

No. 648,400.

Patented May 1, 1900.

J. M. GARRETT & F. RAUBER.

METALLIC PACKING.

(Application filed Aug. 29, 1899.)

(No Model.)

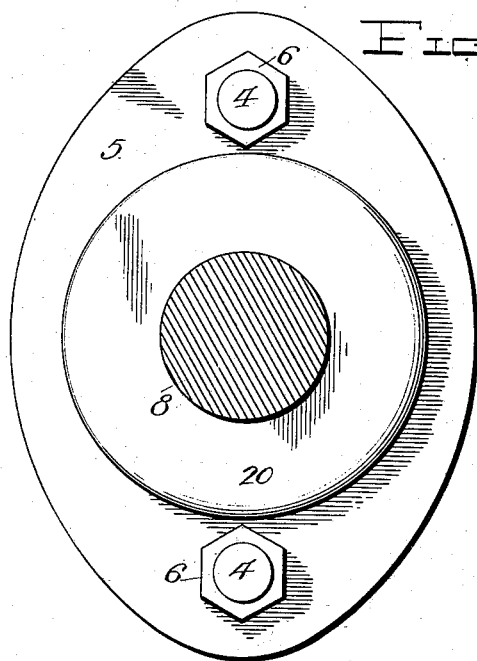
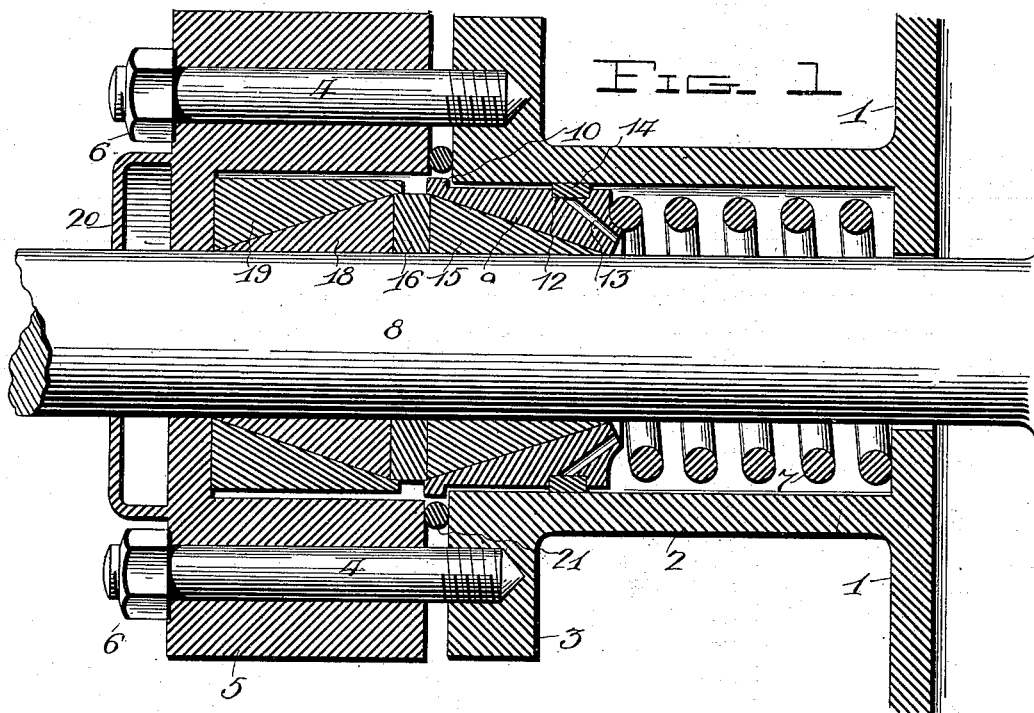
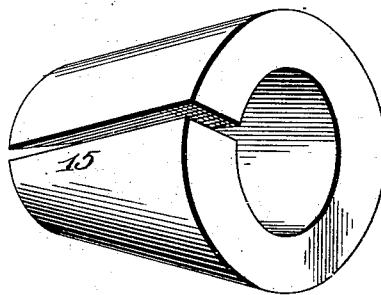


FIG. 2

FIG. 3



Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES M. GARRETT AND FRITZ RAUBER, OF EL DORADO, KANSAS.

## METALLIC PACKING.

SPECIFICATION forming part of Letters Patent No. 648,400, dated May 1, 1900.

Application filed August 29, 1899. Serial No. 728,896. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES M. GARRETT and FRITZ RAUBER, citizens of the United States, residing at El Dorado, in the county of Butler and State of Kansas, have invented certain new and useful Improvements in Metallic Packing; and we 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.

Our invention relates to certain novel improvements in metallic packing for valve-stems, piston-rods, and the like; and the object is to improve the construction and provide a durable and efficient packing of this character.

To this end the invention consists in the construction, combination, and arrangement of the device, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings the same reference characters indicate the same parts of the invention.

Figure 1 is a longitudinal section of our improved metallic packing as applied to a steam-engine valve-stem. Fig. 2 is a front elevation of the same. Fig. 3 is a detail perspective view of one of the conical packing-rings.

1 denotes the front end of the steam-chest, and 2 the neck, which terminates in an elliptical flange 3 to receive the stud-bolts 4 4, which extend through the gland 5, the latter being adjustably secured in place by the nuts 6 6. The neck 2 is counterbored to receive the spiral spring 7, which encompasses the valve-stem 8, and its inner end rests against the steam-chest, while its outer rests against the cylindrical sleeve 9, the outer end of which terminates in an annular flange 10, which is slightly larger than the counterbore in the neck. This sleeve 9 is provided with an annular groove 12, from which diagonal ports 13 lead to the counterbore in the neck, and 14 denotes a metallic packing-ring located in said groove to form a packing between the sleeve and the neck. The inner diameter of this sleeve 9 is conical in form to receive the

correspondingly-formed split packing-ring 15, which encompasses the valve-stem, and 16 denotes a metallic packing-ring encompassing the stem and resting against the outer end of said sleeve.

18 denotes a conical split packing-ring encompassing the valve-stem, and it is in turn encompassed by a correspondingly-formed sleeve 19, the outer end of which forms a ground-joint with the contiguous wall of the gland 5.

20 denotes a swab-case fixed to the outside of the gland 5 and encompassing the valve-stem, and it is intended to contain cotton-waste or other suitable absorbent material which is saturated with oil or grease to lubricate the valve-stem. The metallic packing-ring 16 serves to break the joints between the two cone-sleeves 15 and 18, and 21 represents a suitable gasket placed between the neck-flange 3 and the gland 5.

It will of course be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described our invention, what we claim as new and useful, and desire to secure by Letters Patent of the United States, is—

In a metallic packing of the class described, the combination with the counterbored neck 2, the spiral spring 7, the sleeve 9 formed with the groove 12, and steam-ports 13, and the packing-ring 14, of the conical split ring 15, the reversely-arranged split packing-ring 18, the interposed packing-ring 16, the sleeve 19 and the encompassing gland 5, having a ground-joint bearing with said sleeve 19, substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JAMES M. GARRETT.  
FRITZ RAUBER.

Witnesses:

J. B. ADAMS,  
C. W. EWING.