(No Model.)

J. B. DEEDS.

METALLIC PACKING.

No. 344,084. Patented June 22, 1886.

Fig. 1.

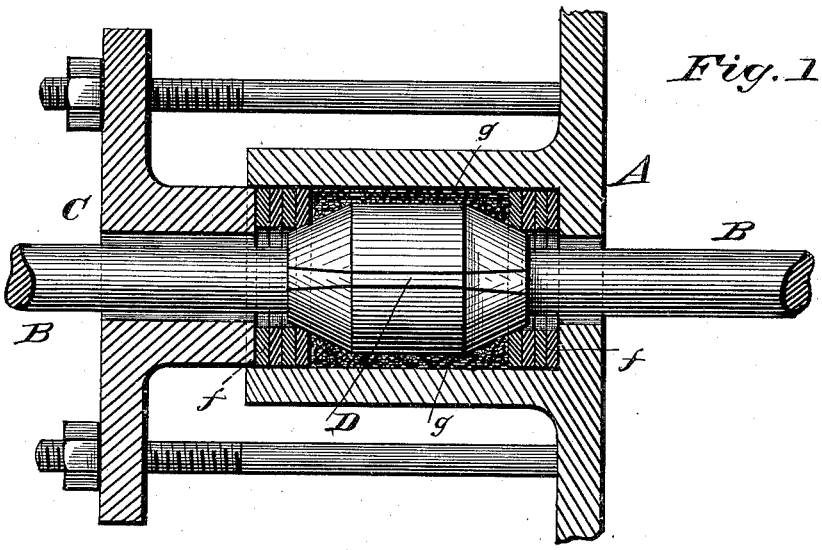


Fig. 2.

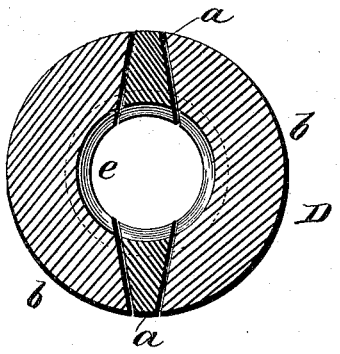


Fig. 3.

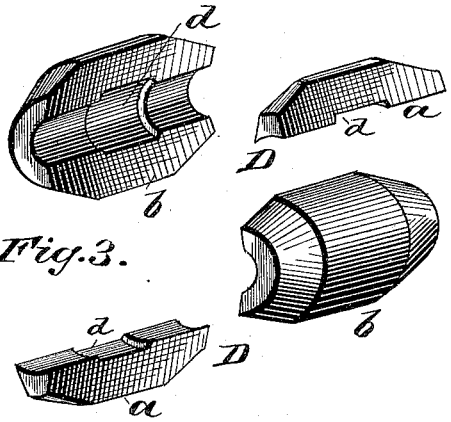
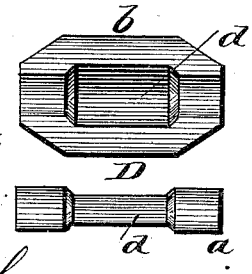


Fig. 4.



WITNESSES

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METALLIC PACKING.

SPECIFICATION forming part of Letters Patent No. 344,084, dated June 22, 1886.

Application filed October 26, 1885. Serial No. 180,954. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. DEEDS, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Metallic Packing for Stuffing-Boxes; 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.

This invention relates to certain improvements in metallic packing for stuffing-boxes; and it consists substantially in the same as constructed and in such other details as will hereinafter be more particularly described, and pointed out in the claim.

The invention has reference entirely to the form of construction of the packing, by which thorough uniformity of wear thereof is insured, and a perfectly tight joint around the rod preserved.

Reference being had to the accompanying sheet of drawings, Figure 1 represents a longitudinal section of stuffing-box embodying a metallic packing constructed in accordance with my invention. Fig. 2 is a sectional side elevation of the packing ring or sleeve as it appears when the segments or sections of which it is comprised are properly put together. Fig. 3 represents a view in perspective of each part of the sleeve, said parts being arranged relatively to each other. Fig. 4 is an inner side elevation of a large and small section of the metallic sleeve or packing.

In carrying my invention into effect I provide a ring or sleeve of metal, which is divided longitudinally for its whole length into a corresponding pair of large and small segments or sections, each section being formed on its inner surface of a contour to conform to the shape of the valve or piston rod, while in cross-section the smaller sections are wedge-shaped and the larger ones have their contiguous or adjacent surfaces formed in such manner as that to fit all the parts properly around the rod, the narrowest or tapered edge of the smaller sections will be brought outward. In lieu of this latter, however, the exact reverse may be the case, the object sought being that the one pair of sections will compensate for the other in the wearing action due to movement of the rod. During the working of the rod, one set will act to force the other inward, and vice versa, thus accommodating themselves to the vibrations of said rod, and maintaining a perfect joint. Each end of the sleeve, as a whole, is formed conical or tapering, as shown, and surrounding such ends, within the stuffing-box, are sets of elastic rings, which serve to preserve the parts of the sleeve together around the rod, and are kept sufficiently tight by proper adjustment of the gland. A space is left between the outer surface of the sleeve and the interior wall or surface of the box, which space is designed to be packed or filled with a suitable material—as rubber, hemp, or cotton; or the sleeve may be wrapped with such material. In some instances I may desire to form the adjacent surfaces of the two sets of sections slightly correspondingly convex and concave in the direction of their lengths, such form, however, not being herein shown.

Referring to the several parts by the letters marked thereon, A represents a stuffing-box, B the rod working therein, and C the gland, each being of the ordinary form.

D represents the metal packing-sleeve, as a whole, the same being circular in form and tapered or conical at each end, having a central opening for the passage of the rod, and being divided lengthwise or longitudinally into a pair of small corresponding wedge-shaped sections, *a*, and a pair of larger corresponding sections, *b*. The inner surface of each section conforms to the contour of the rod around which it is placed, and in each section is formed an inner recess or depression, *d*, by which, when all of the sections are properly put together, a continuous chamber, *e*, is formed for the reception of a suitable lubricant, as black-lead or plumbago.

f represents sets of elastic rings, which surround the conical ends of the sleeve and preserve the several sections thereof properly in place. The space between the sleeve and interior surface of the box is filled with hemp or cotton, as seen at *g*, which prevents leakage from between the sections.

I am aware that it is common to provide stuffing-boxes with a packing consisting of a

solid piece of wood, cylindrical in form, and well saturated with oil or similar lubricant, which wood may have one or both ends conical in shape. This packing not being expansible, will soon wear, and a loose joint is the result. It is also old to have metallic packing for piston-rods, composed of a series of rings, each made in a number of sections, having inclined meeting-faces, each alternate section of a ring having a spring to advance the sections to the rod in their operation, to take up wear and maintain a close-fitting joint. To the effective working of this packing, a series of rings must be employed, and each ring must be provided with two or more springs. The objections to springs in this connection are manifest, and it is desirable to dispense with their use. Furthermore, it has been a common practice to make a piston-rod packing of some soft metal, annular in shape, and having a reduced end, and to combine therewith a correspondingly-reduced contracting-ring, to take up the wear of the packing. This packing has also an annular depression, to form a water-chamber around the rod. Such packing is liable to become distorted, and is soon worn and easily deranged. By my construction the annular packing is made in sections, with inclined meeting-edges, and each end conical, and engaged by a correspondingly-shaped compressing or following ring, thereby producing an expansible sectional ring without the use of springs.

So far as I am aware, it is new to make a rod-packing annular in form, in a number of sections, having inclined meeting edges, said annulus having a conical shape at each end, in combination with elastic rings at each end, and a follower, to cause the compression of the two ends of the annulus about the rod. It is also thought to be new to provide an annulus thus constructed with an annular depression, to form a lubricating-chamber about the rod.

Having thus described my invention, what I claim is—

The combination, in a stuffing-box, of an annular packing made in longitudinal sections having in inclined meeting edges, each section having a corresponding recess midway its ends to form an annular chamber around the rod and each end beveled to form a double conical-ended annulus, elastic rings at each end of the packing and bearing on its conical ends, and a follower to compress said rings, as and for the purpose set forth.

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

JOHN B. DEEDS.

Witnesses:
HARVEY J. HUSTON,
A. G. SENIGHT.