

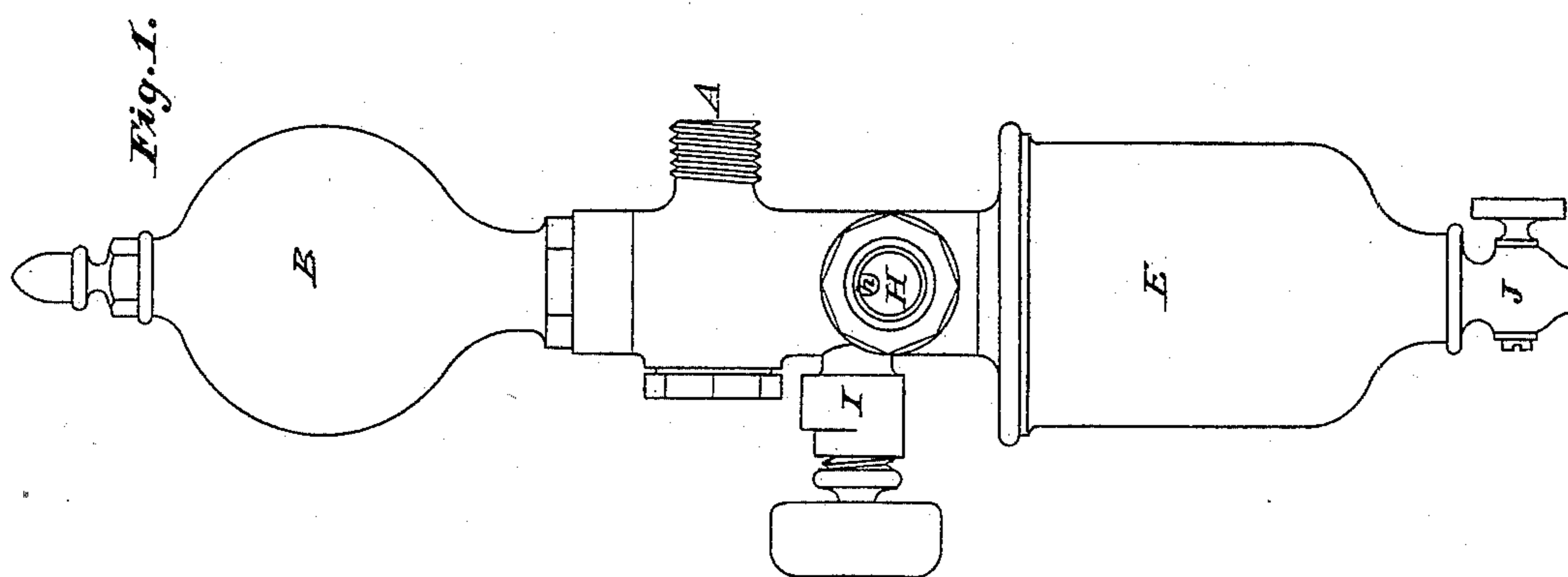
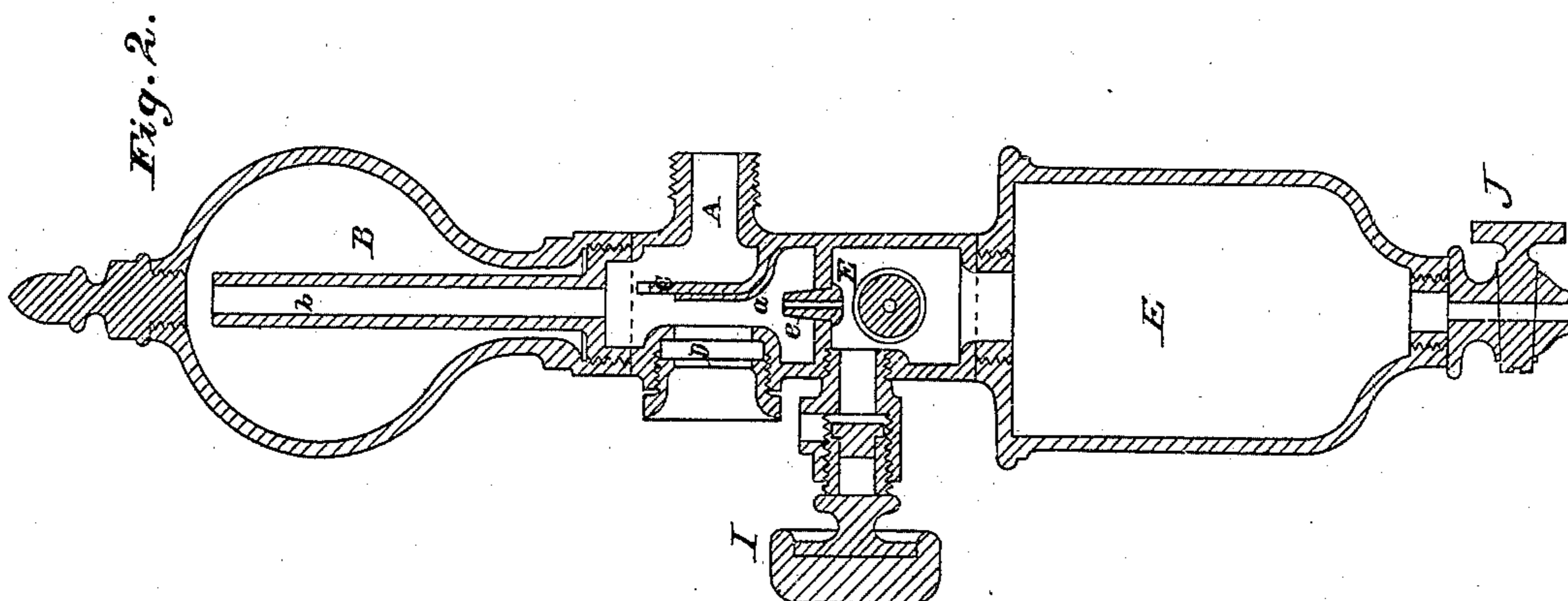
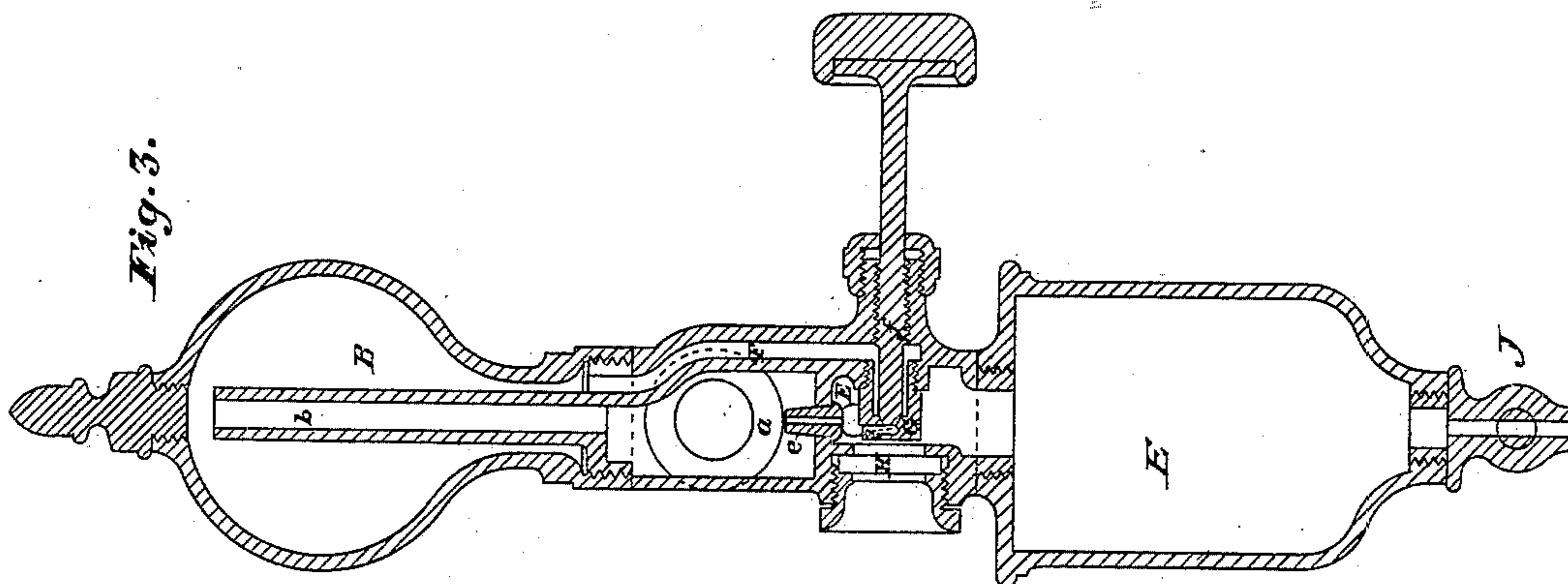
(No Model.)

W. H. CRAIG.

LUBRICATOR.

No. 277,464.

Patented May 15, 1883.



Witnesses:

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UNITED STATES PATENT OFFICE.

WARREN H. CRAIG, OF LAWRENCE, MASSACHUSETTS.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 277,464, dated May 15, 1883.

Application filed March 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, WARREN HILLIARD CRAIG, of Lawrence, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Lubricators, of which the following is a full and clear description.

This invention relates to that class of lubricators in which the lubricant is displaced by the admission of condensed steam to the oil-reservoir, thereby forcing the lubricant from the cup or reservoir through the outlets provided therefor to the parts of the machine to be lubricated.

My invention consists in a novel construction of parts and chambers by which the water may be regulated and seen as it passes downward through the lubricant, and also the lubricant can be seen as it passes to the steam-inlet or oil-outlet, to be discharged through the same to the steam-pipe of engine.

Figure 1 is a side elevation. Fig. 2 is a section taken on a plane with Fig. 1. Fig. 3 is a section taken at right angles to Figs. 1 and 2.

In Fig. 2, A is the steam-inlet, provided with a tube, *b*, extending up into condenser B, in which the steam becomes condensed to supply the water for displacing the oil. In the lower portion of A there is a chamber, *a*, provided with a partition, C, curved at the bottom and extending up past the steam-inlet, thus forming a water-trap. Directly in front of partition C, and on a line with the steam-inlet A, is a glass plate or observation-port, D. In the bottom of chamber *a* is a tube, *e*, connecting with the oil-chamber E. Directly in front of the observation-port D partition C is highly polished to form a light-reflector. It will therefore be understood that the lubricant, when displaced by water, as hereinafter described, will pass out of tube *e* up through the water condensed in the trap *a*, and be seen as it passes the observation-port D and over the polished portion of partition C, or in close connection thereto, and discharging over partition C to the steam-pipe of engine-cylinder. By reference to Fig. 3 the displacement of the lubricant by water will be more clearly understood. The steam, having entered the condenser B through the pipe *b*, becomes condensed

into water, passing down passage F to the oil-reservoir E. The lower portion of passage F is provided with a valve, *f*, and a valve-seat projection, G, extending into the oil-reservoir E, valve-seat projection G being provided with a passage, *g*, leading upward from seat of valve *f* to the upper portion of valve-seat projection G, where it is provided with a recess or opening leading to the polished face of valve-seat projection G, and is better shown at *h* in elevation, Fig. 1. In front of recess or opening *h*, and on a line with valve *f*, is arranged a glass pane or observation-port, H, in close connection with the polished face of valve-seat projection G, so that the drop of water, after leaving the recess *h*, may be seen as it passes down between the glass pane and the polished face of the valve-seat projection G. The advantage of the upward passage *g* and the recess *h*, in connection with the valve-seat projection G, over that shown and described in a previous application by me for Letters Patent on improvements in lubricators is that the oil, after the discharge of the water-drop, does not back into the water-outlet and have to be forced at each discharge. The drop being formed in the recess *h*, when it attains a proper size it will leave the recess and pass down between the polished valve-seat projection G and the glass pane H, leaving the upward passage *g* filled with water and continuing to feed, no extra head of water being required to insure a continuous and regular feed.

In Fig. 1, I is a valve provided with a hopper through which the reservoir is supplied with oil. Valve J, at the extreme bottom, is used to draw the fluid from the reservoir. The manner in which the lubricator is usually attached to the steam-pipe of engine is by means of a union made fast to the steam-inlet A and connecting with a valve commonly in use to the steam-pipe of engine, thus allowing the lubricator to be removed at any time when the steam-pipe of engine is filled with steam.

I am aware that my invention may be applied in different ways, one of which is by closing or dispensing with the tube *b* and connecting a pipe to the top of condenser B and connecting it with the steam-pipe of engine,

using the steam-inlet A as an oil-discharger only; but the way I have shown it is preferable.

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

1. In a lubricator, a steam-chamber provided with a partition, C, extending up nearly to top of such chamber, and arranged so as to form a water-trap in the lower portion of said steam-chamber and extending to the top of partition C, the water-trap to be provided with a drop-tube, *e*, connecting it to the oil-reservoir, the trap also having a glass pane directly in front of the polished portion of partition C, located above the drop-tube *e*, substantially as shown and described.

2. In a lubricator, a water trap or chamber provided with a glass pane or observation-port directly in front of a highly-polished reflector, and containing a drop-tube leading to oil-res-

ervoir and located below the glass pane and reflector, and having a discharge above the same to the steam-pipe, substantially as shown, and for the purpose described.

3. In a lubricator, the combination of the water-valve *f*, valve-seat projection G, having an upward passage, *g*, recess *h*, and polished portion, with observation-port H, arranged substantially as shown.

4. The projection G, set in close connection with the glass pane and provided with opening *h* in its highly polished face, said opening communicating with passage *g*, leading downward and connecting through the chamber of valve *f* with the water-passage F, substantially as shown and described.

WARREN HILLIARD CRAIG.

Witnesses:

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