

No. 832,434.

PATENTED OCT. 2, 1906.

W. SUDEKUM.
METALLIC ROD PACKING.
APPLICATION FILED APR. 9, 1906.

Fig. 1.

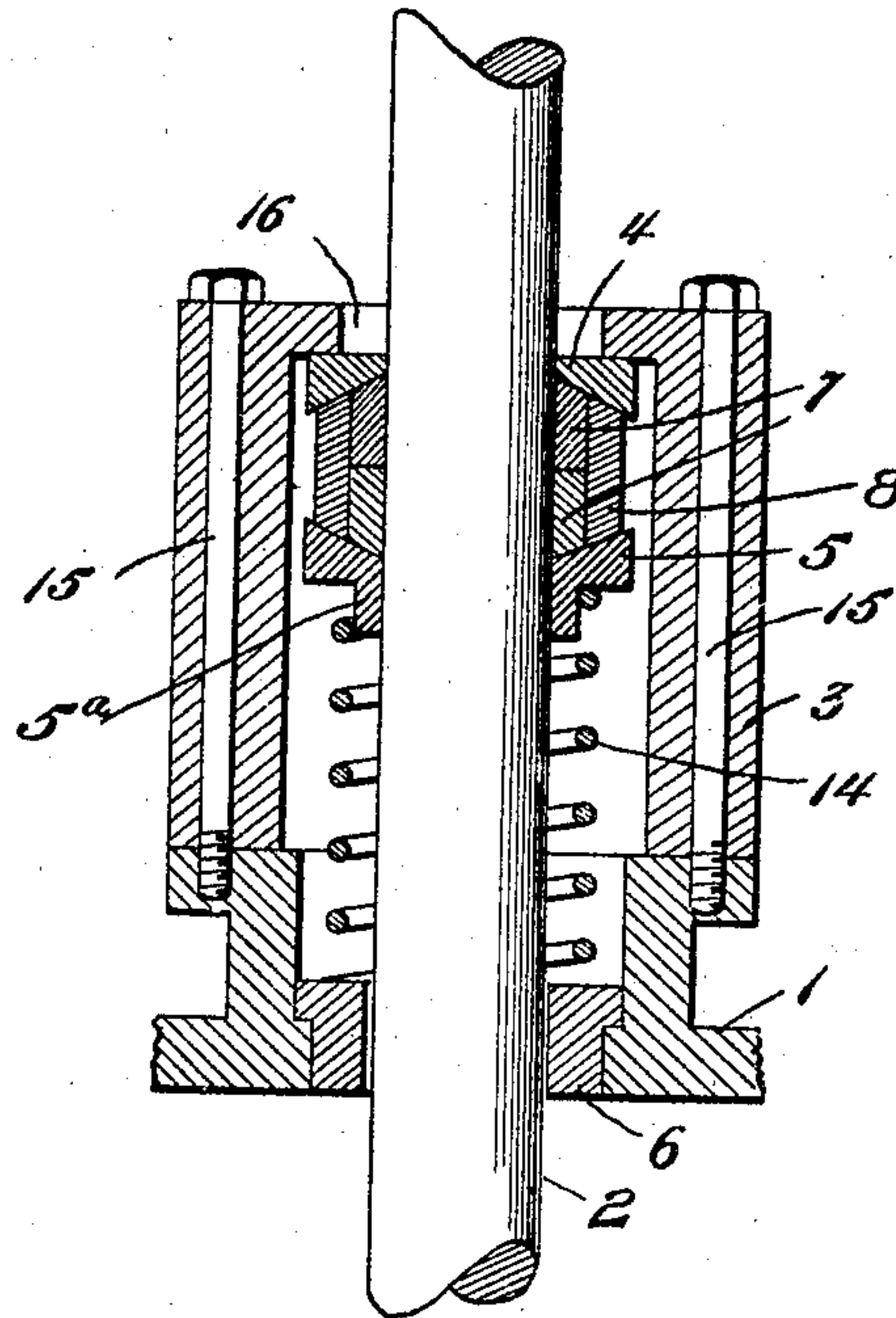


Fig. 3.

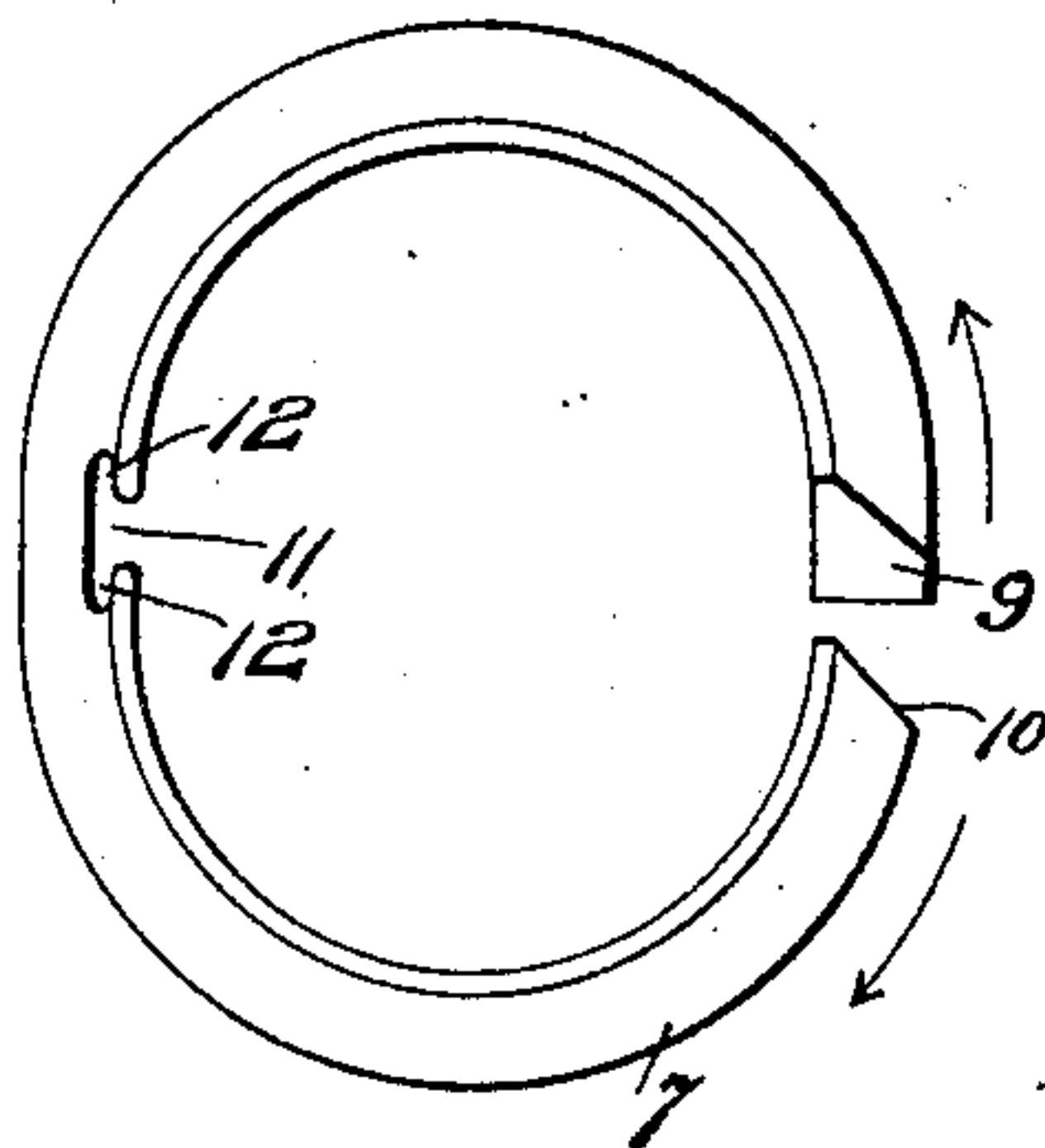


Fig. 2.

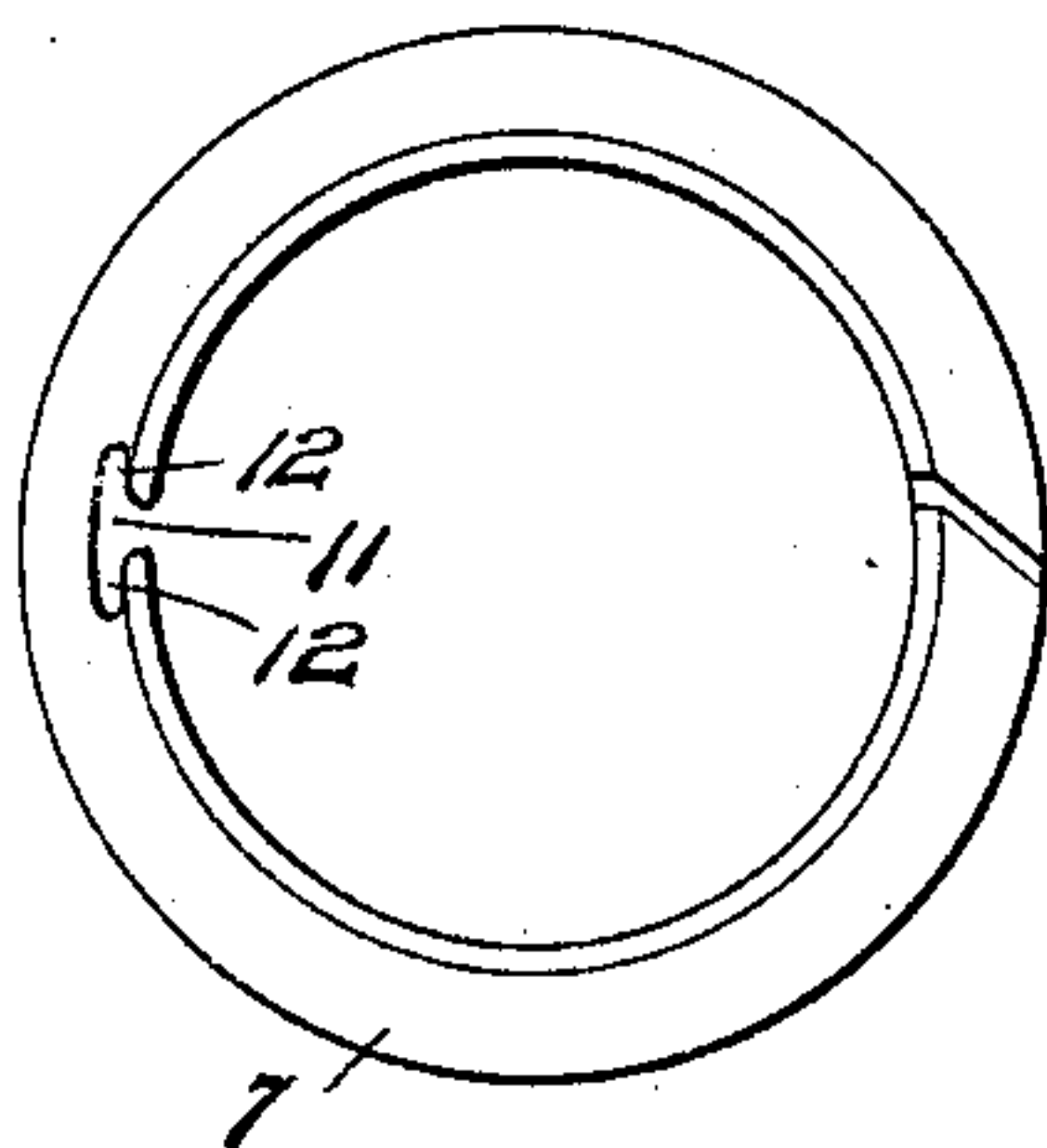
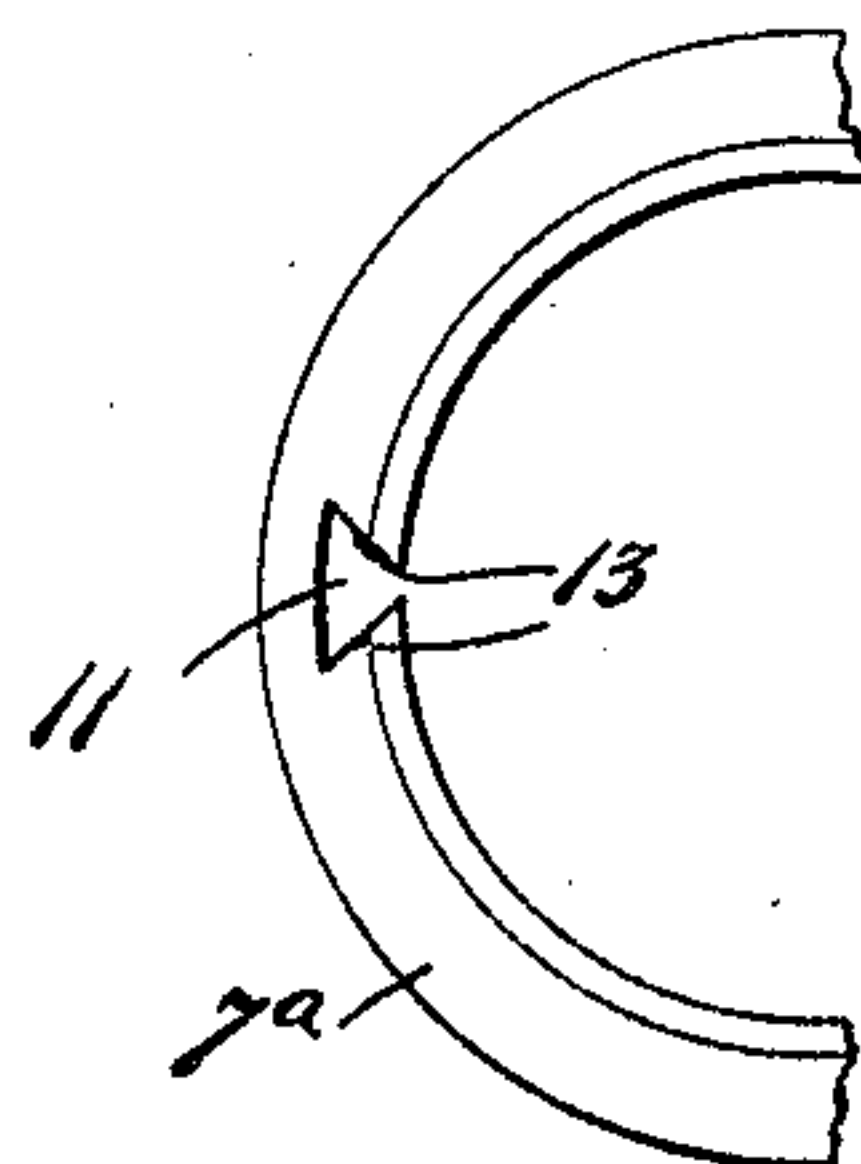


Fig. 4.



Witnesses

B. M. Offutt.

J. H. Buckhead.

Inventor,

William Sudekum,

By *Horron H. Henson,*

Atty.

UNITED STATES PATENT OFFICE.

WILLIAM SUDEKUM, OF NASHVILLE, TENNESSEE, ASSIGNOR OF ONE-HALF TO AUGUST SCHARDT, OF NASHVILLE, TENNESSEE.

METALLIC ROD-PACKING.

No. 832,434.

Specification of Letters Patent.

Patented Oct. 2, 1906.

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To all whom it may concern:

Be it known that I, WILLIAM SUDEKUM, a citizen of the United States, and a resident of Nashville, county of Davidson, State of Tennessee, have invented certain new and useful Improvements in Metallic Rod-Packing, of which the following is a specification.

My invention relates to metallic rod-packing used in steam and other fluid-pressure-operated engines, pumps, &c., and more especially to certain improvements in such packings wherein split soft-metal rings are used in conjunction with two follower-rings of hard metal for holding the said soft-metal rings in position.

My object is to provide a soft-metal ring for such packings which can be readily applied to or removed from the rod and one which is susceptible of application to rods of various diameters and which, moreover, will not require machining to fit the same to said rod, thereby dispensing with considerable cost in the manufacture of such rings; furthermore, to provide such a ring as will be efficient in maintaining a fluid-tight joint and which will readily conform itself to the rod so as to properly fit the same and be durable in use.

With these objects in view my invention consists in the novel construction of metallic packing-rings and details thereof, as described hereinafter with reference to the accompanying drawings, and more particularly pointed out in the claims hereto appended.

In the drawings, Figure 1 is a longitudinal section of a stuffing-box with rod in elevation, showing the application of my invention thereto. Fig. 2 is a plan view of one of my improved packing-rings. Fig. 3 is a plan view showing the free ends of the ring in the act of being opened for application to a rod, and Fig. 4 is a fragmentary plan view of a modified form of my ring.

Referring to the drawings, in which the same reference characters designate the same or corresponding parts in all the views, the numeral 1 indicates a part of a cylinder-head to which the stuffing box or casing 3 is removably secured by suitable threaded bolts 15, the rod 2 passing freely through the opening 16 in the outer end of the said casing or box and loosely through the bore of a gland 6, seated in the opening for the rod through the cylinder-head. Two concave follower-

rings 4 and 5, preferably of hard metal, such as brass, are mounted upon the rod within the stuffing-box with their concavities toward each other. The ring 4 bears against the outer head of the stuffing-box, while the ring 5 is provided with flange extension 5^a, forming a seat for one end of a helical spring 14, whose other end bears against the gland 6. Confined between the two followers 4 and 5 are my improved packing-rings 7, made of soft metal, such as Babbitt metal or the like. Two of these rings, which have beveled edges fitting the bevel of the concave followers, are mounted on the rod with their inner surfaces held close thereto by a confining-ring 8 of the same kind, whose body covers the joint between the abutting edges of the said rings and whose free ends break joints with the joints of the inner packing-rings.

As shown in Figs. 2 and 3, each of the rings 7 (and similarly the ring 8) is split at one side of its circumference, the free ends 9 and 10 being beveled, so that when brought near together, as in Fig. 2, they will overlap. Diametrically opposite the split ends 9 and 10 I provide an undercut groove 11 by cutting away a portion of the metal, so as to form overlapping inner walls. This removal of a certain portion of the metal, leaving the inner walls comparatively thin strips overlapping the groove thus formed, makes the body of the metal at this point susceptible of ready manipulation when heated to a sufficient degree by a torch or the like, so that the ring can be easily bent to increase or decrease its diameter for adapting it to various sizes of rods, and it also makes it possible to open the ring sufficiently without injury thereto to permit its removal from the rod without disconnecting it, for it is only necessary to remove the stuffing-box gland or cover, as by removing the bolts 15, freeing the packing from the spring and opening the rings, as indicated by the arrows, Fig. 2, to remove them from the rod. With a ring so constructed I have found in practice that without any machining or expensive milling operation to fit the ring to a given rod I can readily apply a ring of a given diameter to rods varying as much as and even more than a quarter of an inch by simply cutting a quarter of an inch, more or less, from the free ends 9 and 10 of the ring, thus permitting the ends to contact closely, as in Fig. 2, to fit smaller

sizes of rods. This adaptability greatly reduces the cost of manufacture as compared to the rings of this type as heretofore made, and, moreover, the rings applied to the rod
 5 very readily work down to the proper surface, so that the internal contour of the ring, even when changed, as above noted, is practically undisturbed and readily conforms to the rod.

10 A modified form of ring 7^a, Fig. 4, may be used, if desired. In this form the walls 13 overlap the recess of groove 11; but they are not quite so thin as the walls 12, Fig. 3, and hence the groove 11 should be somewhat
 15 deeper.

The form of stuffing-box shown, it should be observed, is merely one form with which my packing-ring can be used and is shown simply for convenience of illustration.

20 I am aware that soft-metal packing-rings, both split and sectional, with beveled edges, have been hitherto proposed and also that concave follower-rings for supporting metallic rod-packing rings are old. Hence I do not
 25 claim such features broadly; but

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

1. In a metallic rod-packing, the combination with the rod, and cylinder-head, and a
 30 set of oppositely-disposed concave follower-rings, of a spring between the cylinder-head and one of said rings for holding them outwardly from the cylinder-head, a set of soft-metal packing-rings confined between said
 35 followers, said rings being split at one side and having an undercut groove at the opposite side thereof, substantially as described.

2. In a metallic rod-packing, the combination with the rod, and cylinder-head, and a
 40 set of oppositely-disposed concave follower-

rings, of a spring between the cylinder-head and one of said rings for holding them outwardly from the cylinder-head, a set of soft-metal packing-rings confined between said followers, each of said rings having a groove 45 at its inner wall opposite the split with their inner walls overlapping the groove, substantially as described.

3. The herein-described improved metal packing-ring, consisting of a split soft-metal 50 ring, having an undercut groove in its inner wall opposite the split, substantially as described.

4. The herein-described improved metal packing-ring, consisting of a split soft-metal 55 ring having a groove in its inner wall opposite the split in the ring with the inner walls overlapping said groove, substantially as described.

5. The herein-described improved metal 60 packing-ring, consisting of a split soft-metal ring, having one or more beveled edges and provided with an undercut groove in its inner wall opposite the split, substantially as described. 65

6. The herein-described improved metal packing-ring, consisting of a split soft-metal ring having one or more beveled edges and provided with a groove in its inner wall opposite the split in the ring with the inner walls 70 overlapping said groove, substantially as described.

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

WILLIAM SUDEKUM.

Witnesses:

R. G. COURTNEY,
 H. I. HOLBACH.