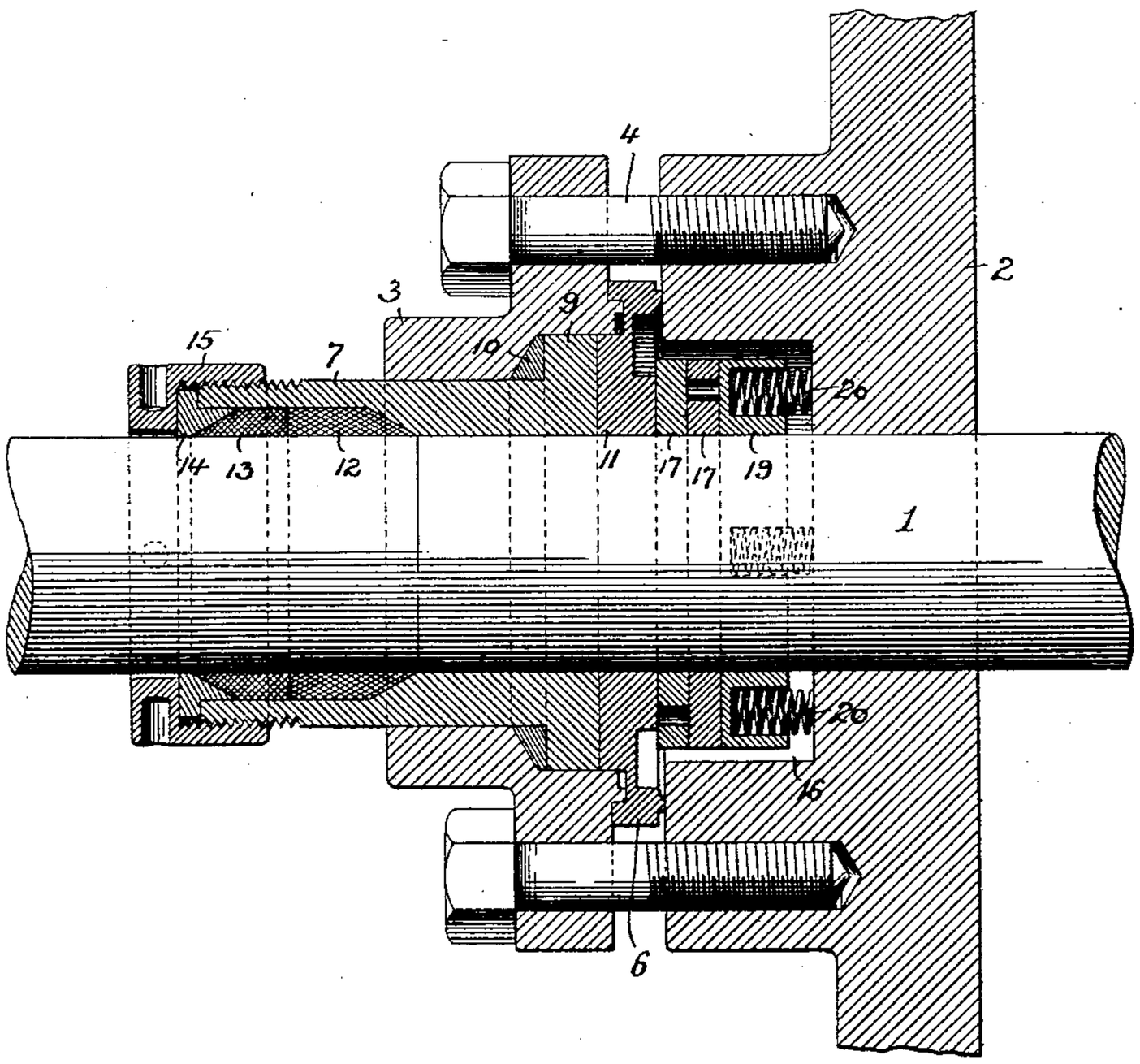
No. 684,140. Patented Oct. 8, 1901.

T. WALKER, Sr.

PACKING FOR ROCKING OR ROTATING RODS.

(Application filed July 8, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

THOMAS WALKER, SR., OF PHILADELPHIA, PENNSYLVANIA.

PACKING FOR ROCKING OR ROTATING RODS.

SPECIFICATION forming part of Letters Patent No. 684,140, dated October 8, 1901.

Application filed July 8, 1901. Serial No. 67,557. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WALKER, Sr., a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Packings for Rocking or Rotating Rods, of which the following is a specification.

The object of my invention is to provide a packing especially adapted for use in connection with rocking or rotating rods, such as the valve-rods of certain types of steam-engines. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawing, which represents in longitudinal section a rod-packing constructed in accordance with my invention.

In the drawing, 1 represents the rocking or rotating rod, and 2 part of the casing of the valve-box or other structure through which the rod projects, 3 representing the follower or cap, which is secured to said casing 2 by means of bolts 4 or in any other available manner and which serves to confine to the face of the casing 2 a ring 6, so as to form a steam-tight joint between said ring and casing. The cap 3 is centrally bored for the reception of a sleeve 7, which surrounds the rod 1, the inner portion of said bore of the cap being countersunk, so as to receive a flange 9 at the inner end of the sleeve and a ring 10, which is interposed between said flange 9 and the base of the countersunk portion of the bore, said base and the corresponding face of the ring 10 being by preference rounded or beveled. The ring 6, which is interposed between the cap 3 and casing 2, fits upon the rod 1 and has a central projecting flange 11, which enters the countersunk bore of the cap 3 and bears upon the inner face of the sleeve 7, so as to press the flange 9 of the same against the inner face of the ring 10, and consequently maintain the outer rounded or beveled face of said ring snugly in contact with the correspondingly-formed base of the countersunk bore of the cap. The outer end of the sleeve 7 has a countersunk bore with beveled inner end, and in this bore are contained a pair of rings 12 and 13, the inner ring being beveled at the inner end to accord with the bevel of the countersunk bore of the sleeve and the outer ring being beveled at its outer end to accord with the bevel of the inner end of a follower 14, which enters the outer end of the bore of the sleeve and is pressed inwardly by a flange upon a screw-cap 15, the latter being adapted to an external thread at the outer end of the sleeve 7.

Owing to the beveled portion of the follower 14 and of the countersunk bore of the sleeve 7, inward pressure of said follower causes the rings 12 and 13 to bind firmly upon the rod 1, and these rings therefore serve as a means of clutching the sleeve 7 to the rod 1, so that said sleeve partakes of the rocking or rotating movement of the rod. Hence a joint is formed between the inner face of the sleeve and the outer face of the flange 11 on the ring 6, another joint is formed between the periphery of the flange 9 of the sleeve and the cylindrical portion of the bore in the cap 3, a third joint is formed between the front face of the flange 9 and the rear face of the ring 10, and a fourth joint is formed between the beveled forward face of the ring 10 and the beveled base of the countersunk bore of the cap. Hence the leakage of fluid under pressure is effectually arrested. Two forward joints are thus provided, either of which is available if the other should wear rough, the movement being at that joint where the least friction is encountered. In case of an inward pull upon the rod, due to the formation of a partial vacuum in the chest, the inner face of the flanged end of the sleeve 7 is pressed firmly against the outer face of the flange 11, so as to prevent any inflow of air into the chest.

In order to still further arrest leakage, I provide the usual stuffing-box recess 16 of the casing 2 with a supplementary set of packing-rings, comprising by preference one or more rings 17 of the character set forth in my application for patent filed February 21, 1900, Serial No. 6,049, and a continuous ring 19, having sockets for the reception of coiled springs 20, which bear against the base of the recess or chamber 16 and serve to thrust the ring 19 against the inner ring 17, the latter against the outer ring, and the foremost ring 17 against the inner face of the ring 6, providing steam-tight joints at all of these points of contact.

In carrying out my invention a flat ring may be substituted for the rounded or bev-

eled ring 10, if desired, and a single ring beveled at each end may take the place of the abutting rings 12 and 13, but the construction shown is preferred as being more effective.

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

1. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve confined to the rod so as to rock or rotate therewith, and having a flange at its inner end contained in a countersunk portion of the bore of said cap, substantially as specified.

2. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve secured to the rod so as to rock or rotate therewith, and having a flange at its inner end contained in a countersunk portion of the bore of said cap, and a ring interposed between said flange and the base of said countersunk bore, substantially as specified.

3. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve secured to the rod so as to rock or rotate therewith, and having a flange at its inner end contained in a countersunk portion of the bore of said cap, and a ring interposed between said flange and the base of the countersunk bore, said base and the corresponding face of the ring being rounded or beveled, substantially as specified.

4. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve connected to the rod so as to rock or rotate therewith, said sleeve having at its inner end a flange adapted to a countersunk bore of the cap, and a ring interposed between the cap and casing and forming a steam-tight joint with said casing, and a contact-joint with the inner flanged end of the sleeve, substantially as specified.

5. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve connected to the rod so as to rock or rotate therewith, said sleeve having at its inner end a flange adapted to a countersunk bore of the cap, and a ring interposed between the cap and casing and forming a steam-tight joint with said casing, said ring having a flange entering the bore of the cap, and bearing against the inner flanged end of the sleeve, substantially as specified.

6. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve surrounding the rod and forming a joint with said cap, and means for securing said sleeve to the rod, comprising a beveled clamping device contained within a recess of the sleeve, a longitudinally-movable compressing-follower, and means for imparting longitudinal movement thereto, substantially as specified.

7. The combination in a packing for rocking or rotating rods, of a casing, a cap secured thereto, a sleeve surrounding the rod and forming a joint with said cap, and a clamping device for said sleeve comprising a pair of rings, contained within a recess of the cap and having beveled bearings whereby they are clamped to the rod when subjected to longitudinal compression, a follower for exerting such compression, and means for imparting longitudinal movement to the follower, substantially as specified.

8. The combination in a packing for rocking or rotating rods, of a casing having a recess or chamber surrounding the rod, a cap secured to the casing and having a countersunk bore, a ring confined between the cap and casing and forming a steam-tight joint with the latter, a sleeve secured to the rod so as to rock or rotate therewith, and having a flange bearing upon said interposed ring and contained within said countersunk bore of the cap, and a supplementary packing contained within the recess or chamber of the casing and bearing directly upon the rod and against the interposed ring, substantially as specified.

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

THOS. WALKER, SR.

Witnesses:
F. E. BECHTOLD,
JOS. H. KLEIN.