

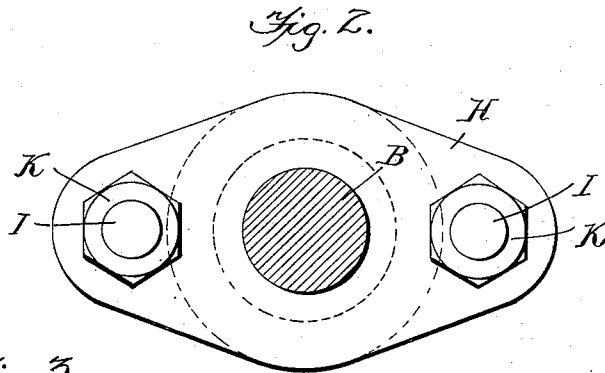
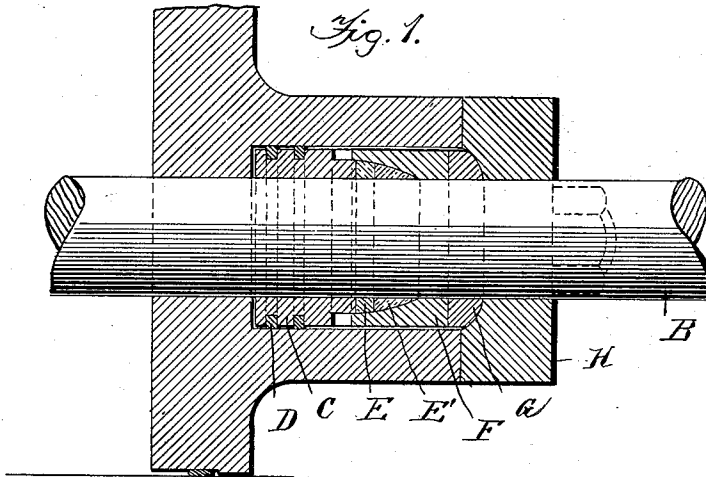
No. 661,664.

Patented Nov. 13, 1900.

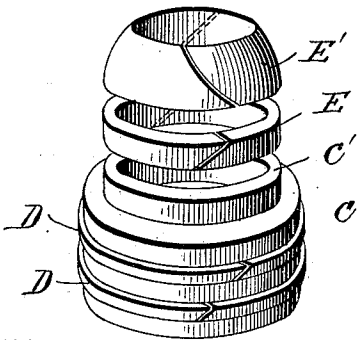
R. Y. LANE.  
METALLIC ROD PACKING.

(Application filed July 20, 1899.)

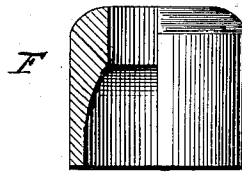
(No Model.)



*Fig. 3.*



*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

REAMER YONG LANE, OF MERIDIAN, MISSISSIPPI.

## METALLIC ROD-PACKING.

SPECIFICATION forming part of Letters Patent No. 661,664, dated November 13, 1900.

Application filed July 20, 1899. Serial No. 724,538. (No model.)

*To all whom it may concern:*

Be it known that I, REAMER YONG LANE, a citizen of the United States, residing at Meridian, in the county of Lauderdale and State of Mississippi, have invented certain new and useful Improvements in Metallic 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 the letters of reference marked thereon, which form a part of this specification.

This invention relates to metallic packing for piston-rods and the like; and its objects are, first, to provide a metallic packing of extremely simple construction which is highly efficient without a multiplicity of parts and without the necessity of springs or kindred devices to keep the rings in compression; secondly, to provide a packing in which the compression is effected by the steam or other pressure and is maintained only so long as the pressure is exerted and there is a tendency for it to escape, whereby unnecessary wear on all the parts is prevented. I attain these results by means of the packing hereinafter described, and as illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of a stuffing-box, showing a portion of a rod and a half-sectional elevation of my improved packing applied thereto. Fig. 2 is a sectional end elevation showing the face of the stuffing-box gland, the inner dotted line showing the circular section of the packing. Fig. 3 shows the packing-rings and the compressing-piston in perspective, somewhat separated. Fig. 4 is a half-sectional elevation of a modified cupped ring.

The interior of the stuffing-box A is cylindrical, concentric with the rod B. In its inner end is received the annular piston C, formed with grooves in its periphery to hold the spring packing-rings D, which fit snugly into the bore of the stuffing-box. There should be a greater amount of friction between the rings D and the stuffing-box than between the piston and the rod, so that when the steam or other pressure is removed from the piston

it will not be carried to and fro by the rod, but will remain stationary in the stuffing-box.

An annular projection C' on the piston C bears against one or more soft-metal rings surrounding the rod. Two rings are shown in the drawings, the inner one, E, being substantially cylindrical in form, while the outer one, E', has a tapering exterior surface, preferably slightly curved, as shown. The rings have flat abutting ends, and they are split, in order that they may be closed upon the rod under pressure. If desired, they may be made in segments, as indicated by the dotted lines in Fig. 3.

Surrounding the rings E E' is a ring F, which at its outer end fits the rod and is countersunk or cupped from its inner end to fit the outer surface of the rings E E'. The outer end of the ring F is flat and bears against a similar surface on a ring G, which has a slightly convex outer end fitting into a concavity in the inner side of the gland H of the stuffing-box. The usual studs I and nuts K are provided for holding the gland in place. The ring G may be made integral with the cupped ring F, if desired, as shown in Fig. 4.

The piston and the several rings are centrally bored to accurately fit the piston-rod, valve-stem, or other rod B, and a certain clearance is left between their peripheries and the bore of the stuffing-box, so that the only parts bearing upon the interior of the box are the packing-rings D on the piston.

To prevent excessive wear on the packing-rings a washer may be placed behind said annular piston, if desired.

In operation the piston C is forced outwardly by the fluid-pressure against the soft-metal rings E E', compressing them into the cupped ring F, whose tapering interior closes them upon the rod B. The greater the fluid-pressure the tighter the rings hug the rods. When the pressure is relieved, the piston recedes and the rings E E' spring open again. The wear is thus reduced to a minimum.

This device has been used with excellent results upon both stationary and locomotive engines.

Having thus described my invention, what I claim is—

The combination with a stuffing-box A and

rod B, of a piston C having an extension C',  
rings D on the piston fitting the bore of the  
box, packing-rings E E' of soft metal, the lat-  
ter having a tapered surface, a cupped ring  
5 F fitting the rings E E' and the rod, a ring G  
adjacent to the ring F, and a gland H receiv-  
ing the ring G.

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

REAMER YONG LANE.

Witnesses:

JOHN S. READY,  
M. H. JACOBY.