W. F. KEARNEY.

Packing for Stuffing Boxes, &c.

No. 201,683. Patented March 26, 1878.

Fig. 1.

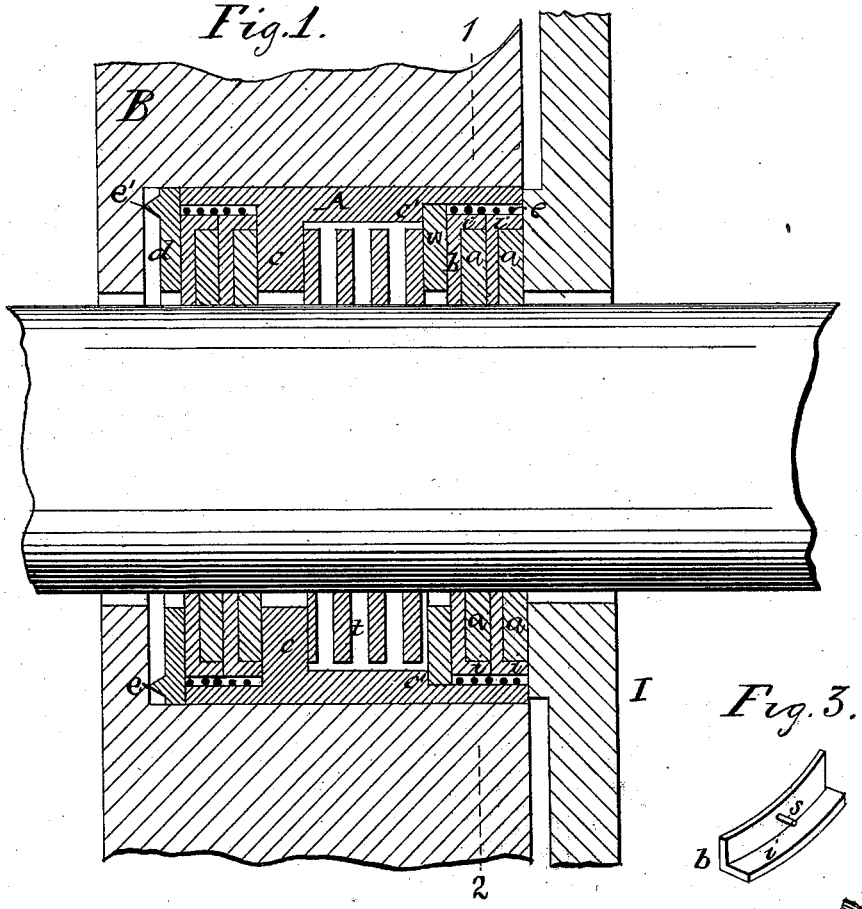


Fig. 3.

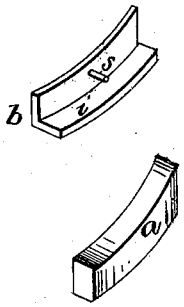
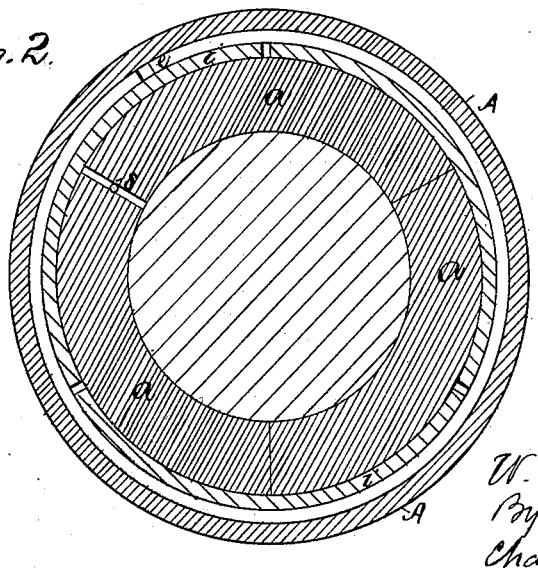


Fig. 2.



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WILLIAM F. KEARNEY, OF MICHIGAN CITY, INDIANA.

IMPROVEMENT IN PACKINGS FOR STUFFING-BOXES, &c.

Specification forming part of Letters Patent No. **201,683**, dated March 26, 1878; application filed February 25, 1878.

To all whom it may concern:

Be it known that I, WILLIAM F. KEARNEY, of Michigan City, La Porte county, Indiana, have invented Improvements in Packings, of which the following is a specification:

My invention is a packing, constructed as fully described hereinafter, to utilize the pressure of the steam in forming the joint, permit any necessary lateral play of the rod, and facilitate adjustment.

In the drawing, Figure 1 is a longitudinal section of sufficient of a cylinder-head to illustrate the construction and application of my improved packing. Fig. 2 is a transverse section on the line 1 2, Fig. 1; Fig. 3, detached perspective views of parts of the packing.

The inner bearing-face of the packing consists of the edges of segments *a*, of Babbitt or other suitable metal or material, and of L-shaped segments *b*, covering and inclosing the segments *a*. The segments *a b*, arranged to form rings, are adapted to and inclosed by a cylindrical case or shell, A, having an annular rib or projection, *c*, and an internal shoulder, *c'*, on the opposite sides of which two series of segments may be arranged with an intervening ring, *w*, and spring *t*, substantially as shown in the drawing. The shell is of nearly the same diameter as the stuffing-box in which packing is used, and the openings in the rib *c*, ring *w*, piston-head B, and gland I are slightly larger than the piston-rod, valve-rod, or other rod which passes through them, and there is sufficient room between the outer faces of the segments *b* and the inner faces of the shell to permit a slight radial play of the segment, and to receive split rings *e*, of wire, which hold the segments together in the form of rings.

In connection with the shell and segments, I use an annular plate or ring, *d*, having an annular sharp-edged rib, *e'*, which bears against the face of the cylinder-head at the bottom of the stuffing-box, and forms a steam-tight joint between the cylinder and the shell, which rests on the flat outer face of the ring, as shown.

The first series of segments are confined between the ring *d* and the flange *c*, and the second between the shoulder *c'* and the gland, which is screwed down tightly on the edge of the shell, and the segments *b* are all arranged with the flanges *i* toward the gland, as shown. The segments *a* are arranged within the segments *b* to break joint with the latter, a pin, *s*, on one of the segments *b* of each ring, extending between two of the segments *a*, and preventing them from slipping so as to bring the joints opposite those of the outer segment. When arranged as shown and described, the steam will find its way between the joints of the segments *b* into the space between the shell and the segment, and will exert a pressure on the outer faces of the flanges *i*, tending to maintain the inner edges of both the segments *b* and *a* in close contact with the piston or other rod, and any steam occupying the first series of segments will pass to the second series with like effect. The spring *t* maintains the outer segments in contact with the gland, preventing the escape of steam, and preserving a tight joint, whatever may be the wear, or however carelessly the gland may be applied.

It will be noted that no opening is made for the steam, but that portion is utilized which escapes around the rod between it and the cylinder-head, the ring *d*, with its annular rib, preventing the steam from passing to the outside of the shell. It will also be noted that this result depends on turning the flanges *i* toward the gland; otherwise the steam would enter between the segments *a b*, and expand instead of contract the latter.

As the rod has no bearing on the flange *c*, and the segments have a slightly radial play in the shell, the packing will accommodate itself to the rod should it not run true, and, having no positive lateral bearing, will not be forced against one side of the rod and wear unevenly should there be any deflection from the axial line owing to imperfect adjustment of the guides or other cause.

Owing to the arrangement of the parts within the shell A, they may be readily applied within the stuffing-box, and as easily withdrawn, without disturbing their relative positions.

I am aware that it is common to use a single packing-ring composed of sections or segments; but this will not effect the desired purpose for which I employ a series, which is, to cover the joints in one ring by those of that behind it, and the last by an annular plate, insuring the peripheral pressure of the steam.

It will be obvious that the segments may be arranged differently in any suitable manner; that but one or several series, each of two or more rings, may be used; and that each packing-ring may be divided into two, three, or any required number of segments.

My object is to provide a packing in a shape to be sold on the market and applied in the stuffing-box of any engine to the piston-rod of which it is adapted. With a shell combined with a gland this could not be done, as there is no standard arrangement or size of bolts or bolt-holes, and a gland having holes of any certain size and arrangement would not fit any place for which it had not been specially constructed.

The shell A, with its rings, can be readily inserted in any stuffing-box, and secured by the gland adapted thereto, the latter being used, if needed, without alteration.

I claim—

1. The combination, in a packing, of series of two or more L-shaped segments, *b*, arranged with their flanges *i* toward the gland, segments *a* fitting within the segments *b*, and arranged to break joint with the latter, and an imperforate ring behind the rear segment, all substantially as specified.

2. The combination of the segments *a b*, clamping-rings *e*, and shell A, adapted to the stuffing-box, and to be confined by, but separate from, the gland, as set forth.

3. The combination, with the shell and packing, of the ring *d*, having a sharp-edged rib, *e'*, as and for the purpose specified.

4. The combination of the shell and segments *a b* with the gland and cylinder-head, all constructed and arranged to admit of a slight radial movement of the rod and packings without contact with any fixed bearing-surface, as and for the purpose described.

5. The combination of the series of segments *a b*, spring *t*, and shell A, having an internal flange, *c*, and shoulder *c'*, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM F. KEARNEY.

Witnesses:

H. A. ERNST,

W. C. DRUMMOND.