

O. J. GARLOCK.
 DUPLEX PACKING RING FOR PISTON RODS.

(Application filed July 5, 1900.)

(No Model.)

Fig 1

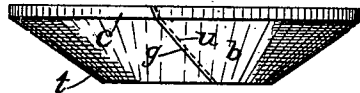
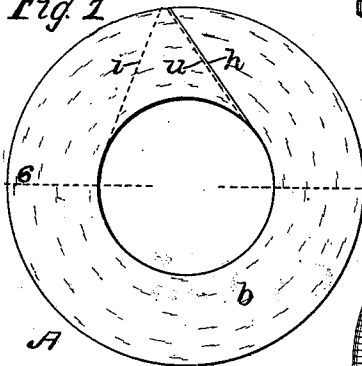


Fig 8.

Fig 2.

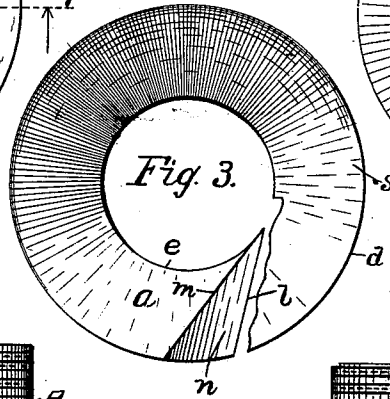
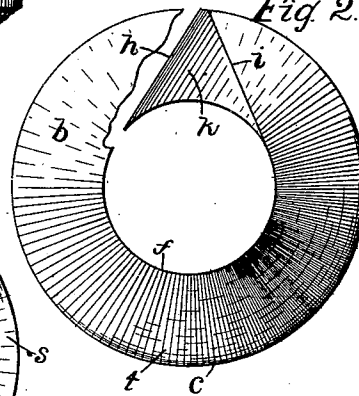


Fig 3.

Fig 4.

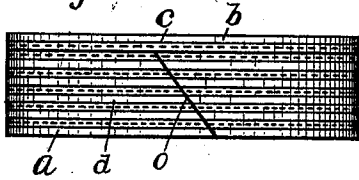


Fig 5.

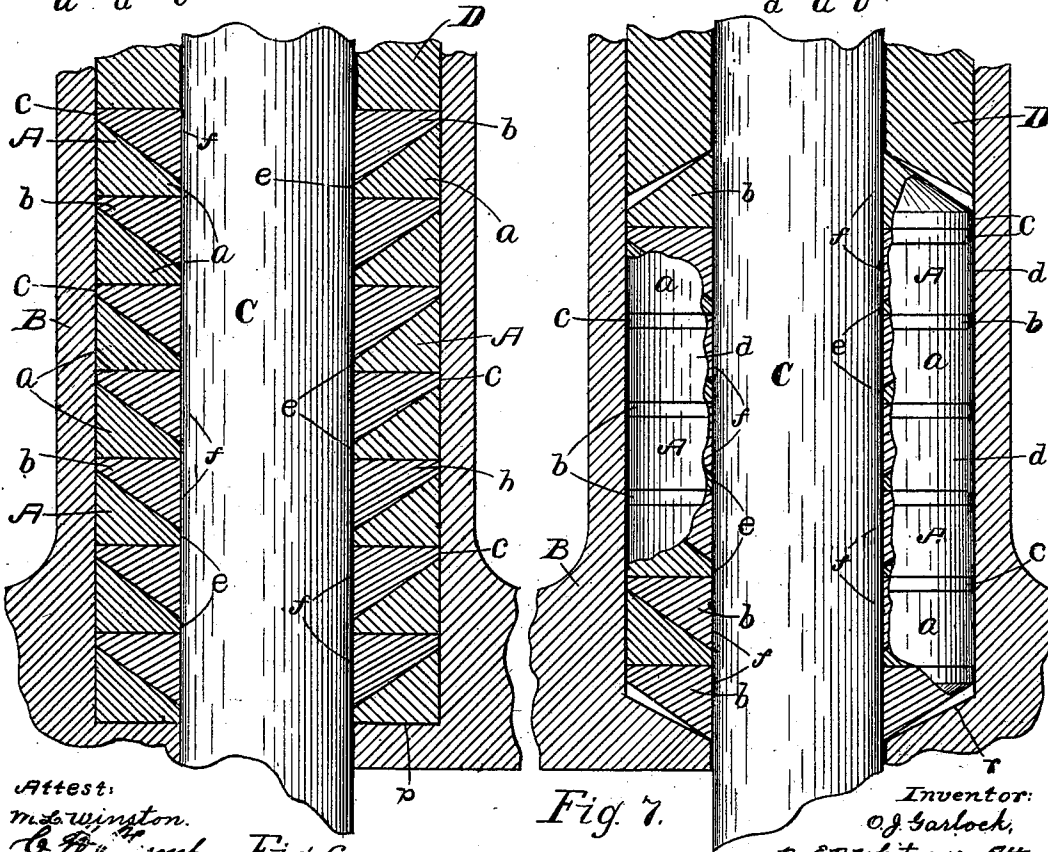
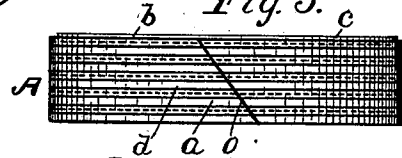


Fig 7.

Attest:
 m. c. wington.
 C. F. v. m. k.

Fig 6.

Inventor:
 O. J. Garlock,
 by C. B. Whitmore, Atty.

UNITED STATES PATENT OFFICE.

OLIN J. GARLOCK, OF PALMYRA, NEW YORK, ASSIGNOR TO THE GARLOCK PACKING COMPANY, OF SAME PLACE.

DUPLEX PACKING-RING FOR PISTON-RODS.

SPECIFICATION forming part of Letters Patent No. 664,143, dated December 18, 1900.

Application filed July 5, 1900. Serial No. 22,619. (No model.)

To all whom it may concern:

Be it known that I, OLIN J. GARLOCK, of Palmyra, in the county of Wayne and State of New York, have invented a new and useful
5 Improvement in Duplex Packing-Rings for Piston-Rods, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention is a duplex or two-part packing-ring for piston or similar rods cut from
10 sheets or slabs of packing material, preferably consisting of alternate layers of india-rubber and fiber, commonly used for the purpose.

15 The invention is hereinafter fully described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of the ring. Fig. 2 is a view of the conical side of the minor section, partly broken
20 away. Fig. 3 is a plan showing the hollow side of the major section, a part being broken away. Fig. 4 is an edge view of the complete ring, seen as indicated by arrow 4 in Fig. 1.
25 Fig. 5 is a similar view of the ring, showing the sections as longitudinally compressed or closed together after wear. Figs. 6 and 7, respectively, show longitudinal diametrical sections of stuffing-boxes of different forms supplied with the packing-rings, parts being
30 broken away, the sections being as on the dotted line 6 7 in Fig. 1.

A, Figs. 1 and 4, is the packing-ring, it being a flat circular disk of packing material
35 uniform in thickness. This ring or hollow cylindrical body is cut or divided into two circular unequal parts or sections *a b* (by a blade held inclined to the axis of the ring) in such manner that when divided each part or
40 section shall have one flat side of the original ring, one section having a conical side opposite the flat side and the other section having a hollow side in the form of a conical cavity opposite the flat-side. The dividing of
45 the ring is done in such a manner that each section *a b* retains a portion of the outer or convex edge of the original ring and a portion of the inner concave side of the ring defining the central opening therein. Thus divided when the ring is put in place in the
50 stuffing-box upon the rod each section has a

substantial bearing-surface against the stuffing-box on the outside and against the rod on the inside. On account of this manner of dividing the ring the outer edge *c* of the minor or inner section *b* is much narrower than
55 the corresponding edge *d* of the major or outer section *a*, while the inner edge *e*, Fig. 3, of said major section is much narrower than the corresponding edge *f*, Fig. 2, of the minor section *b*. Preferably the ring is so divided that the narrow edges *c* and *e* are equal in width and the broad edges *d* and *f* equal in width, though this exact proportion is not essential to the invention. In dividing
60 the original ring into the two sections, as stated, no material is cut away or wasted, the ring being simply parted, so that the two sections put together constitute the original ring, with the meeting surfaces *s*, Fig. 3, and *t*,
70 Figs. 2 and 8, mutually conical or inclined, as shown. These ring-sections are divided at one side of each by kerfs *g o*, the cut in each case being inclined to the flat surface of the section, as shown. In case of the minor section
75 *b* the two lines *h i*, Figs. 1 and 2, of the divide at either face of the section are tangent with opposite sides of the two inner circumferential lines of the ring, giving a flat slant *k* to the divided ends, as shown in Fig. 80
2. The major section *a* is divided so that the two lines *l m*, Fig. 3, at the opposite faces of the section are tangent to the corresponding sides of the two inner circumferential lines, said two lines *l m* terminating substantially
85 in the same inner longitudinal line of the section, giving the slant *n* to the divided ends of the sections.

On account of the inward slant of the meeting surfaces *s t* of the sections of the ring
90 the pressure of the gland or follower D of the stuffing-box B against the rings tends to cause all the minor sections *b* of the assembled rings to move gradually toward the companion major sections and inward against the
95 rod C, the reduced length of the ring after wear being shown in Fig. 5, and as the wearing away of the packing material is wholly at the inside next the rod the sections *b* of the rings that are urged against the rod by
100 the pressure of the gland are formed to have broad bearing-surfaces *f* to meet the rod.

The major sections *a*, which are intended to be crowded outward away from the rod, and consequently subjected to little wear, are given narrow bearings *e* against the rod, care 5 being taken in forming these major sections only to have them reach fully across and fill the space in the stuffing-box from the wall of the latter to the rod.

In case of a stuffing-box the bottom of 10 which is formed flat, as shown at *p*, Fig. 6, the two-part rings are placed therein one against another, as shown, filling the annular space between said bottom surface and the opposing flat end of the gland or follower 15 *D*; but if the stuffing-box be formed conical at its inner end, as shown at *r*, Fig. 7, a conical or minor section *b* of a ring is first placed at the bottom and then complete rings added, as shown, to fill the stuffing-box, a conical 20 minor section inverted being placed next the hollow end of the gland, as shown.

Should it be found desirable in any case when dividing the minor section *b* at *g*, as above stated, a small amount of material may 25 be removed, as indicated by dotted lines *u*, Figs. 1 and 8, forming a narrow slit or kerf to enable said section to more readily assume a reduced diameter when pressed within the major section *a*, as above stated.

30 What I claim as my invention is—

1. A duplex packing-ring for piston-rods, comprising a major and a minor section of equal external and interior diameters, the

two sections having similar and equal cross- 35 sections, both sections having extended parallel bearings against the piston-rod and the two sections together forming a hollow cylindrical body, the sections being provided with inclined division-slits, the minor section having the two lines of its cut at either face of 40 the section tangent with opposite sides of the two inner circumferential lines of the section to give a flat slant to the divided ends, as shown and described.

2. The packing-ring described consisting of 45 a major and a minor section of equal external and internal diameters, the two sections having similar and equal cross-sections and both sections having extended parallel bearings against a piston-rod, the sections being pro- 50 vided with inclined slits, the minor section having the two lines of its cut at either side of the section tangent with opposite sides of the inner circumferential lines of the section and the major section having the two lines at 55 opposite faces of the section tangent to the corresponding sides of the two inner circumferential lines, substantially as specified.

In witness whereof I have hereunto set my hand, this 30th day of June, 1900, in the pres- 60 ence of two subscribing witnesses.

OLIN J. GARLOCK.

Witnesses:

F. W. GRIFFITH,
EMMA JULIA CORSON.