(No Model.)

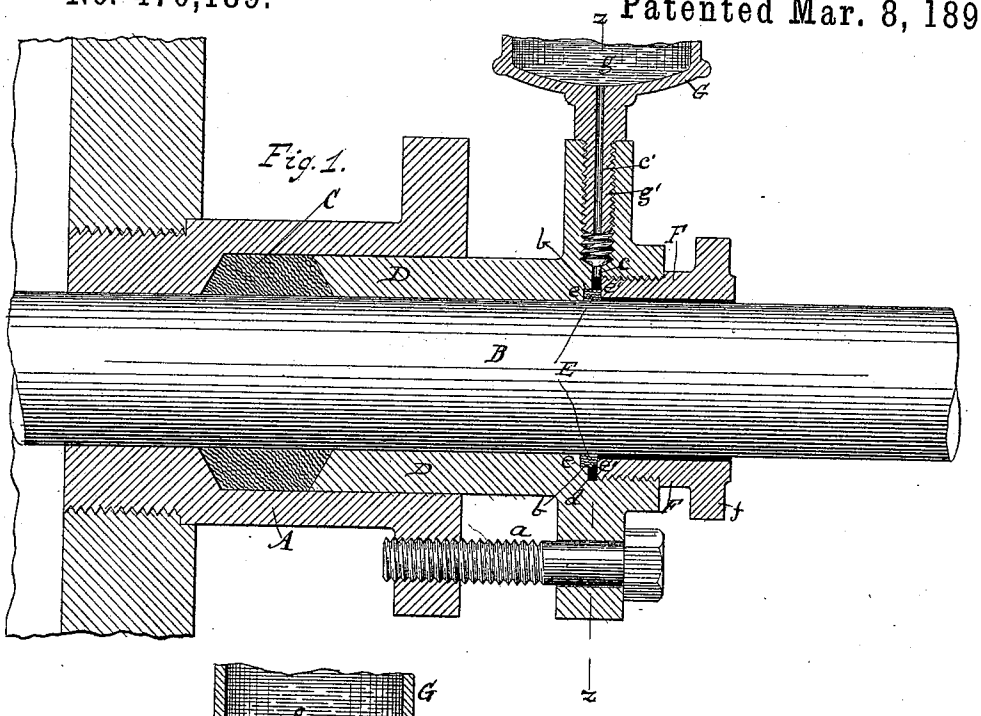
2 Sheets—Sheet 1.

E. GLOVER.

PISTON LUBRICATOR.

No. 470,189. Patented Mar. 8, 1892.

Fig. 1.



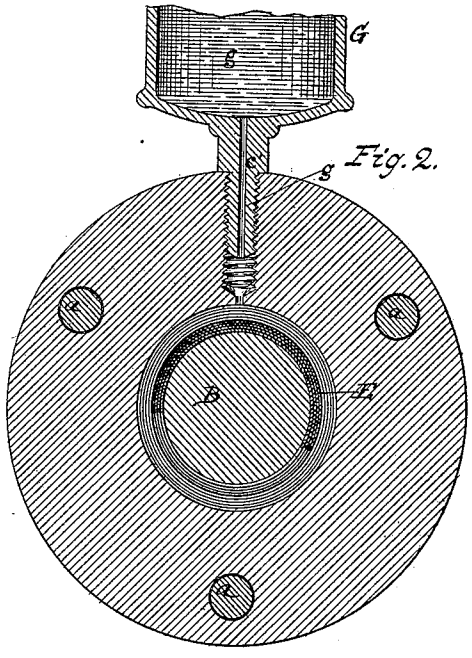


Fig. 2.

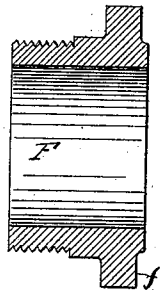


Fig. 4.

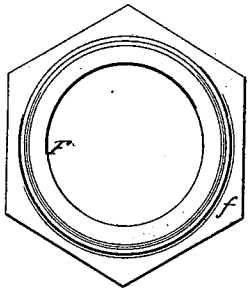


Fig. 3.

Witnesses:

A. Selkirk Jr.

Charles Selkirk

Edgar Glover

Inventor

by his attorney

Alex. Selkirk

(No Model.)

2 Sheets—Sheet 2.

E. GLOVER.

PISTON LUBRICATOR.

No. 470,189. Patented Mar. 8, 1892.

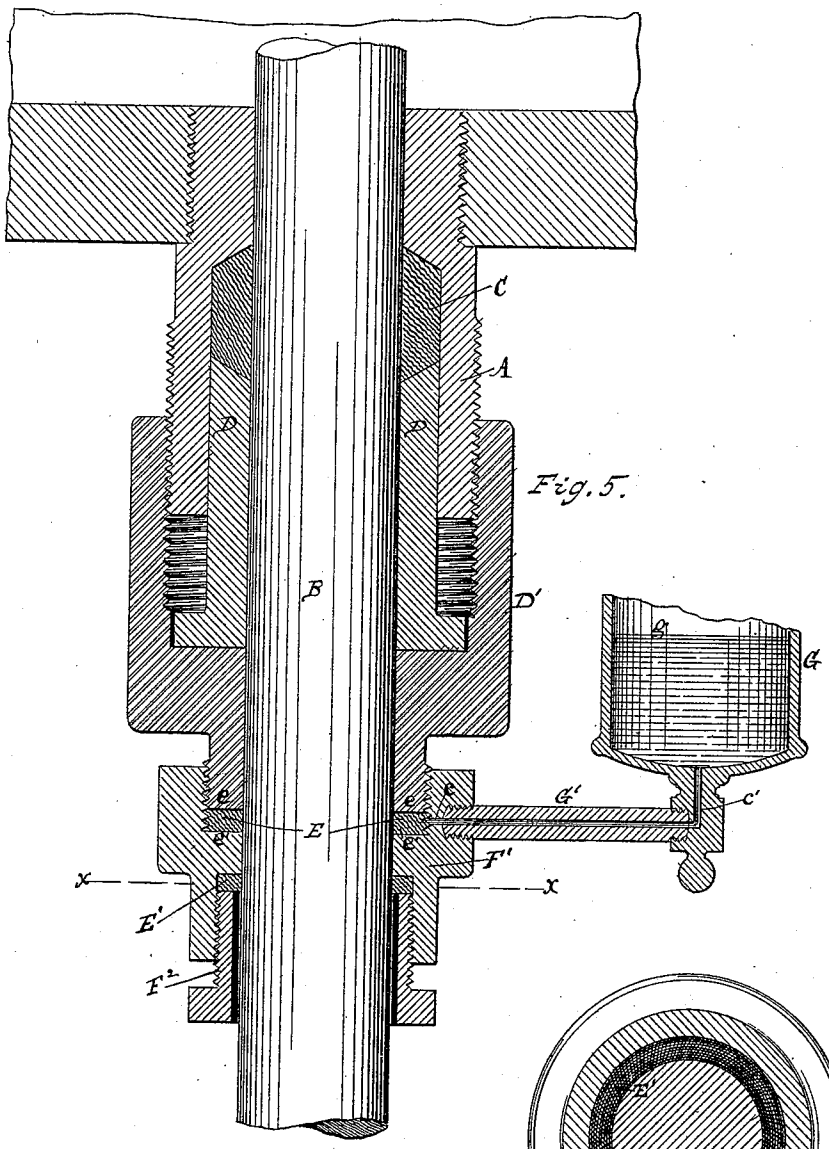


Fig. 5.

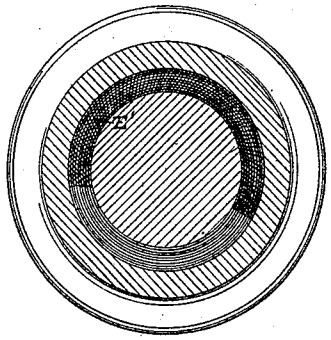


Fig. 6.

Witnesses:

A. Selkirk Jr.

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Inventor.

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Alex. Selkirk

UNITED STATES PATENT OFFICE.

EDGAR GLOVER, OF SCHENECTADY, NEW YORK.

PISTON-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 470,189, dated March 8, 1892.

Application filed January 8, 1891. Serial No. 377,124. (No model.)

To all whom it may concern:

Be it known that I, EDGAR GLOVER, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Piston-Lubricators, of which the following is a specification.

My invention relates to stuffing-boxes for piston-rods or other moving rods; and it consists of the combinations of devices or elements hereinafter particularly described, and specifically set forth in the claim.

The objects of my invention are to provide with a stuffing-box an annular or ring-form oil-distributing device which will encircle the piston-rod or other movable rod, a holding-sleeve, and an oil-holding vessel or oil-reservoir by which the said oil-distributing device will be made to keep the rod lubricated, and also to provide particular combinations of devices by which the features of this invention can be embodied in stuffing-boxes. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal sectional view of a stuffing-box, piston-rod, and gland, with my invention applied to the latter for operation with the piston-rod. Fig. 2 is a view taken in the reverse, as at *z z* in Fig. 1. Fig. 3 is an end view of the holding-sleeve of the oil-distributing device. Fig. 4 is a sectional view of the same. Fig. 5 is a longitudinal sectional view of a stuffing-box, gland, and adjuncts of modified form of construction, and illustrating my invention embodied therewith and applied to a vertically-moving piston-rod; and Fig. 6 is a view taken in the transverse, as at line *x x*, and illustrating a wiping-ring, part removed, and its seat, which can be used with my oil-distributing ring.

The same letters of reference refer to similar parts throughout the several views.

In the drawings, A is the stuffing-box. B is the piston-rod, (or other moving rod.) C is the packing contained in the stuffing-box around the rod, and D is the gland. These several devices can be made with any of the usual forms of construction and of any suitable proportion of sizes of parts. The gland D may be forced into the stuffing-box and on the packing by means of bolts *a a*, Figs. 1 and 2, or by means of the screw-threaded cap D′, working on the screw-threaded periphery of a stuffing-box and against a gland within said box, as illustrated in Fig. 5.

My invention is applied at the outer end of the gland D on the cap D′, working against the head end of the gland, and the essential elements applied thereto are the oil-distributing ring E and holding or supporting seats *e e′*, the seat *e* being stationary and made with the gland D or cap D′, working against said gland, while seat *e′* is movable at will toward or from said stationary seat, and a duct *c*, communicating from the outside to said oil-distributing ring. This oil-distributing ring E is made of any suitable fibrous or porous material which will absorb oil and allow it to escape therefrom on the surface of the rod B when moved in contact with said material of the ring. This ring E is shown in Fig. 1 to be supported at one side by seat *e*, made at the bottom of the screw-threaded recess made in the forward extension of the gland D, as shown in said Fig. 1, and also supported at its opposite side by seat *e′*, formed by the inner end of the sleeve F, provided with a screw-thread and working in the screw-threaded recess of the extension of the gland D, as shown in the same figure. This sleeve F, I term the "oiling-ring clamping-follower," and it is provided with a nut form of flange *f* for convenience for revolving the same to screw the follower into the recess of the gland or out from the same. In Fig. 5 this oil-distributing ring is shown to be seated between seat *e*, made of the outer end of an extension of the outer end of the cap D, and the seat *e′*, formed at the bottom of a screw-threaded recess made with the clamping-sleeve F′, as shown in said figure.

In Figs. 1 and 2 is shown an annular groove *d*, made at or near the groove *b*, of which *e* is the bottom and seat of the oiling-ring E. This groove *b* is open to the ring E and communicates with the duct *c*, through which oil is introduced to have passage into said annular groove, and from thence into the body of the fibrous or porous ring E, held between the seats *e e′*, as above described. In Fig. 5 this annular groove *b* (shown in Fig. 1) is omitted, and the oil from the duct *c* passes directly into the body of said ring.

G is a vessel for containing oil, which ves-

sel may be made of any suitable form of construction and is secured to the gland D, Figs. 1 and 2, so that its chamber g will have communication with the duct c. A suitable screw-threaded stem g', made with or joined with said cup and provided with duct c' and screwing into a corresponding screw-threaded hole communicating with the said duct c, can be employed to connect said oil-cup with duct c, leading to the ring E.

In Fig. 5 the oil-cup G is shown to be connected with the duct c by the screw-threaded tube G', communicating from the duct c' of the said cup G to the duct c, made in the clamping-sleeve F', Any other mode of connecting the said oil-cup G with the gland D or the sleeve F', so as to feed oil from said cup to the oil-distributing ring E, can be used.

In Figs. 5 and 6 is shown the rod-wiping ring E', made of any suitable fibrous material and secured between seats m and n, which may be produced substantially as are seats e e', between which the oiling-ring E is held, and which are shown in Fig. 5 to be produced one by the bottom of a screw-threaded recess made in the ring-clamping sleeve F and the other seat formed by the end of the screw-threaded sleeve F^2, as shown in said figure. This rod-wiping ring is intended to brush from the surface of the rod B any gritty foreign matter that may lodge on the same before being moved to the oil-distributing ring E. As before stated, this ring E can be made of any suitable fibrous or porous substance, yet I prefer to use cotton or cotton wicking or felt cut in form of rings or woven-fabric rings of two or more thicknesses laid against each other till the ring is of such sufficient thickness as to receive a slight pinch between the two seats e e' sufficient to hold with said rings or material and yet permit oil to filter through toward the inner surface of the ring against the rod. The degree of pinch or compression of the substance composing this ring E will regulate the flow of oil from duct c through said ring to the piston-rod, and the compression of this fibrous ring may be increased or lessened at will by moving the follower in the proper direction.

This invention can be used with advantage with all kinds of rods which are moved endwise through stuffing-boxes having packing material or devices for making a steam or water tight joint.

If preferred, the screw-threads on the clamping-sleeves F and F' and their coacting screw-threads in the recess made with the gland, as in Fig. 1, and the screw-thread on the projection of the cap D in Fig. 5 can be omitted, and smooth surfaces can be made with said sleeves F F' to work with the smooth surfaces of their coacting pieces, so that one piece can telescope in another, when a suitable set-screw working in the outer wall of the outer one of the coacting pieces and against the inner piece can be employed to hold said clamping-sleeve in place, with its seat e' against the oil-distributing ring E.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with a piston-rod and a stuffing-box containing a packing material and provided with a gland for tightening said material around said rod, of the oil-distributing ring E, of porous fibrous substance, in contact entirely around the piston-rod and contained between the stationary seat e, made with the gland or adjunct of the same, and the seat e', movable at will toward or from said stationary seat, forming the oil-duct between said two seats for conducting oil supplied from an oil-vessel to the said oil-distributing ring, substantially as and for the purposes set forth.

EDGAR GLOVER.

Witnesses:
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CHARLES SELKIRK.