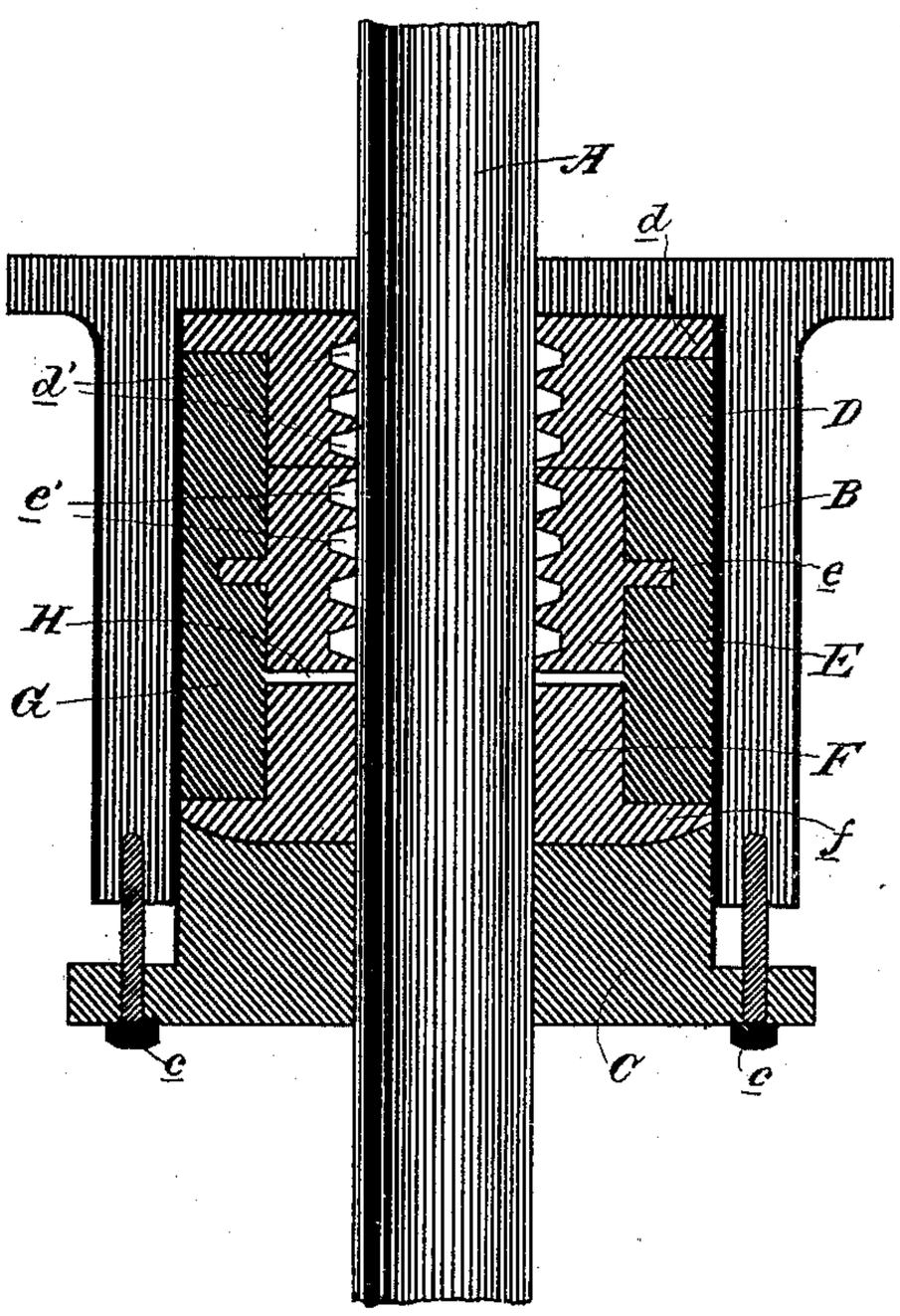
(No Model.)

C. H. ENSIGN & P. B. WRIGHT.

PACKING FOR STUFFING BOXES.

No. 408,407. Patented Aug. 6, 1889.



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UNITED STATES PATENT OFFICE.

CHARLES H. ENSIGN, OF TEMESCAL, AND PHIN B. WRIGHT, OF BERKELEY, CALIFORNIA.

PACKING FOR STUFFING-BOXES.

SPECIFICATION forming part of Letters Patent No. 408,407, dated August 6, 1889.

Application filed March 30, 1889. Serial No. 305,442. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. ENSIGN, of Temescal, and PHIN B. WRIGHT, of Berkeley, both in Alameda county, State of California, have invented an Improvement in Packing for Stuffing-Boxes; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to the class of packings for stuffing-boxes of piston-rods, valve-rods, pump-rods, or any reciprocating part about which a tight joint is required to be formed; and our invention consists in the constructions and combinations of devices, which we shall hereinafter fully describe and claim.

Referring to the accompanying drawing for a more complete explanation of our invention, the figure is a longitudinal vertical section of a stuffing-box and of our packing therein.

A is a piston-rod, valve-rod, or any other reciprocating part of a machine or other mechanism.

B is the stuffing-box, closed at one end and open at the other end to receive the setting-up gland C, which is here shown as secured to the box by means of screw-bolts *c*.

D is a ring, which in practice is made in semicircular sections, adapting it to be readily fitted to the rod A, and to be contracted thereon. One end of this ring has a flange *d*, and said ring is seated upon the rod and against the closed end of the box B.

E is a contractible ring, which is also made in semicircular sections, and when said ring is fitted to the rod its separated ends are so located as to break joints or quartering with the separated ends of the ring D, thereby forming a tight joint. This being a common manner of forming such a joint, we have not herein deemed it necessary to illustrate it, nor have we deemed a figure necessary to illustrate the contractible feature of the rings, as such construction is common and will be readily understood.

The ring E is seated upon the rod and bears close up to the ring D. It is provided with a flange *e*, located approximately centrally. F is a ring, also made in semicircular sections and provided with a flange *f* at one end.

The rings D, E, and F are all made of some hard and durable material—such as wood or metal, the latter being preferable—and in order to provide for lubrication the rings D and E may have formed in their inner surfaces the grooves *d' e'*, which are intended to be filled with plumbago or other suitable lubricant.

G is a band or ring made of some suitable compressible or elastic material adapted to contract and hold the metal rings in place. Rubber is preferred for this ring, though compressible material—such as hemp, rope, or wicking—may be employed. It is seated around the three metal rings, bearing between the flanges *d* and *f* of the end rings, and being grooved upon the flange *e* of the intervening ring. Its length is such as to hold the ring F away from ring E, thus providing an expansion-joint at H, which is capable of adjustment when the packing requires setting up. The gland C bears against the end of ring F. Now, it will be seen that by properly setting up the gland the ring F is forced in and sufficiently compresses the elastic band or ring G between its flange and the flange of the ring D, to cause said band or ring G to bind upon all the metal rings and force and hold them to their seats upon rod A. The flange *e* of the middle ring being grooved into the band or ring G, said middle ring is firmly held and is kept set up to ring D and away from ring F, so as to insure the full operation of the expansion-joint. After use, when it becomes necessary to tighten up the packing, the gland C is further set up and the expansion-joint permits the ring F to be forced in, thereby again properly compressing the elastic band or ring G. There is little wear on the packing, and it can always be kept well set up. It can be easily applied and as easily removed, and is very durable.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A packing for stuffing-boxes, consisting of the combination of the contractible metal rings D and E, fitted about the moving rod and forming a tight joint between them, the movable metal ring F, also fitted about said rod, and the encircling band or ring of compressible or elastic material binding upon said metal rings, and adapted by the move-

ment of ring F to be compressed, so as to hold the rings to place on the rod, substantially as described.

2. A packing for stuffing-boxes, consisting of the combination of the flanged contractible metal rings D and E, fitted about the moving rod and forming a tight joint between them, the movable metal ring F, also fitted about said rod and having a flange, and the band or ring G of compressible or elastic material fitted about said metal rings and confined by their flanges, said band or ring G being compressed by the movement of the ring F to hold said metal rings to place on the rod, substantially as described.

3. In a stuffing-box packing, the combination of the contractible metal rings D and E, having grooves on their inner surfaces for a lubricant, the movable metal ring F, and the compressible or elastic band or ring G, encircling said metal rings and holding them to place, substantially as described.

In witness whereof we have hereunto set our hands.

CHARLES H. ENSIGN.
PHIN B. WRIGHT.

Witnesses:
DU RAY SMITH,
G. R. BURNS.