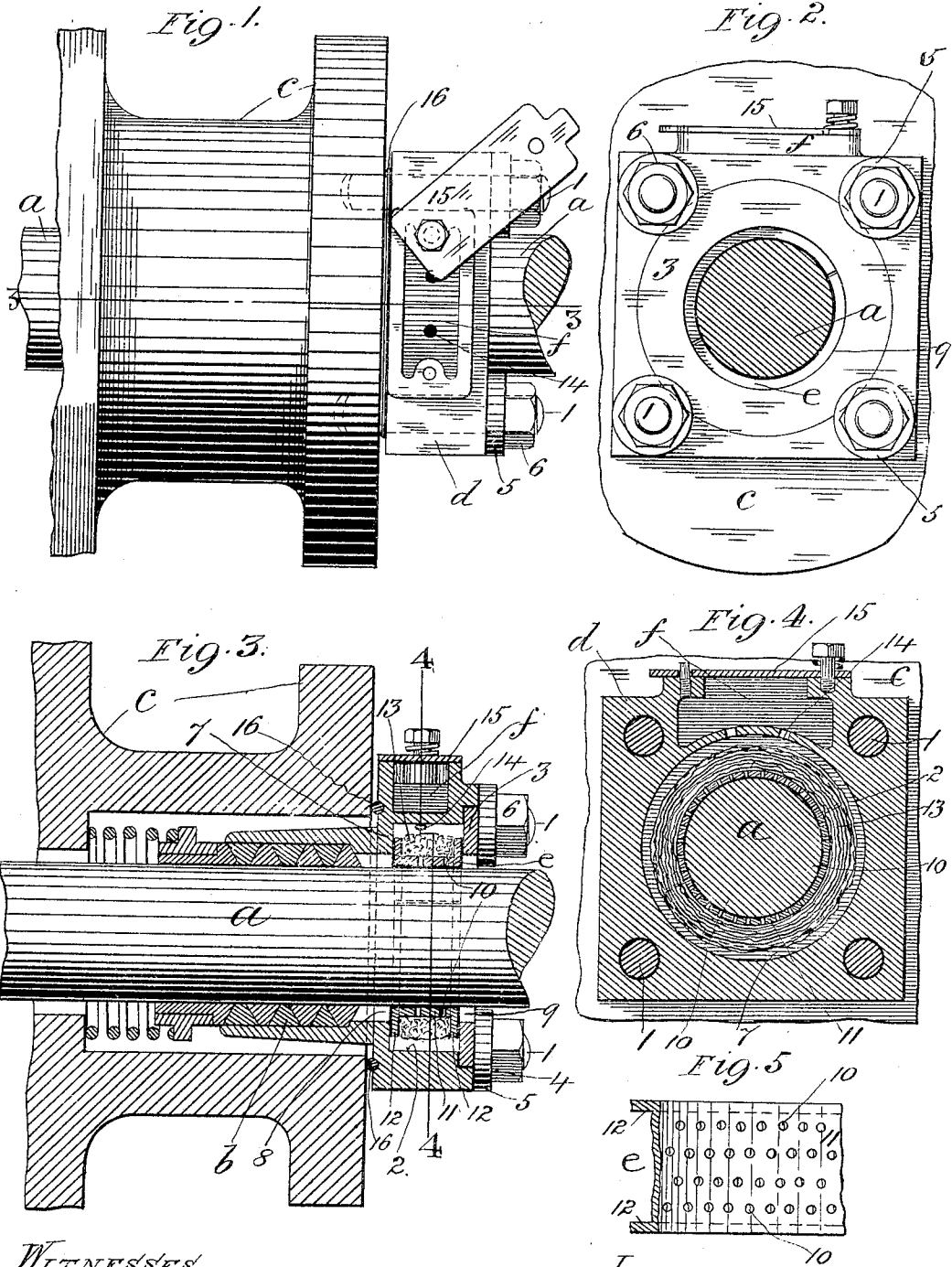


No. 813,398.

PATENTED FEB. 27, 1906.

J. B. BARNES.
LUBRICATOR FOR PISTON RODS.
APPLICATION FILED DEC. 30, 1905.



WITNESSES
M. D. Whitecomb
J. W. Bunker

INVENTOR
Joshua B. Barnes
By Edward W. Furrell
His Atty

UNITED STATES PATENT OFFICE.

JOSHUA B. BARNES, OF SPRINGFIELD, ILLINOIS.

LUBRICATOR FOR PISTON-RODS.

No. 813,398.

Specification of Letters Patent.

Patented Feb. 27, 1906.

Application filed December 30, 1905. Serial No. 293,984.

To all whom it may concern:

Be it known that I, JOSHUA B. BARNES, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented a new and useful Improvement in Lubricators for Locomotive and other Engine Piston-Rods, of which the following is a specification.

My invention relates specially to a lubricator combined in lieu of the ordinary gland with the metallic packing of a locomotive piston-rod, but also applicable to other piston-rods, and has for its object to economize power by reducing the friction on the rod and to maintain the smoothness thereof.

The invention consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan of my improved lubricator, showing its attachment to that part of the cylinder-head containing the ordinary metallic packing through which the piston-rod reciprocates; Fig. 2, a front elevation thereof; Fig. 3, a vertical longitudinal section through the same on line 3 3 in Fig. 1; Fig. 4, a vertical transverse section through the lubricator on line 4 4 in Fig. 3; and Fig. 5, an inner face view, to enlarged scale, of a portion of the tube or sleeve forming part of my invention, showing the disposition of the holes therethrough for the passage of the lubricant.

Like letters and numerals of reference denote like parts in all the figures.

a represents the piston-rod of a locomotive-engine, having the metallic packing *b*, which surrounds the rod *a* and is contained within the cylinder-head *c* in the usual well-known manner. To the outer face of the head *c* is fixed by studs (or bolts) 1 a preferably square (or other suitably shaped) box *d*, which takes the place of the ordinary gland, the box *d* having a preferably circular interior wall 2, which in the affixed position of the box *d* to the cylinder-head *c* surrounds and is concentric with the piston-rod *a* at a suitable distance therefrom, the interior of the box *d* being open at its front side and closed thereat in the assembled position of the parts by a preferably circular plate 3, which is let into a recess 4, formed in the front face of the box *d* and held in place thereto by preferably overlapping washers 5, placed between the nuts 6 of the studs 1 and the front face of the box *d*, as shown, or, if desired, in lieu of the

recess 4 the removable plate may be secured directly to the front face of the box *d* by separate bolts.

Through the rear wall 7 of the box *d* adjacent to the cylinder-head *c* is formed a central and preferably circular opening 8 concentric with and of somewhat larger diameter than the piston-rod *a*, which passes freely therethrough and through a similar opposite central opening 9, formed through the front closing-plate 3.

Within the box *d* between and in vertical sliding contact or thereabout with its rear wall 7 and front closing-plate 3 is placed around and in slidable fit or contact with the piston-rod *a* a tube or sleeve *e*, which is preferably made in halves and channel-shaped in cross-section, holes or perforations 10 being formed through its web or wall 11, the face of which is in contact with the rod *a*, while around the web 11 beside the flanges 12 of the sleeve *e* is wound a packing 13 of cotton or other suitable absorbent material. The holes 10 are preferably staggered and extend at suitable intervals entirely around the sleeve *e*.

By making the sleeve *e* in halves, as described, each segment thereof is adapted to yield independently of the other, whereby any binding of the sleeve *e* by the rod *a* during its reciprocation is prevented. If desired, also the interior surface or face of the sleeve *e* in contact with the rod *a* may be made slightly conical, as shown in Fig. 3, to prevent binding, in which case the sleeve *e* may be made in halves or not, as preferred.

In the top of the box *d* is formed a pocket or tank *f*, which is open at the top, and through the bottom of the pocket *f* are holes or passages 14, communicating with the interior of the box *d*. In the pocket *f* is placed a suitable lubricant, such as the grease used for lubricating the locomotive axle-boxes, which being gradually dissolved passes through the holes 14 into the box *d* and around the cotton packing 13, by which it is absorbed and escapes therefrom through the holes 10 of the sleeve *e* onto the piston-rod *a*, which is thereby constantly and uniformly lubricated.

The pocket *f* may be closed by a spring sliding cover 15, as shown, or otherwise, as desired.

For insuring a steam-tight joint between the box *d* and the cylinder-head *c* I preferably interpose between the rear wall 7 of the

box *d* and the outer face of the head *c*, a wire ring or bead 16, which is let into a corresponding recess in the wall 7 and bears externally against the said face, to which it is tightened by the nuts 6 of the studs 1, or this joint may be made in any other suitable manner.

By this invention, which is applicable to a reciprocating rod through the end of any cylinder, friction on the rod is reduced to a minimum and its surface maintained true and smooth. Moreover, by the reciprocation of the piston-rod *a* the lubricant is transmitted to the metallic (or other) packing *b* within the cylinder-head *c*, whereby undue friction between the surfaces is obviated.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a lubricator for a piston-rod, the combination with the cylinder-head containing the packing for the said rod, of a box fixed to the cylinder-head and adapted for the free reciprocation of the piston-rod therethrough, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve being wrapped with absorbent material, substantially as described.

2. In a lubricator for a piston-rod, the combination with the cylinder-head having an opening therethrough for the said rod, of a box fixed to the cylinder-head and adapted for the free reciprocation of the piston-rod therethrough, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve being

wrapped with absorbent material, substantially as described.

3. In a lubricator for a piston-rod, the combination with the cylinder-head containing the packing for the said rod, of a box fixed to the cylinder-head and having a wall at its rear side adjacent to the said head, a plate removably fixed to and adapted to close the front side of the box, the said wall and plate having an opening respectively surrounding the said rod at a suitable distance therefrom, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve being wrapped with absorbent material, substantially as described.

4. In a lubricator for a piston-rod, the combination with the cylinder-head containing the packing for the said rod, of a box fixed to the cylinder-head and adapted for the free reciprocation of the piston-rod therethrough, a pocket in the outer wall of the box containing a lubricant and having a passage therefrom through the said wall into the box, and a perforated sleeve encircling the piston-rod and held in position thereon within the said box, the said sleeve having lateral flanges, and having a wrapping of absorbent material between the said flanges, substantially as described.

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

JOSHUA B. BARNES.

Witnesses:

A. B. MARS,
E. R. JEFFERY.