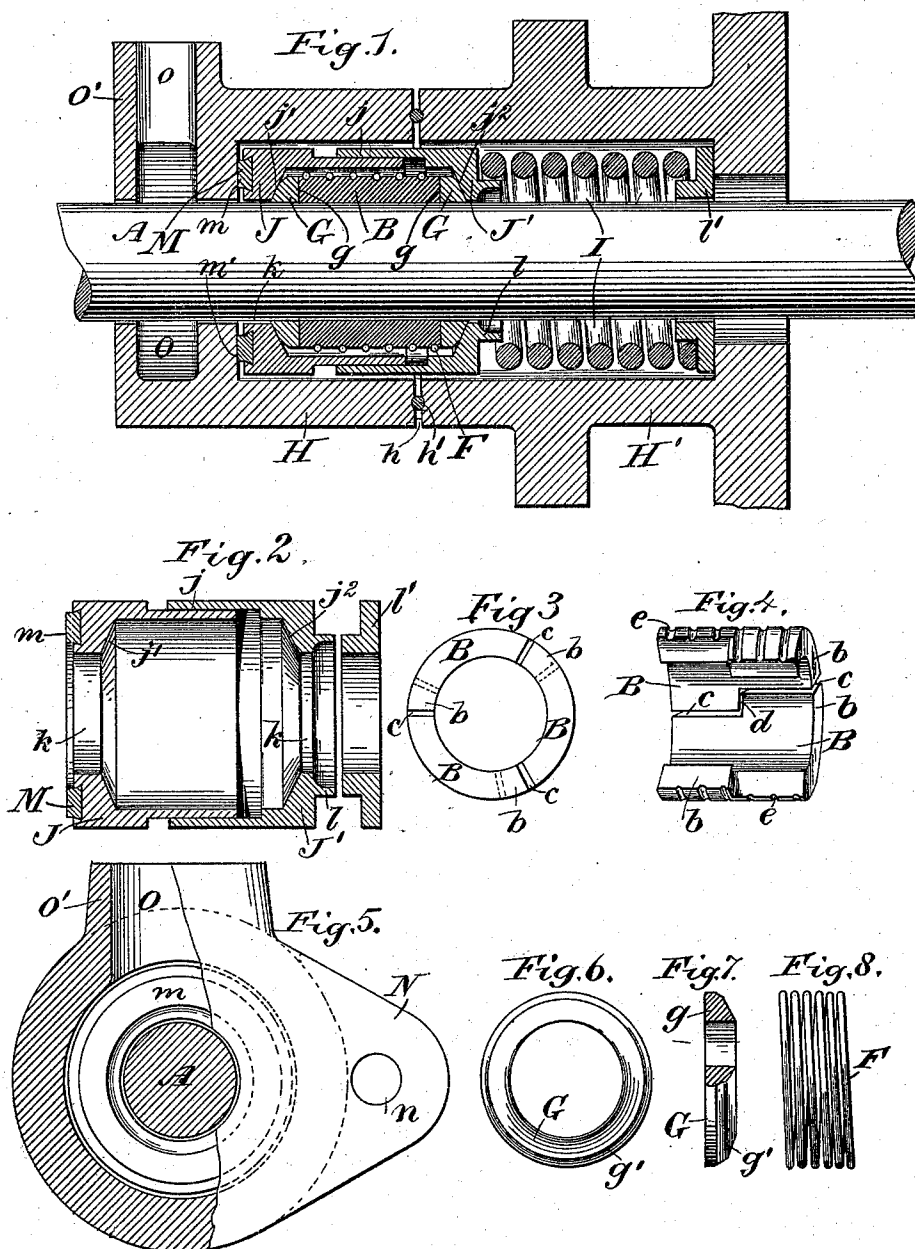


(No Model.)

E. M. HEDLEY.
METALLIC PACKING.

No. 550,755.

Patented Dec. 3, 1895.



Witnesses:

N. C. Calhoun
J. H. Griffin

Edward M. Hedley
Inventor

By
Barker, Balston & Legendre
Attorneys

UNITED STATES PATENT OFFICE.

EDWARD M. HEDLEY, OF ELIZABETH, NEW JERSEY.

METALLIC PACKING.

SPECIFICATION forming part of Letters Patent No. 550,755, dated December 3, 1895.

Application filed January 18, 1895. Serial No. 535,303. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. HEDLEY, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Metallic Packing, of which the following is a full, clear, and exact specification.

The objects of my invention are, first, to construct a metallic packing for pistons, valve-stems, and pump plunger-rods, so that steam or any vapors or liquids shall be effectually prevented from escaping therefrom; second, to construct the said packing entirely of metal and in such a manner that any wear of its parts shall be at all times compensated for by the automatic adjustability of such parts, and, third, to provide a means for automatically adjusting the said parts to form a constantly-effective packing by such adjustment.

With these objects in view reference is had to the annexed specification and drawings, in which—

Figure 1 is a longitudinal sectional view of the complete metallic packing and automatic compensating means. Fig. 2 is a longitudinal sectional view of a cage having a slip-joint. Fig. 3 is an end view of the three segments constituting the metallic packing proper. Fig. 4 is a perspective view of two of the packing-segments with the third segment removed. Fig. 5 is a front end view, partly broken away, of the outer cover or gland for said packing and improved oil-cup. Fig. 6 is one of a pair of metal stop rings or gaskets. Fig. 7 is an edge view of Fig. 6 partly broken away, and Fig. 8 is an elevation view of a helical spring.

A represents a valve-stem. Around said stem are arranged, preferably, though the number may be varied, three segments B B B. These segments are all of the same construction and have each two projections *b b*, arranged oppositely and each on different sides of a line drawn concentrically through the center of said segments, as shown, each projection *b* of said segments overlapping and having a close contact with similar projections on the next segment adjacent thereto, so that when all of the said segments are placed around a valve-stem they thus interlock to form a complete circle and packing,

having only radial breaks *c c c* longitudinal with the long line of said valve-stem, each of the concentrically-arranged joints *d* being close joints formed by the union of the sides of the overlapping projections *b*.

A large thread *e* is formed along the outer diameter of the three segments, and a closely-wound helical spring F, of a smaller diameter than the outer diameter of the segments B, is formed and screwed into the said threads *e* over the said segments B. The coils of the said spring in being thus screwed over the said segments are thereby spread as wide apart as the said threads *e*, into which the said coils fit. It is thus seen that the spring F, in addition to binding the segments around a valve-stem or piston, also binds the overlapping edges *d* of the projecting portions *b* of the segments B closely together. Thus it is seen that the segments form a continuous metallic packing-ring which always closely fits the piston or valve-stem and readily and automatically compensates for wear of either of the said parts. The ends of the said segments are preferably evenly finished off, and stop or end rings G, having an inner even surface *g* and an outer beveled surface *g'*, are fitted closely around said stem or piston and abut against the ends of the said segments. The said segments are given their position upon the valve-stem and the said rings G are held tightly against the said segments by means of a cover or gland H H' and a spring I, located inside of said cover or gland. A slip-joint casing formed of the parts J J' surrounds and entirely incloses the above-said segments, the said slip-joint being formed, as at *j*, by means of the parts J J', nicely telescoping upon each other. A battened inner surface *j' j'* is arranged, respectively, within the interior of each of the portions of the said cases J J', the said batten surfaces having a contact with and serving the purpose of holding the rings G against the ends of the segments B.

A ledge *l* is formed upon the portion J' of the casing and against the centering-ring *l'*, located within and against one end of the part H' of the cover or gland. The opposite portion J of the said casing is fitted with a metallic packing or gasket M, preferably formed or located in the end of the said cas-

ing J, as shown, said gasket having a close contact with a surface m' of the inner portion of the cover or gland H. It is thus seen that a tight joint is formed at the joints $j' j^2 d$, the union of the pieces B B B with the movable stem, and between the gasket M and the surface m' of the portion H of the cover or gland, which latter is formed of the two parts H H', as shown by the breech h , in which is interposed a gasket h' to render the union of the parts H H' tight at their meeting portion.

Ordinary bolts are passed through holes n , which are formed in the projecting portions N at the parts H H', only one of which projections is here shown, to bind the said parts tightly together, as in ordinary stuffing-boxes.

Figs. 1 and 5 represent a cross-section and a front broken view, respectively, of an improved oil-box formed by casting the part H so that a recess O will be formed concentric with the valve-stem, in which recess can be packed oiled waste or other lubricating material. A mouth o is formed, as shown, in a projection O' and communicates with the said recess O.

Though the foregoing construction, as set forth, is to be preferred, I, however, reserve the right under the principle of this invention to adapt the same to all such constructions as may use metallic packing and to modify the said invention.

What I therefore claim, and desire to secure by Letters Patent, is—

1. A metallic packing composed of two or

more segments of a ring, a thread formed around and along the circumference of said segments, a helical spring arranged to fit said thread and to combine and hold said segments together, the convolutions of said thread being spaced farther apart than the normal relative positions of the convolutions of said helical springs, substantially as set forth.

2. In a metallic packing, having a metallic packing ring formed of segments surrounding a rod, a cage, formed of two parts and having a close telescoping joint and surrounding said rod, a bevel formed at the interior of each of said cage parts concentric with said rod, a stop ring abutting against each end of said segments, bevels formed on one surface of each of said stop rings, the said bevels having close frictional contact with the aforesaid bevels of the said cage parts, a spring exerting a continuous pressure upon a portion of said cage and upon said segments, a contact formed between a portion of one of said cage parts and a gland, the said gland surrounding the whole construction, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of November, 1894.

EDWD. M. HEDLEY.

Witnesses:

J. SAMPAYS,

A. CUMMINGS.