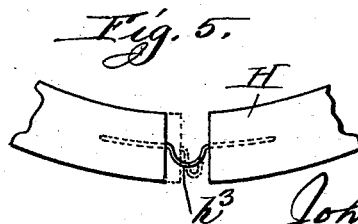
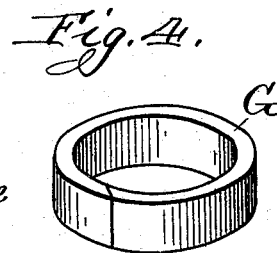
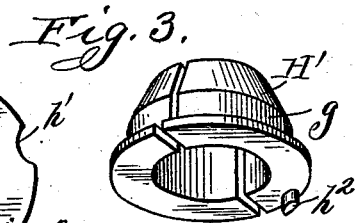
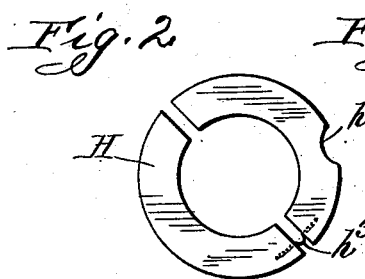
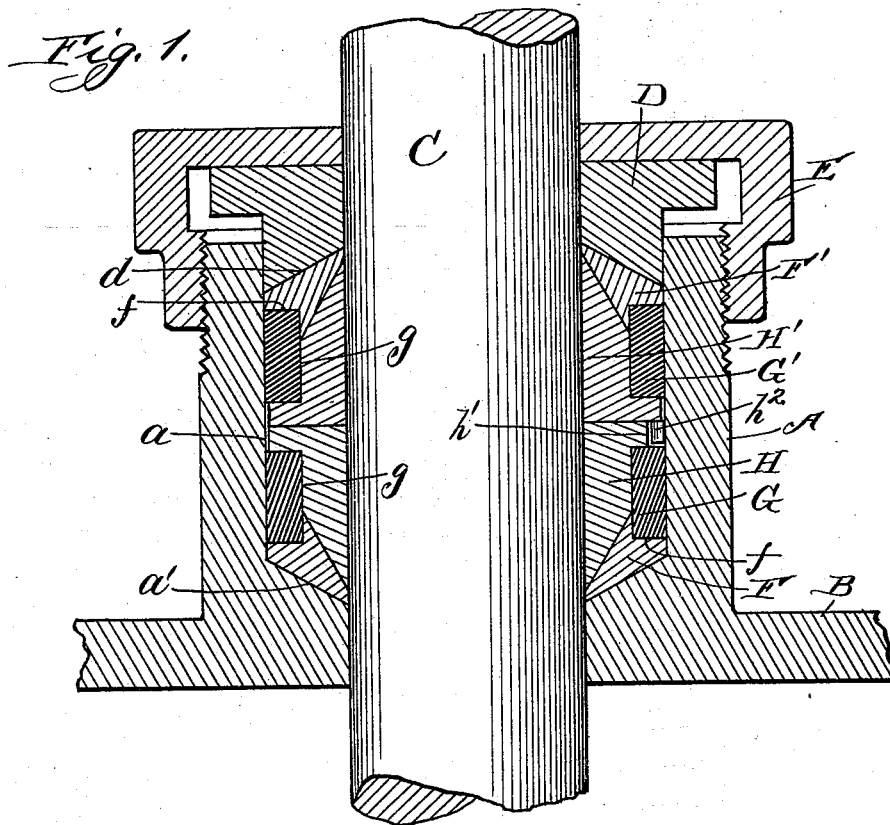


No. 648,474.

Patented May 1, 1900.

J. S. WARD.
PISTON ROD PACKING.
(Application filed Feb. 10, 1899.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN S. WARD, OF CHICAGO, ILLINOIS.

PISTON-ROD PACKING.

SPECIFICATION forming part of Letters Patent No. 648,474, dated May 1, 1900.

Application filed February 10, 1899. Serial No. 705,158. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. WARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Piston-Rod Packings, of which the following is a specification.

This invention relates to improvements in packings for piston-rods, valve-stems, and like parts of machinery; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

One object of my invention is to provide a packing which will afford and maintain a tight joint around the rod or stem on which it is placed and will lessen the wear thereof and at the same time permit of a slight lateral play or movement of the rod or stem to accommodate any imperfect alinement which might exist in the arrangement and parts of the machinery.

Another object of my invention is to unite parts of the packing in such a manner that they may be more readily assembled and the proper pieces kept together.

Still another object is to lock the sections or segments of the meeting rings so as to prevent them turning independently of one another, and thus avoiding their joints coming into alinement or registering.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a sectional view of a stuffing-box and my packing, showing it surrounding a piston-rod. Fig. 2 is a plan view of one of the split packing-rings. Fig. 3 is a perspective view of another one of the split rings. Fig. 4 is a similar view of one of the exterior rings; and Fig. 5 is a fragmental view of a portion of one of the split rings, showing the manner of securing the ends thereof together.

Similar letters refer to like parts throughout the different views of the drawings.

A represents a stuffing-box of the ordinary or any preferred construction, which is formed or provided on the end of a steam-engine cylinder B and through which the piston-rod C

passes. The stuffing-box is provided with a cylindrical cavity *a*, whose inner portion, or that portion thereof adjacent to the end of the steam-cylinder B, may be inclined, as shown at *a'* in Fig. 1 of the drawings. Located in the outer portion of the stuffing-box is a gland or follower D, through which the piston-rod C passes and which may be held in place by means of a cap E, surrounding the piston-rod and engaging screw-threads on the outer portion of the stuffing-box. Within the chamber or cavity *a* of the stuffing-box and on the floor *a'* thereof, which, as before stated, may be inclined, is located a split ring F, both of whose faces are inclined, as shown. When the floor or bottom of the stuffing-box with a flat or plane bottom is used, one face only of said ring need be inclined, and that one being the upper one. The sections comprising the split ring F are provided in their external peripheries with recesses *f*, rectangular in shape, to receive a portion of the ring G, which may be made of rubber or other suitable yielding material. Placed on the split ring F is another split ring H, whose face adjacent to the ring F is inclined and whose outer periphery is provided with a circumferential recess *g* to receive a portion of the ring G. The top or outer face of the ring H, which is composed of two pieces, is flat or plane and is provided in its external periphery with a curved recess *h'* to receive a projection *h''* on the plane or flat face of the split ring H', which is also provided on its external periphery with a circumferential recess or groove *g* to receive a portion of another ring G' of rubber or other suitable elastic or yielding material.

The upper or external face of the split ring H' is inclined and has placed thereon another split ring F', similar in construction to the ring F and above described, and has in its external periphery a circumferential groove *f*, rectangular in cross-section, for the reception of the upper or outer portion of the ring G, whose outer surface, as well as that of the ring G', rests against the inner surface of the chamber *a* of the stuffing-box.

By reference to Fig. 1 of the drawings it will be seen that the inner portion of the gland or follower D is provided with a concavity *d*, against which the inclined outer surface of

the split ring F' rests, and while I prefer to employ such a cavity in the gland and a similar one in the inner or lower portion of the stuffing-box, yet I may dispense with said 5 concavities and make the inner surface of the gland, as well as the floor of the stuffing-box, plane, in which case the sections or pieces composing the split rings F and F' will be made with plane surfaces adjacent to said 10 parts. It will further be observed by reference to said figure of the drawings that the pieces composing the split rings H and H' form, when placed around the piston-rod C, cones, and that the pieces composing the rings F 15 and F' form cups to fit on the conical portions of the other rings, and that the elastic or yielding quality of the rings G and G', in conjunction with the rings F, F', H, and H', will allow the piston rod or stem to have a limited 20 side play or movement to accommodate itself to imperfect alinement of the parts without causing undue wear on the piston rod or stem or on the packing-rings which surround it.

For the purpose of conveniently assembling 25 the parts comprising my packing I may join the pieces forming the split rings at one of their ends with a wire h^3 , which may be molded in the pieces and slightly bent between the ends of the pieces which it unites, as shown

in Fig. 2 of the drawings, thus securing the 30 proper pieces together and allowing them to be spread apart at their free ends, so as to be placed over the piston rod or stem without disconnecting the same. The said wire being bent will readily yield and allow the ends of 35 the pieces which it connects to be pressed toward each other, as is apparent.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is— 40

The combination of a stuffing-box, with a series of split rings located therein around the rod or stem and arranged in pairs, the rings of each pair having their meeting faces inclined and provided with circumferential 45 recesses, the intermediate rings having their meeting surfaces plane, and provided with circumferential recesses, one of said rings having a recess in its periphery and the other one a projection to fit in said recess, and 50 rings of elastic or yielding material located in the circumferential recesses, substantially as described.

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Witnesses:

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