

(No Model.)

W. I. PAGE.
METALLIC PACKING.

No. 424,814.

Patented Apr. 1, 1890.

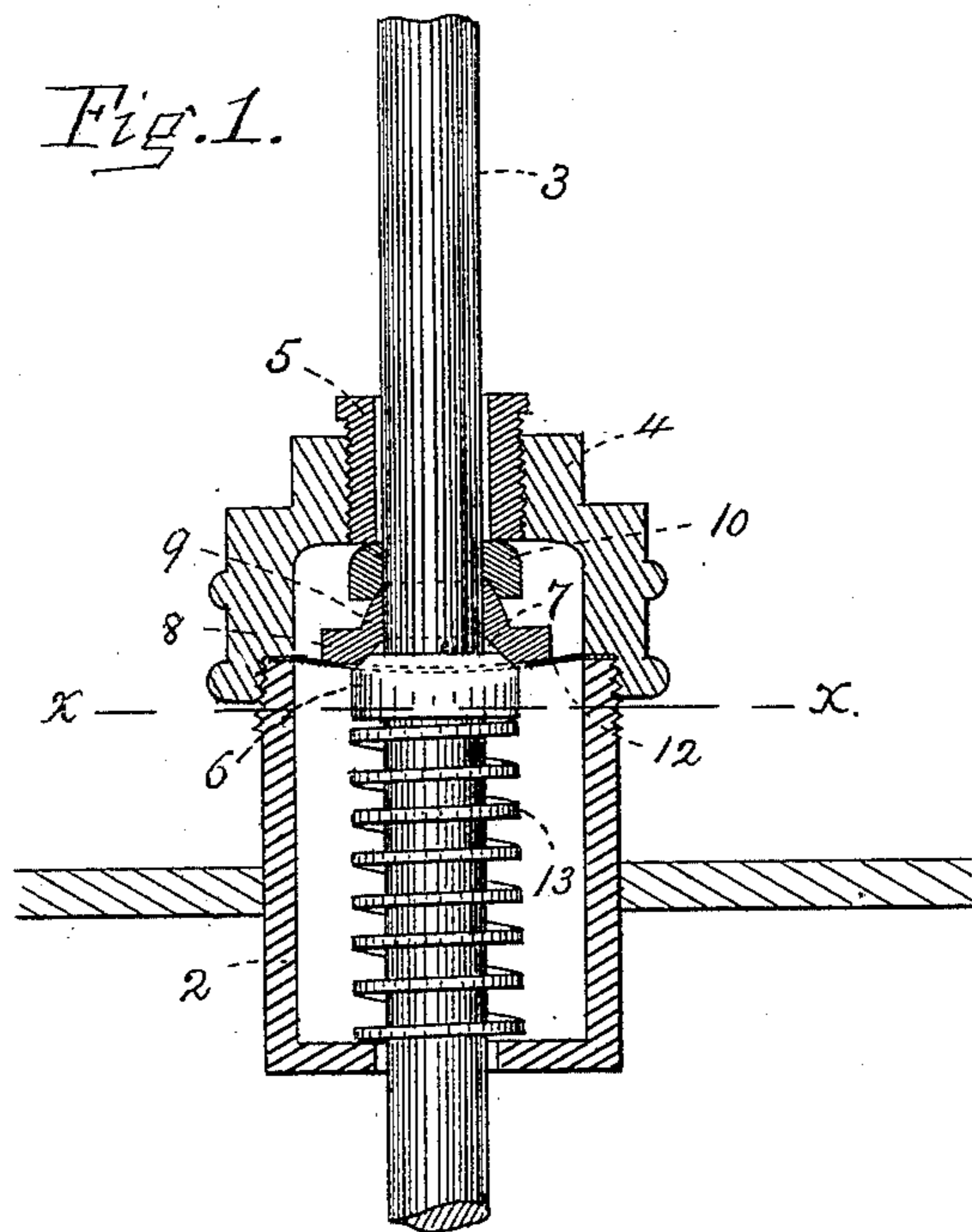


Fig. 3.



Fig. 2.

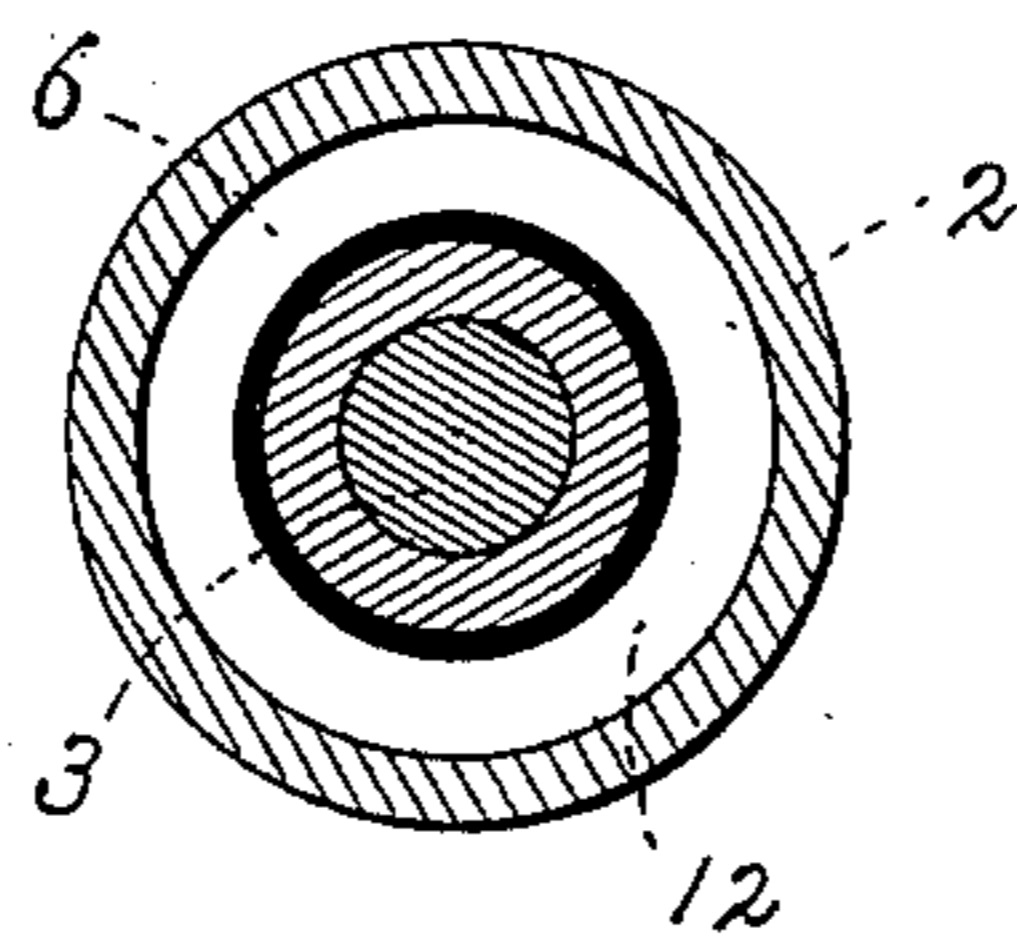
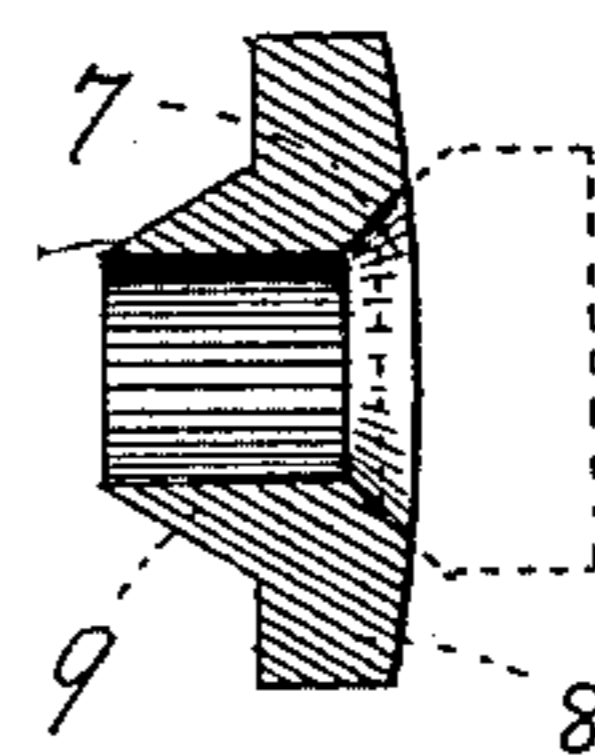


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM I. PAGE, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF FORTY-NINE ONE-HUNDREDTHS TO FRED M. WHITE, OF SAME PLACE.

METALLIC PACKING.

SPECIFICATION forming part of Letters Patent No. 424,814, dated April 1, 1890.

Application filed January 16, 1890. Serial No. 337,088. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM I. PAGE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Metallic 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in metallic packings for rods, particularly those which have reciprocating movements. My object is to provide a simple and inexpensive packing and one by means of which a steam or water tight joint is created.

The drawings represent in Figure 1 a central vertical section of a metallic packing embodying my invention. Fig. 2 is a section on line $x\ x$, showing the flexible diaphragm in plan. Fig. 3 is a section diametrically of the annular ring, and Fig. 4 is a similar section of the flanged ring.

In the accompanying drawings, 2 represents a packing-case secured in the head of a cylinder, steam-chest, or other similar chamber adapted to receive a reciprocating rod 3. A cap 4 engages by screw-threads with the open end of the case. Moreover, a tubular screw 5 through the cap is employed to adjust the follower and cause it to compress the cone projection of the flanged ring more closely about the rod should leakage occur.

The metallic packing embodying my invention is composed as follows: Encircling the rod is an annular metallic ring 6, preferably of babbitt. One end of this is conical and is adapted to enter a similarly-shaped recess 7, formed in a second metallic ring 8. This latter packing-ring is flanged, and is formed at one end with a conical or tapered projection 9, against which the follower 10 bears by pressure induced by means of the cap or of the adjusting-screw 5. Furthermore, I have crowned the flange of the packing-ring 8, as

shown by the dotted lines, which indicate the radius of the circle of which it is an arc. This curvature is created to form a support, and also to have its surface approximate in shape to that of one or more flexible diaphragms 12. The latter are circular and apertured in the middle to permit of free movement of the packing-ring 6 therethrough. Moreover, these diaphragms are confined at the circumference between the cap 4 and case 2. Thus the steam-pressure is exerted on the diaphragm or diaphragms, and the latter are held forcibly against the flange of the packing-ring, thereby preventing the flow of steam around said ring, which could then escape by way of the follower and the case at the point where the rod enters them.

By the above arrangement the packing-rings closely hugging the rod are free to have lateral play, if any such occurs through irregularities in the rod, the flanged ring moving with sliding contact upon the diaphragm, while the latter are sufficiently apertured to give the annular ring proper lateral play. A coiled spring 13 bears against the annular packing-ring 6 and holds it in contact against the other and co-operating flanged ring 8, the conical end of the ring 6 entering the recess 7.

What I claim is—

1. The combination, with a packing-gland, its follower, and a flanged packing-ring about the rod which passes through the gland, of a spring-actuated annular packing-ring engaging partly within the flanged ring, and one or more flexible diaphragms removably secured to the gland and co-operating with the flanged packing-ring, substantially as specified.

2. In general combination, a packing-case, its cap, one or more flexible diaphragms centrally apertured and secured between said case and cap, an adjusting-screw, the follower, a packing-ring formed with a flange curved upon one face to contact with the diaphragm, an annular packing-ring interlocking with the flanged ring, and a spring which operates against the annular ring, all substantially as described and set forth.

3. A flanged packing-ring formed with a conical projection on one face and having its

other face crowned, as described, and provided with a central recess, in combination with a follower partly inclosing said projection, a packing-ring partly entering said recess, and a flexible diaphragm fitting against the said crowned face, substantially as set forth.

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

WILLIAM I. PAGE.

Witnesses:

H. E. LODGE,

FRANCIS C. STANWOOD.