

(No Model.)

C. L. COOK.
ROD PACKING.

No. 481,105.

Patented Aug. 16, 1892.

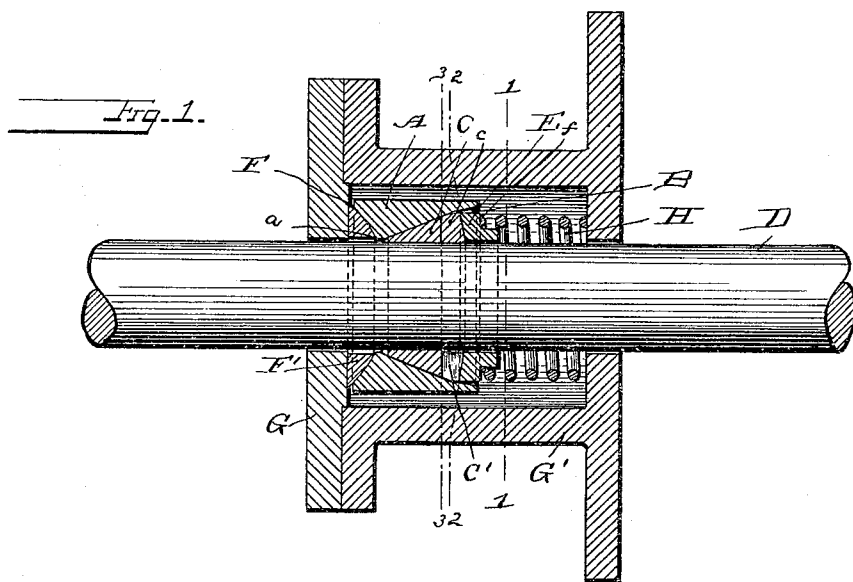


Fig. 2 Fig. 3 Fig. 4

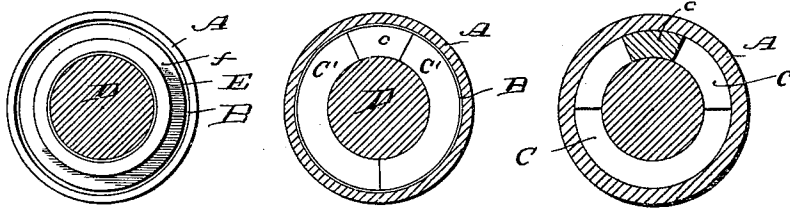


Fig. 5

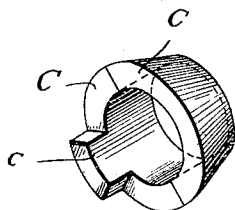


Fig. 6



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UNITED STATES PATENT OFFICE.

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ROD-PACKING.

SPECIFICATION forming part of Letters Patent No. 481,105, dated August 16, 1892.

Application filed February 16, 1892. Serial No. 421,743. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEE COOK, a citizen of the United States, and a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Rod-Packing; and I do 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a central longitudinal section. Figs. 2, 3, and 4 are sections through packing on lines 1 1, 2 2, and 3 3, respectively, of Fig. 1. Fig. 5 is a perspective view of the annular segmental packing, and Fig. 6 is a section of the bearing-ring.

This invention has relation to certain new and useful improvements in rod-packing for steam, air, and hydraulic engines; and it consists in the novel construction and combination of parts, as hereinafter specified.

In the accompanying drawings, the letter A designates a cylindrical shell or casing having therein a chamber B, the walls of which are conically tapered inwardly around the rod-aperture *a*, the taper commencing a short distance in from the outer end of said shell or casing.

C designates an annular packing, formed in two segments, fitting around the rod D and conically beveled on their peripheries to fit the taper of the walls of the chamber B. C' is a second ring, also formed in two segments, arranged to lap the joints in the ring C and held in place by a segmental lug or projection *c* on one of the segments of the ring C, the segments forming the ring C' being each less than half a circle. These two rings form a compound packing, expansible under pressure, and will form a steam-tight joint on a rod which has become worn smaller in one place than in others, vibrating as the rod moves, the lap-joint sections making a steam-tight joint where the conical section is cut.

It will be observed from the drawings, Fig. 1, that the peripheral edges of the segments forming the outer ring C are beveled on their

inner portions to fit the conically-tapered portion of the chamber, while their outer portions are straight to fit the straight walls of the outer portion of the chamber. This construction is provided in order that as the inner ring becomes worn down the outer ring will follow it to a point where the inner ring becomes worn to such an extent as to be useless. By this arrangement the efficiency of the rings is not impaired on account of a considerable amount of wear.

E designates the follower, the inner face of which is hollowed or concaved in order to fit the adjoining face of the ring C', which is of rounded or convex form. This feature of the follower causes it to compress the lap-joint ring to the rod, and also holds the follower closer to the rod. Said follower is also arranged to enter the casing in order to take up wear.

The inner end of the shell or casing A is cut out and grooved to form a partial ball-socket F, in which bears a spherically-beveled ring F', the opposite face of which is ground to form a close contact with the gland G of the stuffing-box G'. This arrangement permits the packing to be fitted to the ordinary gland without requiring special adaptation or the use of a box-gland. This construction forms a partial ball-and-socket joint for the shell or casing A, which is of less diameter than the interior of the stuffing-box, so that it forms a floating packing therein suspended by the rod, its only bearing in said box being by means of this ball-and-socket device, which is held against the gland by the pressure. This permits the parts to maintain a perfectly-tight joint when the engine is out of alignment.

The follower is shouldered at *f*, and against this shoulder seats a spiral spring H, which serves to hold the rings in place when the engine is running without steam.

Having described this invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the casing having the ball-and-socket bearing connection with the gland and formed with an interior conically-beveled chamber, of the conical ring in said chamber, said ring being formed in segments, the ring closing the joints formed by

said segments, and also formed in segments held in place by a lug or projection on the conical ring, said lap-jointed ring having a rounded or convex face, a concaved follower 5 bearing against said ring, and a spring pressing said follower, substantially as specified.

2. In a rod-packing, the combination, with the shell or casing having its inner end spherically concaved and formed with an interior 10 chamber having its side walls conically tapered inwardly, said taper commencing a short distance inward from the outer end of said chamber, of the ring having a spherically-beveled surface fitting the spherical 15 concavity of the inner end of the shell or casing, the segmental conical ring seating in the inner end of said chamber around the rod, the lap-joint segmental ring seating in said conical ring and having a convex outer surface, the follower having a concave inner face 20 fitting said convex surface, and the spring pressing said follower, substantially as specified.

3. The combination, with the stuffing-box 25 and its gland, of the floating packing therein, said packing comprising the cylindric shell

or casing of a less diameter than the interior chamber of the stuffing-box, said shell having a spherically-concaved socket in its inner end, and an interior conical and straight-walled 30 chamber, the ring having the spherical surface fitting said socket and seating against said gland, the inner segmental conical packing-ring seating in the conical portion of said chamber, the outer lap-joint packing-ring ar- 35 ranged to seat partially in the concaved portion of the chamber and partially in the straight-walled portion thereof, said outer ring having a convex outer face, a follower concaved on its inner face to fit said ring, 40 said follower being arranged to enter said casing to take up the wear of the rings, and a spring pressing said follower, substantially as specified.

In testimony whereof I affix my signature in 45 presence of two witnesses.

CHARLES LEE COOK.

Witnesses:

ADA SUTTON,

WM. L. DETTLINGER.