(No Model.)

J. R. HODGES & W. M. DAVIE.

LUBRICATOR.

No. 381,375. Patented Apr. 17, 1888.

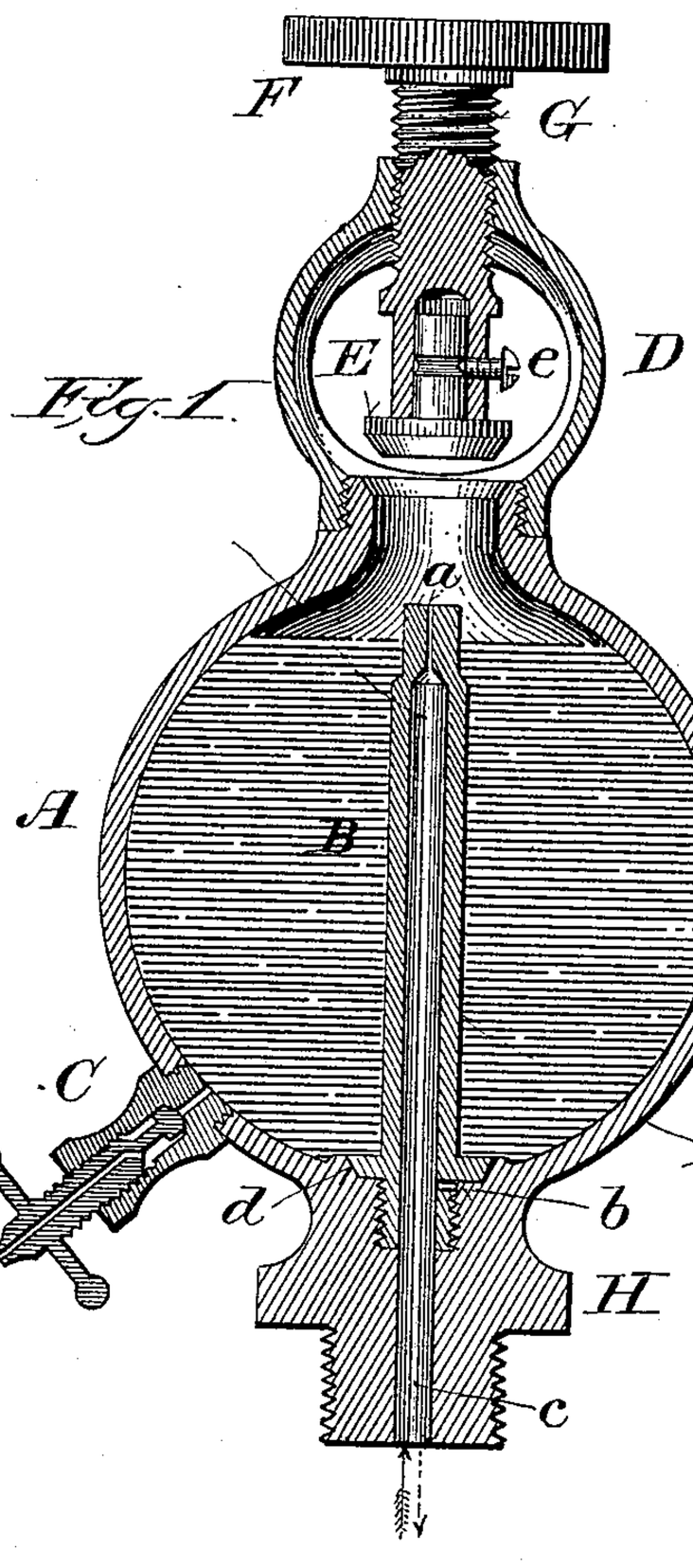

Fig. 1.

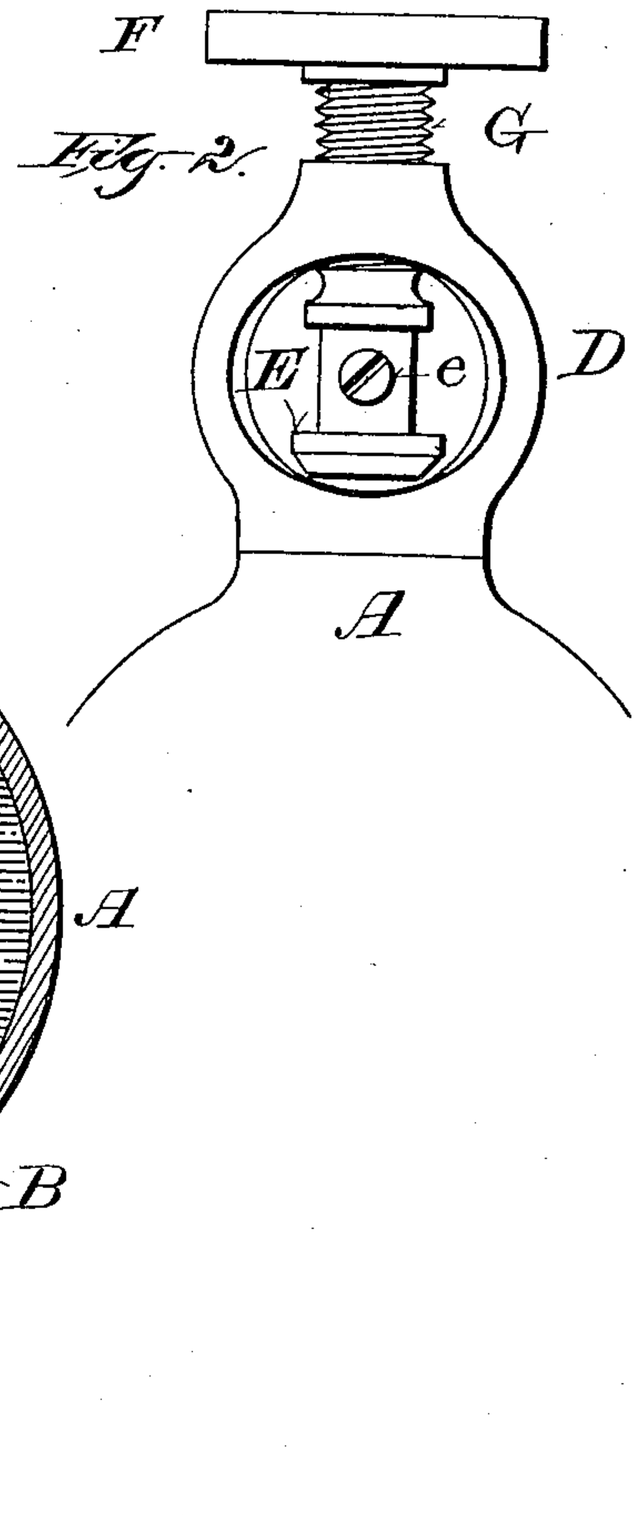

Fig. 2.

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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 381,375, dated April 17, 1888.

Application filed January 12, 1886. Serial No. 188,284. (No model.)

To all whom it may concern:

Be it known that we, JOHN R. HODGES and WILLIAM M. DAVIE, of Portage, in the county of Columbia and State of Wisconsin, have invented certain new and useful Improvements in Lubricators; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to the class of lubricators employed in connection with steam-cylinders; and it consists of certain novel improvements, hereinafter described, which have for their object, first, to automatically feed oil or any like suitable lubricant to steam chests or cylinders under pressure, and, second, to obviate the necessity of shutting off steam when the lubricator is filled.

In the accompanying drawings like letters refer to the same parts in both figures.

Figure 1 is a vertical medial section of our improved device, and Fig. 2 is a side elevation of the upper portion of the receptacle and of the filling-cover.

A represents the oil-receptacle, which may be globular in form, as shown, or of any other convenient shape. It is provided at the base with an externally-screw-threaded plug, H, by means of which the lubricator is attached to the steam-cylinder or its connections. A tube, B, is attached to the bottom of said receptacle A, and rises therein to a point near the top, where it is squared to receive a wrench, by means of which said tube is turned, the rim *d*, hereinafter described, raised or lowered, and the passages *b* opened or closed, as desired. A continuous passage, *c*, is formed through the plug H and tube B, and communicates at the top of said tube with receptacle A through a very fine aperture, *a*, which must be about three one-hundred-and-twenty-eighths ($\frac{3}{128}$) of an inch in diameter to produce the desired result or operate successfully.

The tube B is preferably formed separate from the receptacle A, and screw-threaded at the base, and provided with a valvular disk or rim, *d*, fitted to a seat formed at the base of said receptacle. Just below the rim *d* of said tube B a small passage or passages, *b*, communicate from the outside of said tube with the passage *c*.

The neck or upper part of the receptacle A is externally threaded to receive and engage with the internally-threaded base of cap or cover D, which is provided with a stopper, E. The cover D is of globular form and provided with large opening or openings at the sides for the purpose of filling the lubricator. It is also centrally and vertically tapped to receive the screw-threaded stem G of stopper E, which is swiveled by means of a small cylindrical shank in a socket formed in the lower end of said stem. A screw, *e*, passing through and threaded in stem G, engages with an annular groove formed in the shank of stopper E, and retains it therein, and at the same time permits said stem to turn freely about said stopper when the latter is seated in the opening into receptacle A.

By means of a milled head, F, applied to the upper end of stem G, the stopper E is operated. The wall of receptacle A is tapped near its base to receive the cock C, by means of which the water collecting in said receptacle is from time to time drawn off for the purpose of refilling the lubricator.

Our improved device operates as follows: Having been first properly attached to the steam-cylinder or any convenient connection thereof by means of the threaded plug H, the receptacle A is filled with oil and the stopper E seated to close the opening into said receptacle. Steam, being admitted into the cylinder, enters passage *c* and is admitted through the fine aperture *a* into receptacle A, where it condenses, settles, and displaces the oil at the bottom of said receptacle. The oil is thereby raised above the aperture *a* and descends by its specific gravity through the same and passage *c* into the steam-cylinder. To refill the lubricator, the condensed steam or water in receptacle A is drawn off through cock C, the stopper E raised by turning the threaded stem G in the proper direction, and oil is supplied through the opening at the top of said receptacle. The steam may be shut off from the cylinder during the operation of filling, if desired, although it is not necessary, since the

fine jet of steam admitted through the small aperture *a* is not sufficient to interfere with said operation.

When steam is cut off from the cylinder, the water collecting in the bottom of receptacle by the condensation of steam therein may be discharged directly into the cylinder and a copious supply of oil admitted thereto by unscrewing the tube B sufficiently to expose the opening *b* into passage *c*, although when it is desired simply to draw off the water of condensation for refilling the lubricator the cock C is more conveniently employed.

The details of our invention may be variously modified without departure from its spirit.

We are well aware that United States Letters Patent have been granted for lubricators having a central feeding-tube with a contracted aperture at its upper end, through which the lubricant is designed to be fed by agitation and gravitation, no provision being made for feeding the lubricant to the bearing by the admission of steam into the oil-receptacle. We are also aware that Letters Patent have been granted for lubricators having a central feeding-tube and valve for closing and regulating the size of the opening into said tube, and a cock for drawing off the water of condensation by which the lubricant is displaced in the lubricator and fed to the bearing; but the last-named device requires a valve which must be closed when the lubricator is filled, involving not only greater complication and expense in the manufacture of the lubricator, but also the danger of being burned by the escaping steam when the cover is removed or the stopper opened for the purpose of refilling the lubricator, since the valve controlling the feeding-passage is liable to be inadvertently left open.

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

1. The combination, in a lubricator, of the oil-receptacle A, the open side cover, D, and screw-stem provided at its lower end with stop-valve E, loosely supported by the screw *e*, all arranged as shown, and for the purpose specified.

2. The combination, in a lubricator, of an oil-receptacle and an internal feeding-tube provided with a rim secured by screw-threads in the base of said receptacle, and having an upright feeding-passage through said tube and receptacle, and a lateral passage leading out from said feeding-passage below said rim and arranged to open into said receptacle when said tube is raised, substantially as and for the purposes set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

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WILLIAM M. DAVIE.

Witnesses:
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