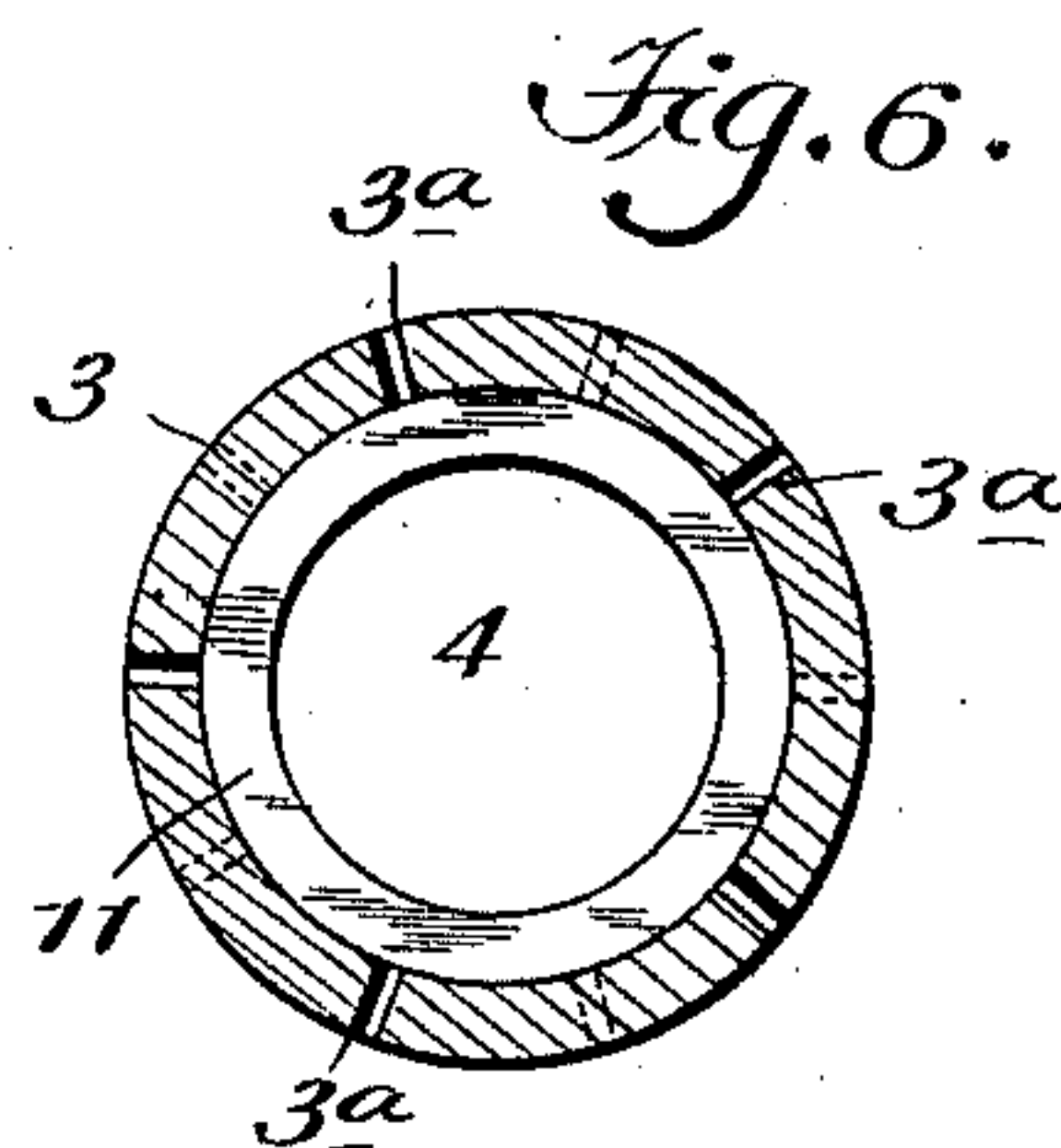
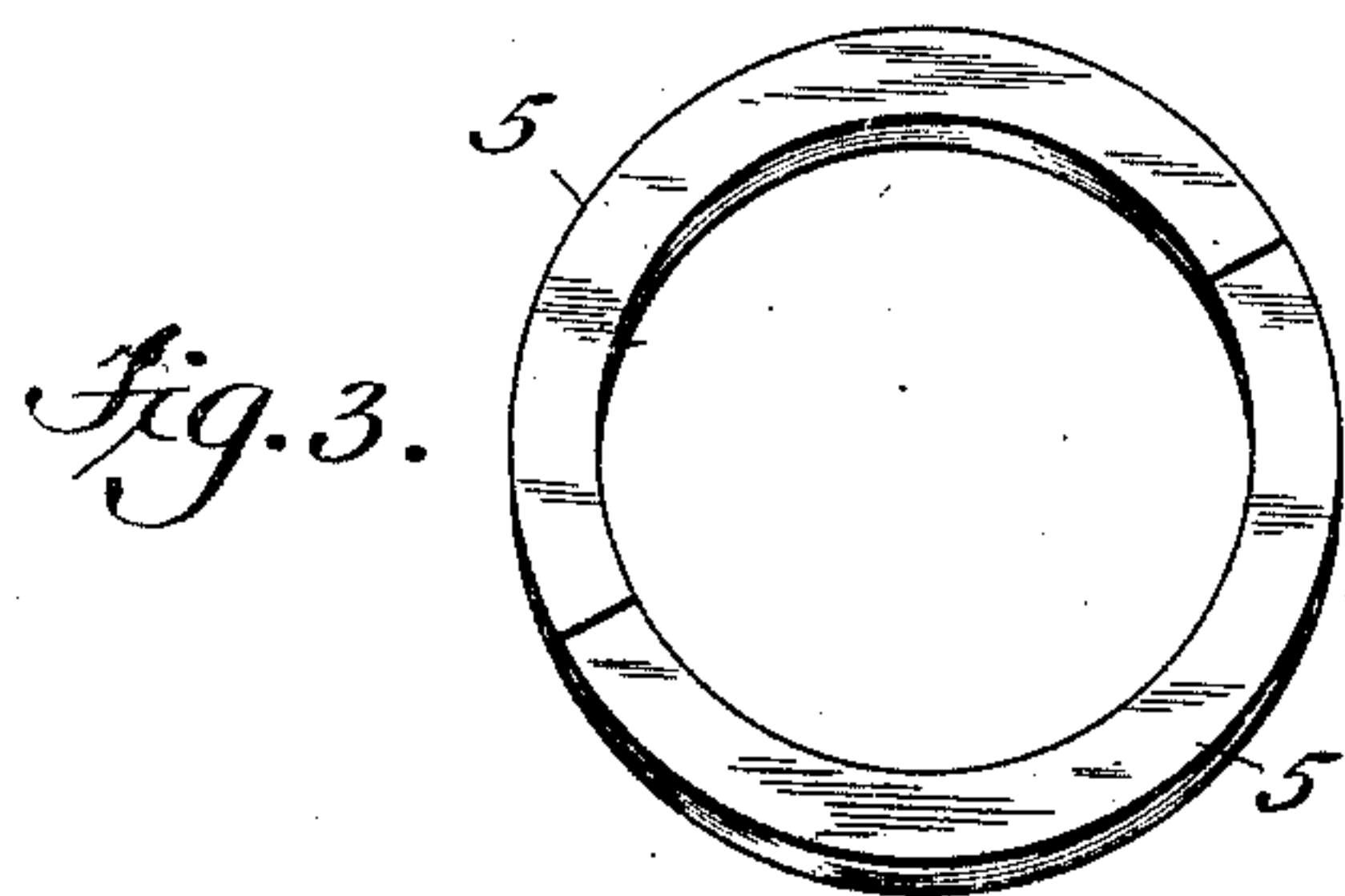
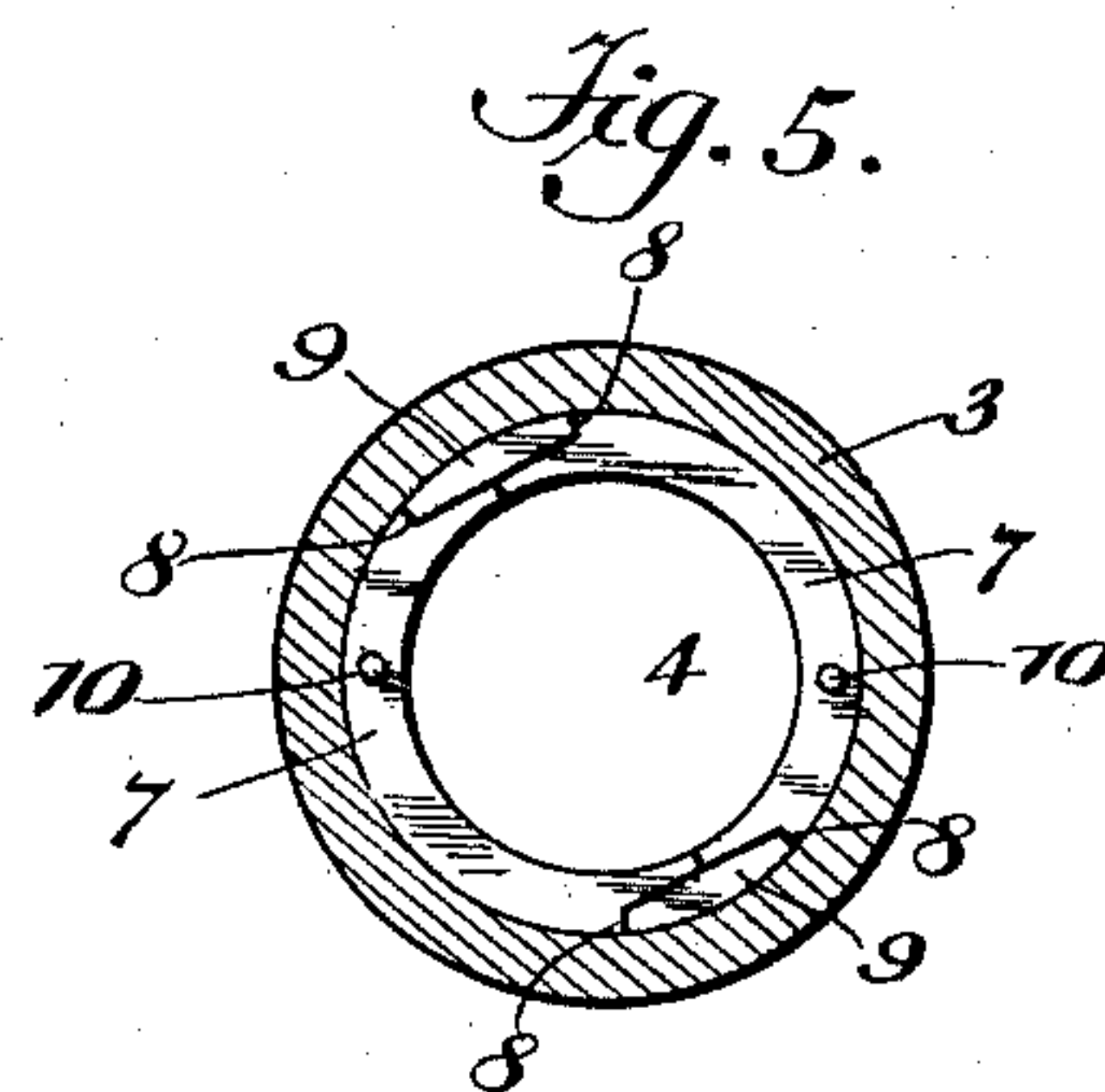
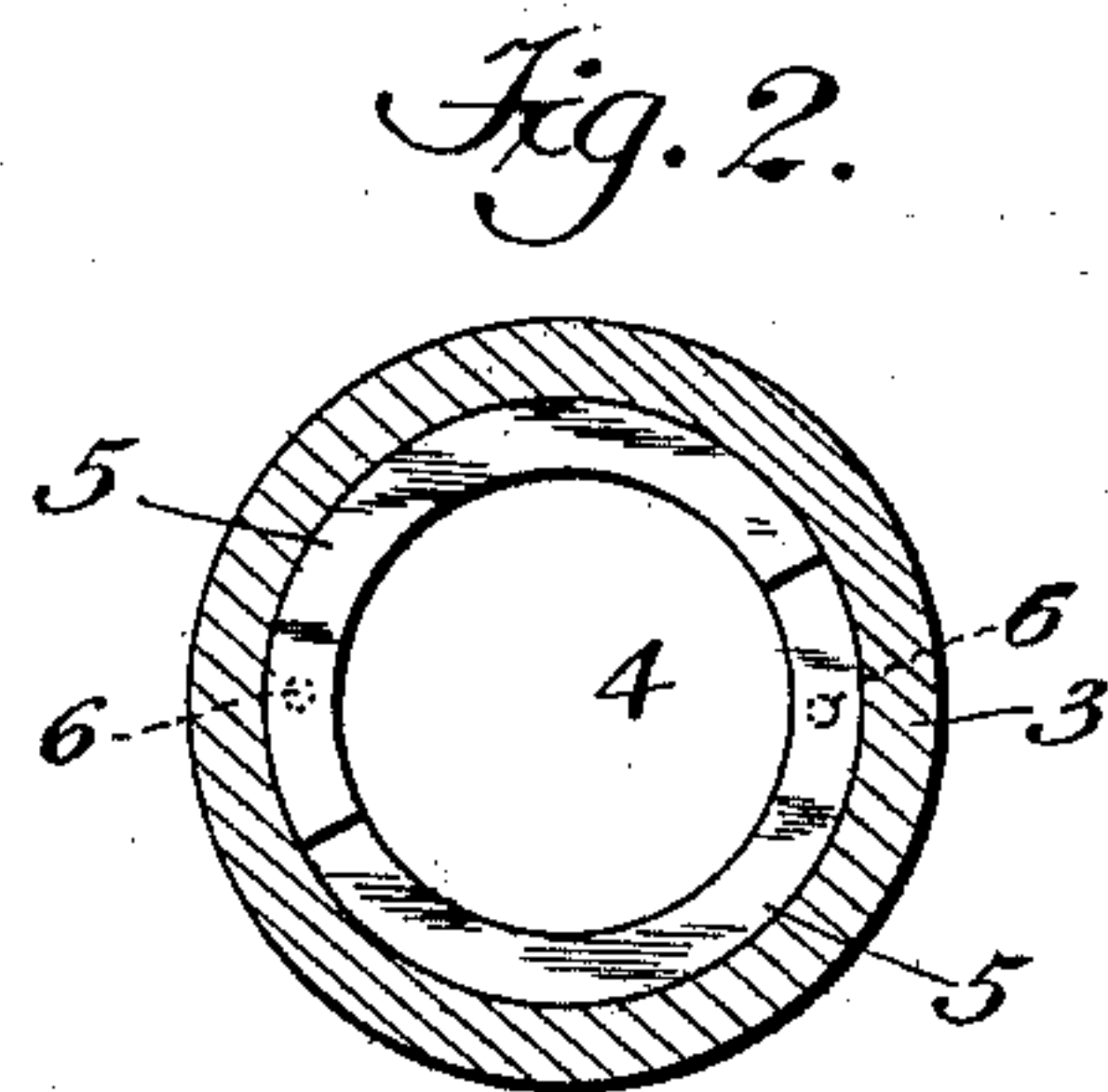
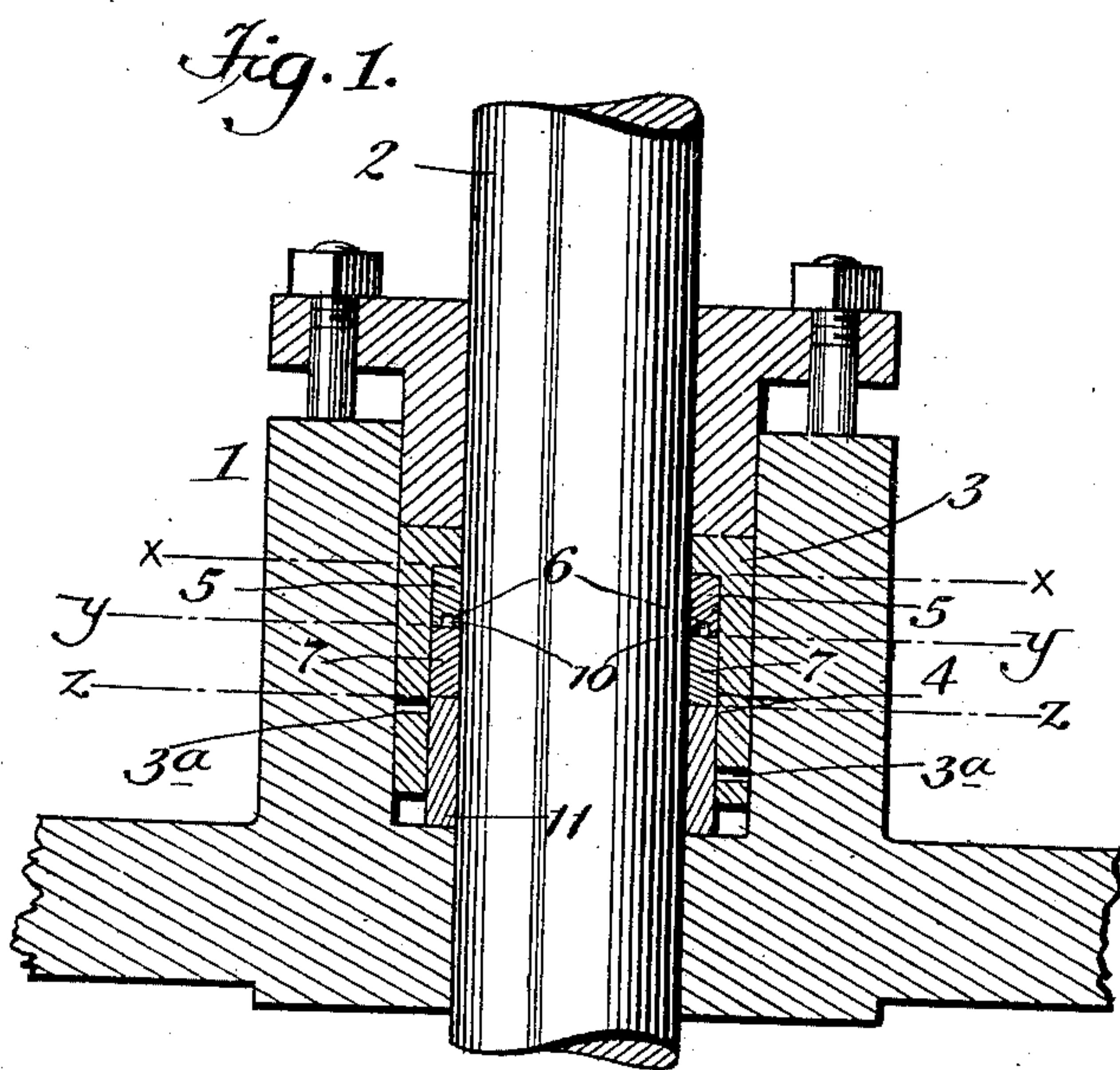


No. 711,117.

J. NEPTUNE.
PISTON ROD PACKING.
(Application filed Oct. 24, 1901.)

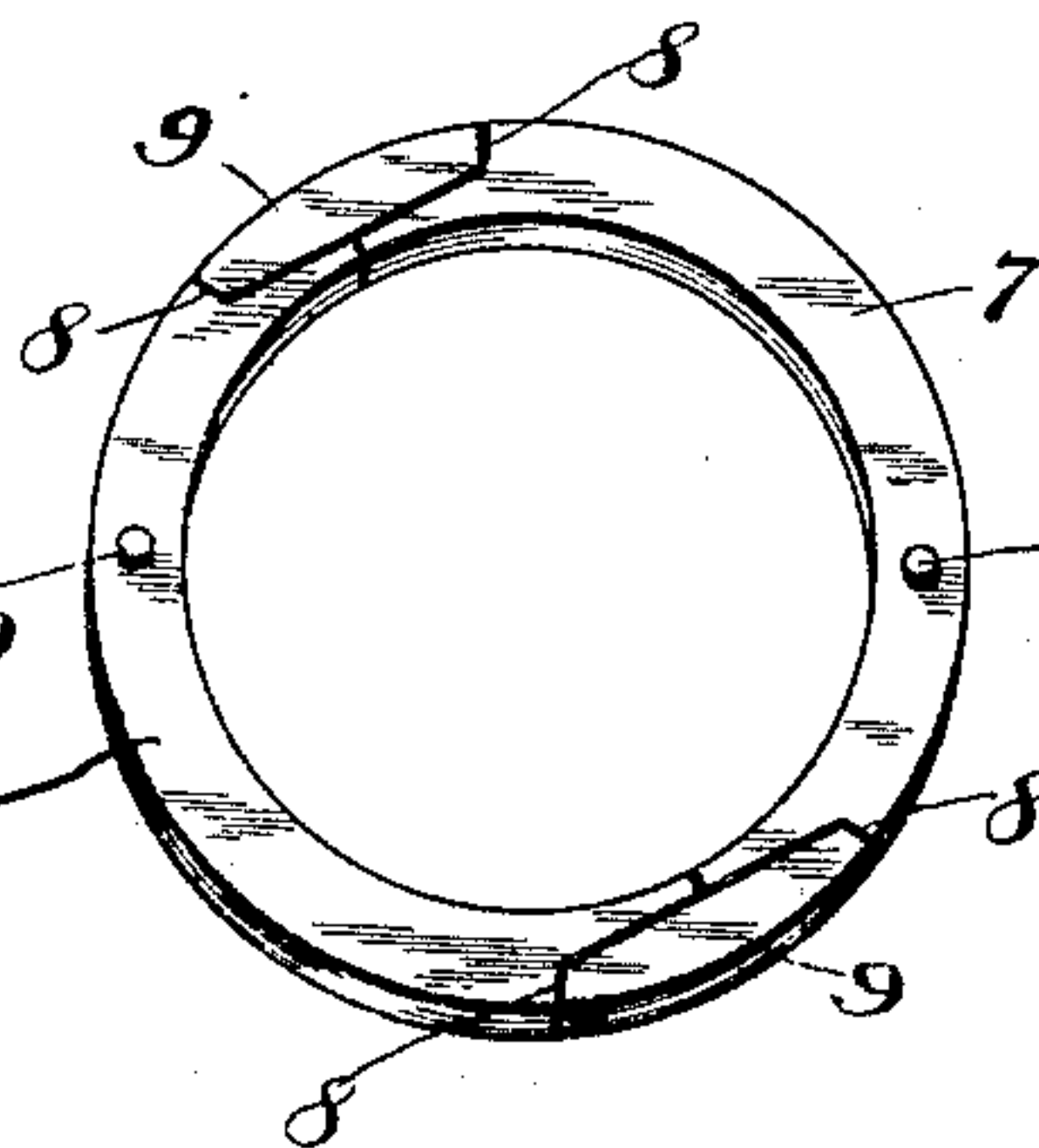
Patented Oct. 14, 1902.

(No Model.)



WITNESSES:

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INVENTOR

Joseph Neptune,

BY

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his ATTORNEY.

UNITED STATES PATENT OFFICE.

JOSEPH NEPTUNE, OF BROOKLYN, NEW YORK.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 711,117, dated October 14, 1902.

Application filed October 24, 1901. Serial No. 79,815. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH NEPTUNE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Piston-Rod Packings, of which the following is a specification.

This invention relates to piston-rod packings, and particularly to metallic packings, and has for its object to provide an improved device of this class which will permit the steam to pass through the ring and form a cushion around the ring and between the ring and the inner side wall of the packing-ring box and press the ring into constant engagement with the piston-rod, taking up the wear and tear on the ring and dispensing with the soft packing.

Another object of my invention is to provide an improved device of the class described in which means of escape are furnished for the steam in case the pressure becomes too great.

Another object of my invention is to provide an improved device of the class described which comprises interlocking segmental sections adapted to permit the contracting of the ring about the piston-rod to take up the wear on the ring.

In the drawings, Figure 1 is a central longitudinal sectional view of a piston-rod packing embodying my improvements and adjoining parts, showing the piston-rod in elevation and broken away. Fig. 2 is a sectional view of the same on line *x x*, Fig. 1. Fig. 3 is a detail perspective view of part of my improved packing-ring. Fig. 4 is a detail perspective view of the other part of the same. Fig. 5 is a sectional view on line *y y*, Fig. 1. Fig. 6 is a similar view on line *z z*, Fig. 1.

Corresponding parts in all the figures are designated by the same reference characters.

My invention comprises in general a packing-ring box provided near the end, having the larger opening with apertures through its side walls, a packing-ring seated in said box and formed in two annular parts, one of such parts consisting of segmental sections and the other of such parts consisting of segmental sections provided with means for interlocking with the sections of the first part, the sections of the second part having their

outer surface near their ends cut away, and segmental sections filling in said cut-away portions and a solid follower-ring.

In the form shown in the drawings, and which, if desired, may be the preferred form, 1 designates a stuffing-box of the common form, 2 the piston-rod passing through said box, and 3 a packing-ring box which fits in the stuffing-box and which has a series of apertures 3^a through its side walls adjacent to its larger mouth.

My improved packing-ring 4 comprises two parts, one of which parts is divided into segmental sections 5, each provided with a recess 6 in the side adjoining the other part of such packing-ring and the other of which parts is also divided into segmental sections 7, such sections 7 having their outer surfaces adjacent to their ends cut away to form shoulders 8 and inclined from such shoulders 8 to the ends of such sections 7 and small segmental sections 9, complementary to the portions cut away from the ends of two adjoining sections 7 and which serve to fill out and complete such part of the packing-ring 4. The sections 7 are each provided with small studs or projections 10, adapted to fit in the recesses 6 and lock the sections 5 and the sections 7 together.

It will be evident from the foregoing description of the packing-ring 4 that the steam will pass through between the sections of said ring and form a cushion between the outer surface of said ring and the inner wall of the packing-box 3 and press the sections of the ring 4 into close engagement with the piston-rod 2 and take up wear of said ring 4, the sectional construction of said ring 4 permitting of the contraction thereof as the bearing-surface of the same is worn away. The organization of the parts is such that if the pressure of the steam upon the parts of packing-ring 4 forces it too tightly against the piston-rod 2 the apertures 3^a will permit the excess of steam to expand into further channels and relieve such pressure.

A solid follower-ring 11 fits snugly in the packing-ring box 3 upon the packing-ring 4 and holds its parts together.

The operation and advantages of my invention will be readily appreciated and understood by persons skilled in the art to which

it appertains. Owing to the sectional construction of the packing-ring 4 the steam can pass between the parts and form a cushion around such ring between its outer surface and the inner wall of the packing-box 3 and force the parts of the ring 4 together, closing said ring 4 upon the piston-rod 2 and keeping it in close contact therewith. If the pressure becomes undue, the steam will escape through the apertures 3^a and the pressure be reduced. The amount of this pressure can be regulated by the force with which the follower-ring 11 is pressed down upon the packing-ring 4.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

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

1. In a device of the class described, a packing-ring box provided with a series of apertures through its side walls adjacent to its larger mouth, a sectional packing-ring fitting loosely in said box, and a solid follower-ring adapted to fit snugly in said box on said packing-ring and normally to cover the inner ends of the apertures.

2. In a device of the class described, a packing-ring box provided with a series of apertures through its side walls adjacent to its larger mouth, a packing-ring fitting loosely in said box and formed of two annular interlocking parts, and a solid follower-ring adapted to fit snugly in said box on said packing-ring and normally to cover the inner ends of the apertures.

3. An improved device of the class described, comprising a packing-ring box pro-

vided with a series of apertures through its side walls adjacent to its larger mouth, a packing-ring fitting loosely in said box and formed of two annular interlocking parts each composed of segmental sections and a solid follower-ring adapted to fit snugly in said box on said packing-ring and normally to cover the inner ends of the apertures.

4. An improved device of the class described, comprising a packing-ring box provided with apertures through its side walls adjacent to its larger mouth, a packing-ring fitting loosely in said box and formed of two annular parts one composed of segmental sections and the other composed of segmental sections having their outer end portions cut away to form shoulders and inclined surfaces from said shoulders to the ends of such sections and segmental sections complementary to the cut-away portions, and a solid follower-ring fitting snugly in said box on said packing-ring and normally closing the inner ends of said apertures.

5. An improved device of the class described, comprising a packing-ring box provided with apertures through its side walls located around the box near its larger mouth, a packing-ring fitting loosely in said box and composed of two annular portions one formed of segmental sections having recesses in their side edges and the other formed of segmental sections having projections in their side edges adapted to enter the recesses and having their outer end portions cut away to form shoulders and inclined surfaces from said shoulders to the ends of the sections and of segmental sections complementary to the cut-away portions and a solid follower-ring adapted to fit snugly in said box upon said packing-ring and normally to cover the inner ends of the apertures.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

JOSEPH NEPTUNE.

Witnesses:

HARTWELL T. HEATH,
JOHN M. HOCTOR.