(No Model.)

J. L. BARKER.

METALLIC ROD PACKING.

No. 545,761. Patented Sept. 3, 1895.

Fig. 1.

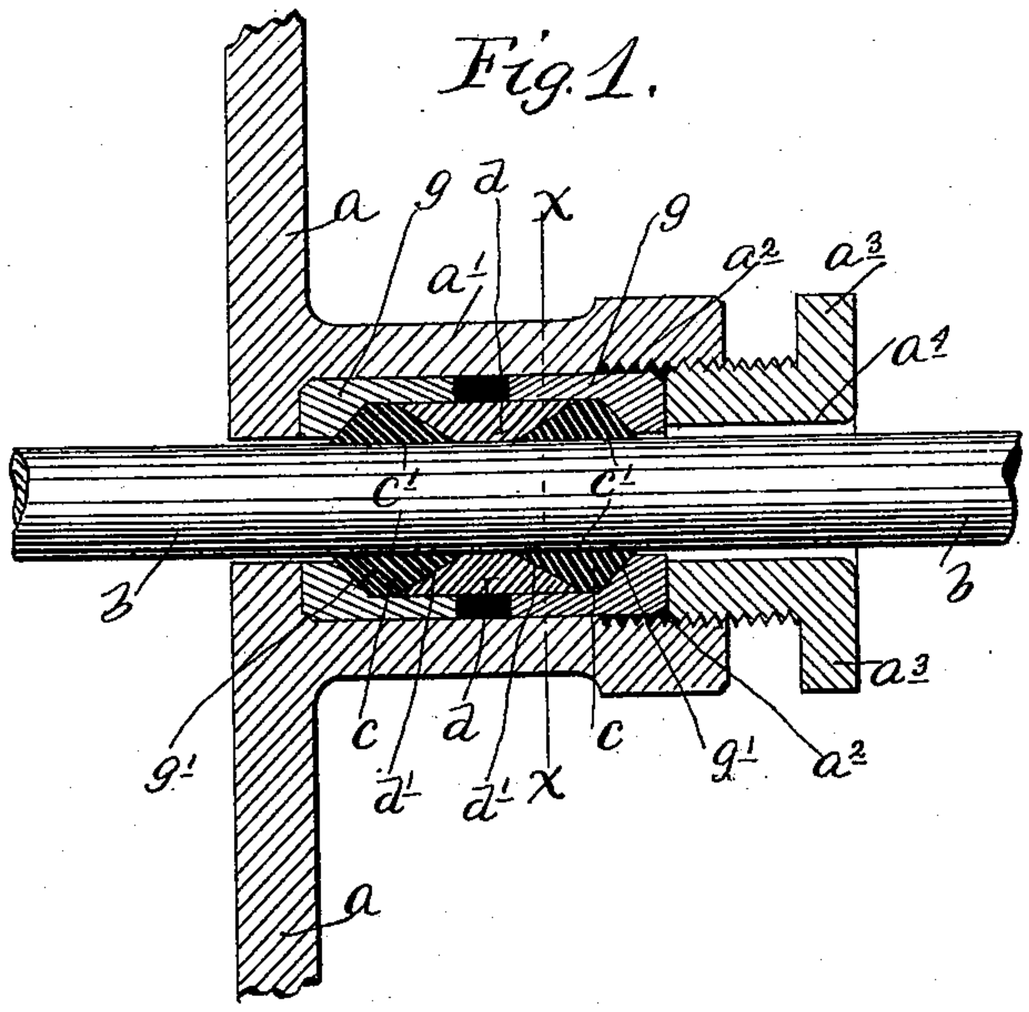
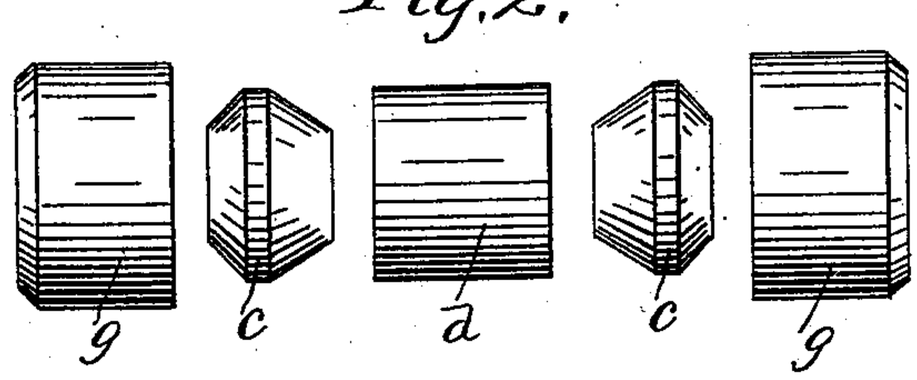


Fig. 2.



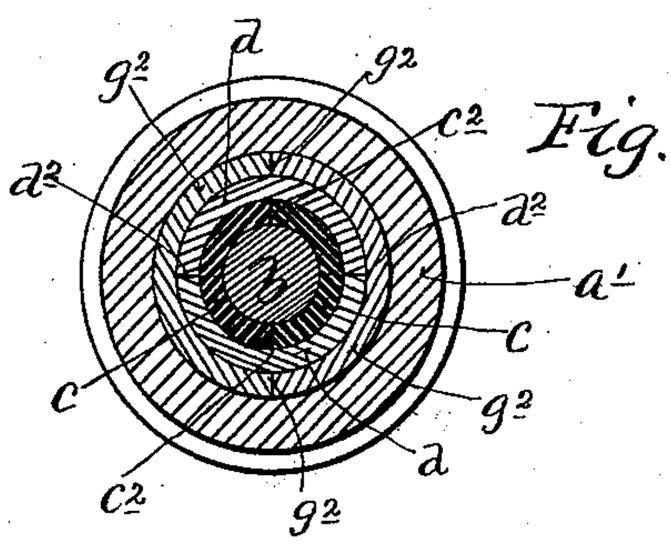


Fig. 3.

Witnesses.
E. F. Elmore.
R. D. Merchant.

Inventor.
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By his Attorney.
Jas. F. Williamson.

UNITED STATES PATENT OFFICE.

JAMES L. BARKER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-THIRD TO JAMES MACGOWEN, OF SAME PLACE.

METALLIC ROD-PACKING.

SPECIFICATION forming part of Letters Patent No. 545,761, dated September 3, 1895.

Application filed June 3, 1895. Serial No. 551,457. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. BARKER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Metallic Rod-Packing; 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.

My invention has for its object to provide an improved rod-packing.

To this end my invention comprises the novel devices and combinations of devices hereinafter described and defined in the claims.

The accompanying drawings illustrate my invention, wherein like letters refer to like parts throughout the several views.

Figure 1 is a vertical central section showing portions of an engine-cylinder with my improved packing applied in working position thereto. Fig. 2 is a plan view of the parts composing my rod-packing shown as drawn longitudinally apart, and Fig. 3 is a vertical cross-section taken through the stuffing-box and rod-packing on the line $x\,x$ of Fig. 1.

a indicates the front end portion of the cylinder of an engine, which is provided with a stuffing-box a', and b represents a portion of the piston-rod of the same. The outer end of the stuffing-box a' is provided with screw-threads a^2, in which works a gland a^3, provided with a central passage a^4, which passes the piston-rod b without frictional contact therewith. The parts comprising my rod-packing are located within the stuffing-box a', between the end wall of the cylinder and the gland a^3, and comprises, as preferably constructed, a pair of annular packing-rings c, a central annular clamping or seat piece d, and a pair of end clamping-pieces g. The packing-rings c are formed of soft ductile metal, such as lead, and in cross-section form double truncated cones with passages c' fitting the piston-rod b. The central clamping-piece d is provided with conical seats d', which flare outward toward its opposite ends and fit the inner conical portions of the packing-rings c. The end clamping-pieces g are provided with internal conical seats g', which fit the outer conical portions of the packing-rings c, and the inwardly-extending annular flanges of the same fit around the ends of the central clamping-ring d and serve to hold said parts concentric with each other.

It will be seen by reference to Fig. 1 that when the parts of the packing are put together (the packing-rings c being new) the end seats g are spaced apart from each other, so that as the packing-rings are worn away by the action of the piston-rod the slack or leakage may be taken up by forcing said clamping-pieces closer together. This may be accomplished by screwing inward on the gland a^3. Under this action of forcing the clamping-pieces together the packing-rings, as they are worn away, will be compressed and caused to conform to the space between the piston-rod and the faces of the opposing clamping-pieces. This compression and change in the form of the packing-rings is caused by the displacement and constant reforming of the entire shape and proportions of the cross-section of the packing-ring. This I consider to be novel.

In metallic packing-rings now in general use the ring is given an initial form in cross-section, which is never varied except by the wear caused by the friction of the piston-rod, and the ring, in order to permit the same to always engage the piston-rod, is provided with a slot which normally spaces the ends of the same apart. With this construction it is necessary, in order to prevent leakage, to place several rings together, and the slack caused by wear on the rings is taken up by forcing the separated ends of the rings toward each other.

My form of packing-ring is considered to be a decided improvement over this old form both in point of simplicity and efficiency. In the packing shown in Fig. 1 it will be noted that there are four conical packing-ring surfaces and corresponding seats for the same, and hence that there will be four points where the packing-rings will be pressed tightly against the piston-rod.

In Fig. 3 the packing-rings are shown as formed of two sections split on their longitudinal centers, as shown at c^2. In like manner the central clamping-piece d and the end clamping-pieces g are shown as formed of

two sections split, as shown, respectively at d^2 and g^2. The purpose of this construction is to permit the parts of the packing to be placed laterally onto the piston-rod. This is often important where it is not convenient to disconnect the end of the piston-rod from the cross-head of the engine or pump. As must be evident when these parts are placed together within the stuffing-box a' they will be held together as though they were formed integral. Furthermore, after once tightly compressing the sections of the packing-ring together they become practically integral with each other. It will be understood, of course, that while the packing-ring may be renewed indefinitely the clamping-rings d and g may be used continuously.

It will be also understood that various alterations in the details of construction of my invention may be made without departing from the spirit of the same.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A metallic rod packing, comprising a pair of annular metal rings, which in cross section form hollow double truncated cones, the central clamp or seat-piece having the conical seats flaring toward its opposite ends and engageable with the inner cone portions of said packing rings, the end clamp pieces having the conical seats engaging the outer cone portions of said packing rings and provided with the inwardly projecting annular flanges engaging around the ends of said central clamp piece, and means for clamping said parts together within the stuffing box, substantially as described.

2. A metallic rod packing, comprising the pair of two-part soft metal packing rings, which in cross section form hollow double truncated cones, the central clamp or seat-piece having the conical seats flaring toward its opposite ends and engageable with the inner cone portions of said packing rings, the end clamp pieces having the conical seats engaging the outer cone portions of said packing rings and provided with the inwardly projecting annular flanges engaging around the ends of said central clamp piece, and means for clamping said parts together within the stuffing-box, substantially as described.

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

JAMES L. BARKER.

Witnesses:
E. F. ELMORE,
F. D. MERCHAND.