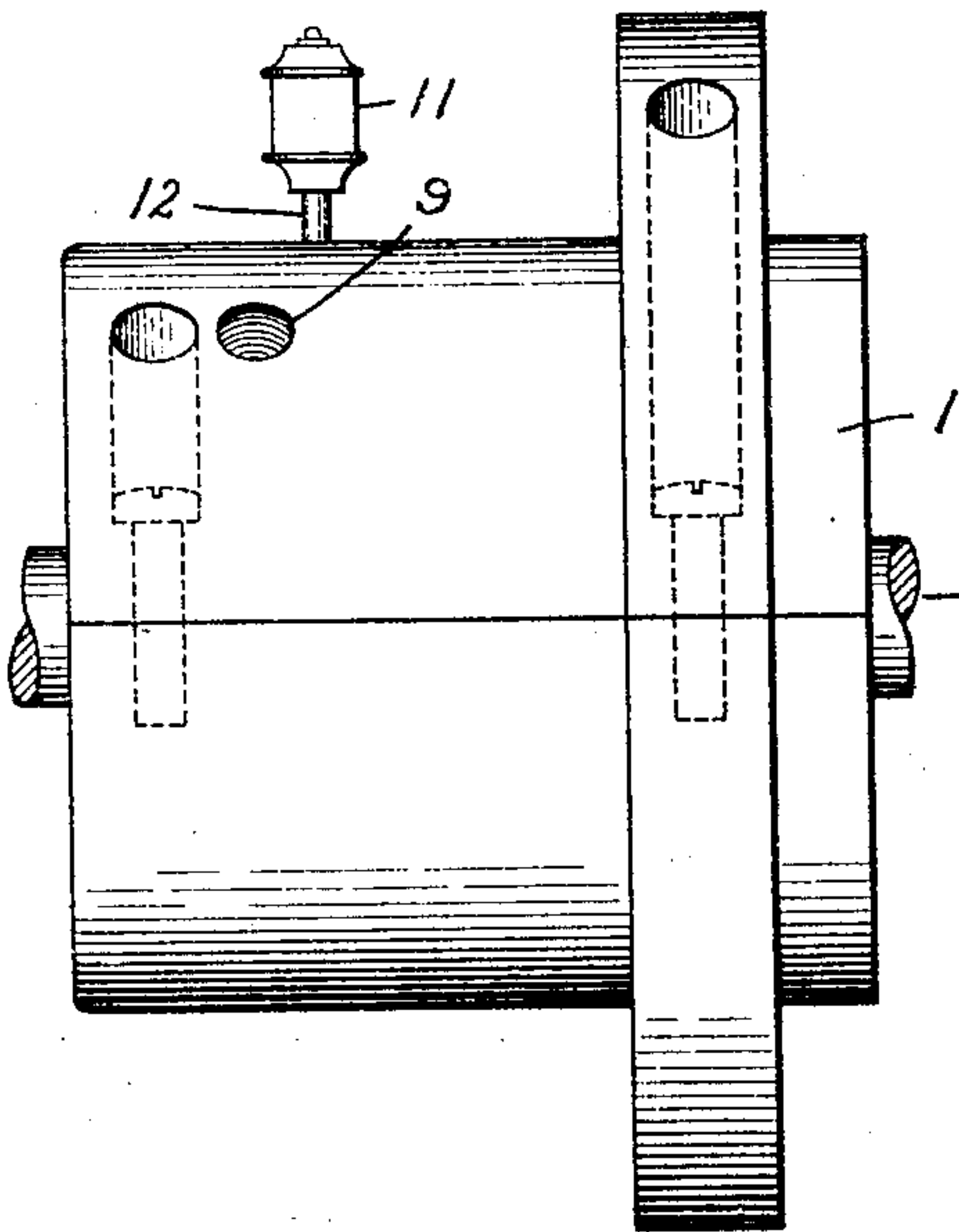


Fig. 2.

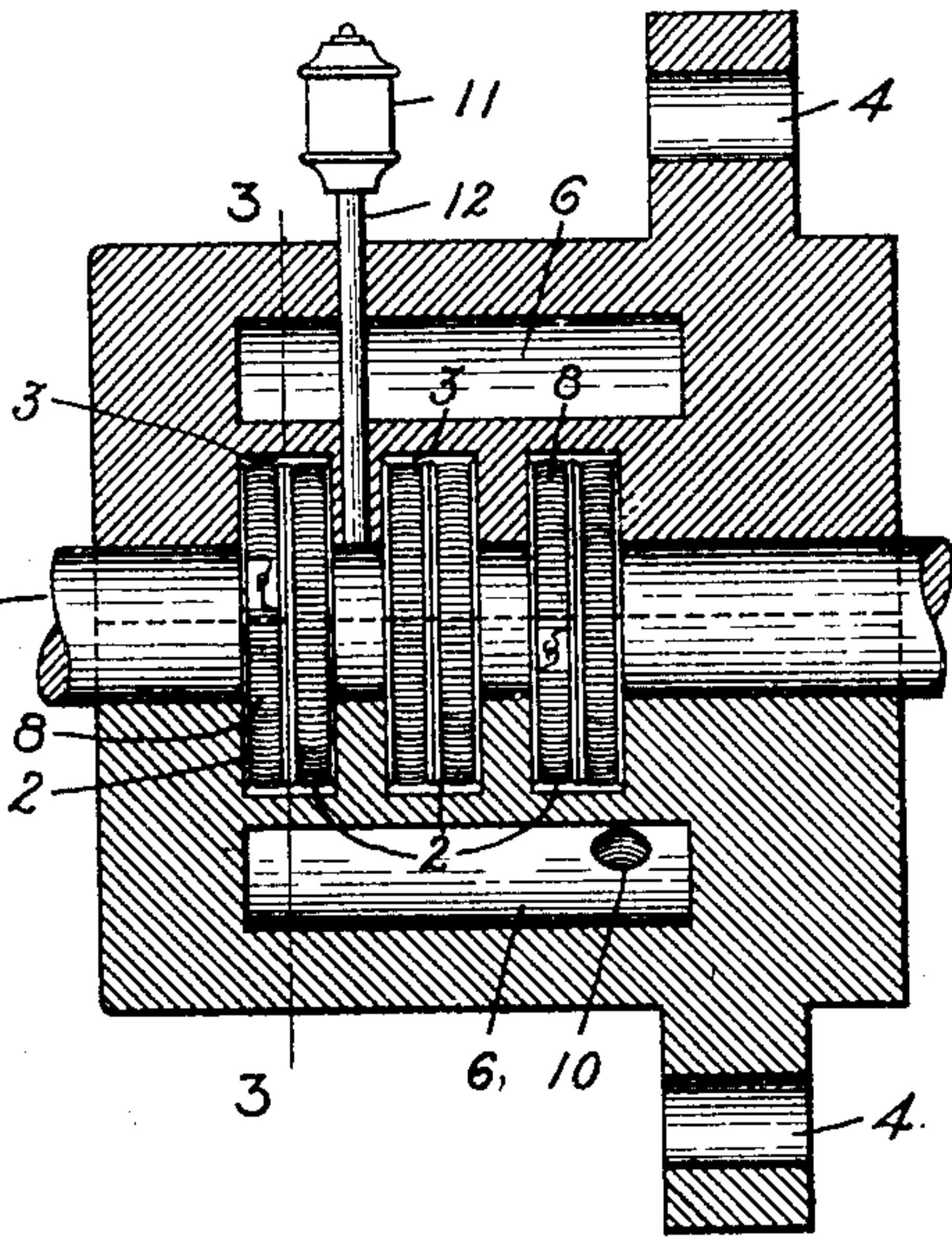
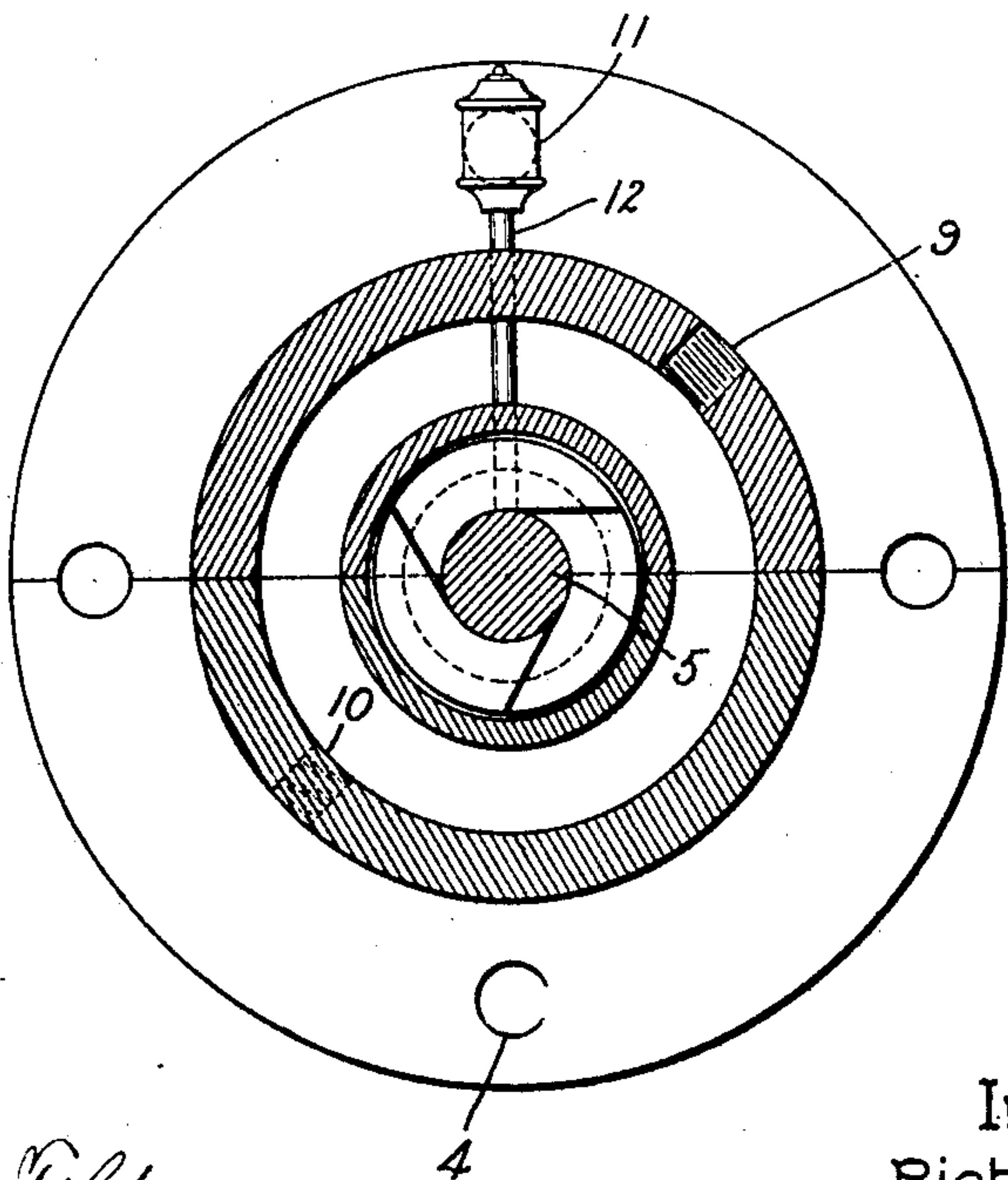


Fig. 3.



Witnesses:

George W. Tilden.
Alfred F. Macdonald.

Inventor:

Richard H. Rice.

by *Alfred F. Macdonald*

Att'y.

UNITED STATES PATENT OFFICE.

RICHARD H. RICE, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

PACKING.

No. 805,669.

Specification of Letters Patent.

Patented Nov. 28, 1905

Application filed April 12, 1904. Serial No. 202,784.

To all whom it may concern:

Be it known that I, RICHARD H. RICE, a citizen of the United States, residing at Swampscott, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Packings, of which the following is a specification.

My invention relates to a new and useful improvement in packings, and has for its object to provide a packing especially adapted for packing the reciprocating or other moving parts of engines or the shafts of turbines in which superheated steam is used; the packing being so constructed as to be cooled by a continuous stream of water passing around it.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of one embodiment of my improved form of packing; Fig. 2, a longitudinal section through the packing, showing the packing-rings in elevation, the piston-rod in place; and Fig. 3, a section on the line 3 3 of Fig. 2.

1 represents the casing which contains one or more packing-rings 2, located within annular grooves 3. The casing may be a part of the engine-frame or it may be made separate therefrom. In the present embodiment it is shown as being separate and is provided with a peripheral flange 4, by means of which it can be attached to the frame. The casing is shown as being divided longitudinally for the purpose of inserting the packing-rings and placing them around piston rod or shaft 5; but it is obvious that any form of casing or packing-rings can be used. Therefore I do not wish to be understood as limiting myself to the particular form shown.

6 is an annular chamber cored or otherwise formed in the casing which surrounds the packing ring or rings 2 and is separated therefrom by an integral or non-perforated thin wall, the object of this arrangement being to prevent the packings and their surrounding springs 8 from being unduly heated. The

chamber is provided with an inlet-pipe carrying water or other cooling fluid.

10 is an outlet passage or opening formed in the casing, which communicates with the chamber at a suitable point, usually opposite the opening 9 to afford good circulation. This passage is threaded to receive the end of the outlet-pipe.

I have shown only one inlet-passage and one outlet-passage; but it is to be understood that I may employ a greater number where the conditions of service demand it.

It will be noticed from the drawings that the area of the inlet-passage 9 is somewhat larger than the outlet-passage 10, the object of this being to retard the flow of the cooling fluid to a certain extent, so that the annular chamber 6 will be continually filled.

From the foregoing it will be seen that a continuous flow of cooling fluid into and out of the chamber can be maintained by the inlet and outlet passages and the casing and packing-rings will be kept cool. This is a great advantage in packing-rings using springs, as shown in the drawings, since by keeping the springs cool they will retain their tension.

11 is an oil or grease cup located on the upper end of a small pipe 12, which extends downward through the casing, the lower end communicating with the central opening through which the piston rod or shaft passes, thus allowing the rod or shaft to be lubricated at a point inside the packing.

I do not wish to be limited to the exact construction here shown, as slight modifications can be made without departing from the spirit of my invention.

In accordance with the provisions of the patent statutes I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof; but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a packing-ring, the combination of a casing which is provided with an opening through which the device to be packed extends, a packing mounted within the casing, a chamber formed in the casing, which normally contains cooling fluid, an integral wall

which entirely separates the chamber from the said opening, and inlet and outlet passages for conveying cooling fluid into and out of the chamber.

5 2. In a packing, the combination of a casing which is provided with an opening to receive the device to be packed, a packing-ring mounted within the casing, a fluid-containing chamber formed in the casing which is concentric
10 with the opening, an integral or non-perforated wall which separates the chamber from the opening, and inlet and outlet passages for conveying cooling fluid into and out of the chamber, the inlet-passage being larger than
15 the outlet-passage so as to keep the chamber filled at all times.

3. In a structure of the character described, the combination of a casing having an opening to receive the device to be packed, a plurality
20 of grooves formed in the wall of the opening, packing-rings mounted in the grooves, a chamber formed in the casing, which is entirely separated from the packing-containing opening by a thin wall, and a means for supplying
25 cooling fluid to the chamber.

4. In a packing, a casing cast with a central longitudinal opening through which the piston rod or shaft passes, packing-rings contained within the opening, an annular chamber
30 cast in the casing and surrounding the packing-rings which is independent of the opening, inlet and outlet openings communicating with the chamber and extending through the casing to the exterior thereof, as
35 and for the purpose specified.

5. In a packing, a casing provided with a

central longitudinal opening through which the piston rod or shaft is adapted to pass, packing-rings seated in the wall of the opening, an annular chamber formed in the casing
40 around the wall and the packing-rings and separated from the shaft and the rings by the wall, inlet and outlet openings communicating with the chamber upon opposite sides and opposite ends, said openings extending through
45 the casing to the exterior thereof, the inlet-opening being larger in diameter than the outlet-opening, as and for the purpose specified.

6. In a packing, a longitudinally-divided casing provided with annular grooves upon
50 the interior, packing-rings adapted to said grooves, an annular chamber formed in the casing surrounding the packing-rings, and inlet and outlet openings communicating with the chamber and extending through the casing
55 to the exterior, the inlet-opening being larger in diameter than the outlet, as and for the purpose specified.

7. In a packing, a casing, packing-rings contained within the casing, an annular chamber
60 formed in the casing surrounding the packing-ring, inlet and outlet openings extending from the chamber to the exterior of the casing, and an oil-cup provided with a pipe extending through the casing to the central bore thereof,
65 as specified.

In witness whereof I have hereunto set my hand this 9th day of April, 1904.

RICHARD H. RICE.

Witnesses:

DUGALD MCK. MCKILLOP,
JOHN J. WALKER.