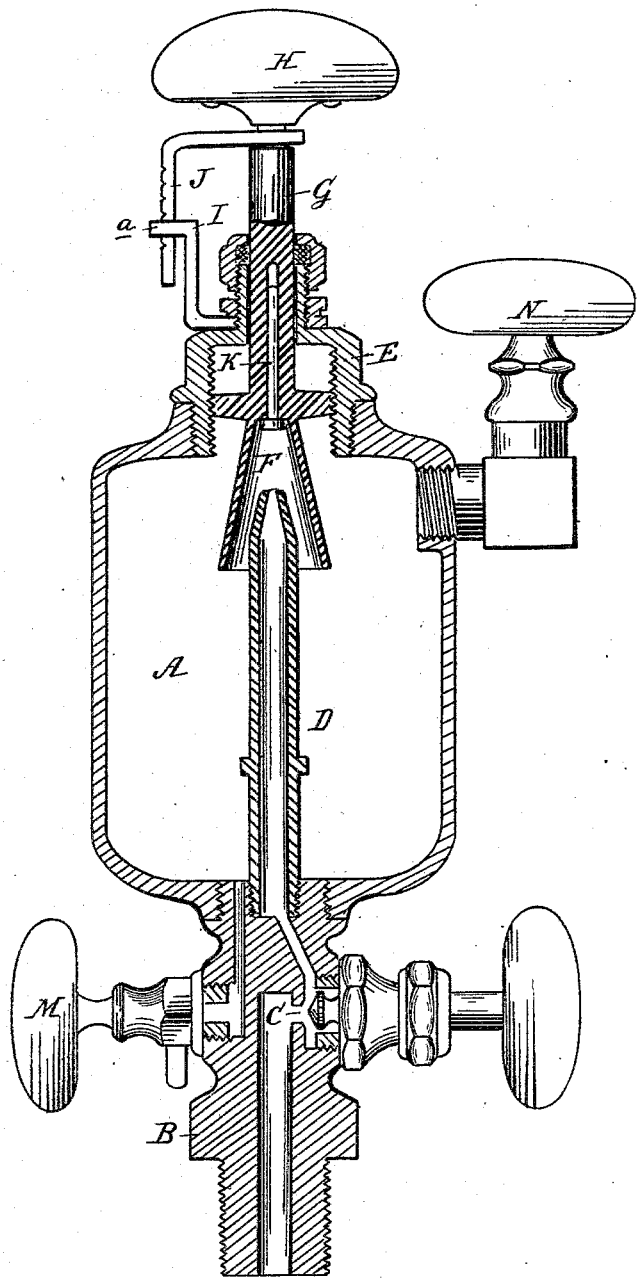
(No Model.)

A. WEBER & H. W. ROOD.

DISPLACEMENT LUBRICATOR.

No. 301,650. Patented July 8, 1884.



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UNITED STATES PATENT OFFICE.

ADOLPH WEBER AND HENRY W. ROOD, OF DETROIT, MICHIGAN.

DISPLACEMENT-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 301,650, dated July 8, 1884.

Application filed May 2, 1884. (No model.)

To all whom it may concern.

Be it known that we, ADOLPH WEBER and HENRY W. ROOD, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Displacement-Lubricators; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification.

This invention relates to certain new and useful improvements in lubricators for steam-machinery, which are known to the trade as "displacement-lubricators."

The invention consists in the peculiar combinations and the construction and arrangement of parts hereinafter more fully described, and then pointed out in the claims.

In the accompanying drawing, which forms a part of this specification, the figure represents a sectional view, and my invention is shown as applied to a lubricator constructed in accordance with my Letters Patent dated April 18, 1882, and numbered 256,609, and while thus shown I do not desire to limit myself to that construction, as my invention is equally well adapted to any lubricator wherein the oil is displaced and forced out of the device by the condensation of the steam.

A represents the oil-chamber, into the bottom of which is screwed the plug B, by means of which connection is made to the steam-pipe or the part to be lubricated.

C is a valve to regulate the flow of steam through the plug into the oil-chamber. This plug communicates with the pipe D, which projects into the chamber A nearly to its top.

E is another hollow plug, internally provided with a coarse thread, and this plug is screwed into the top of the chamber immediately above the end of the tube D.

F is an inverted chamber, the bottom being open, while the top is secured to the lower end of the stem G. The upper part of this chamber is provided with a coarse thread to engage with the female thread in the plug E, and the knob H enables the operator to turn the stem at will and with ease.

I is a fixed guide secured to the neck of the plug E, and J is an L-shaped index sleeved upon the stem just below the knob in such a manner as not to turn with the stem, but to follow its vertical motion. This index is provided on its outer vertical face with a series of notches, and it passes through a slot in the overhanging end *a* of the guide.

M is a discharge-cock through which the contents of the chamber A may be drawn off, when desired, and N is a plug through which the oil is filled into said chamber when said plug is removed.

In practice, the device being ready for use, the oil in the chamber stands upon the level of the top of the tube D. Now, if a small supply of oil is wanted to overflow through the tube, the stem G is screwed down, carrying with it the chamber F, which enters the oil, and embraces the top of said tube. The valve C is then opened, and steam flows through said tube into the chamber F, which is now of a very small area for condensing purposes; hence, the condensation will be slow, and the water of condensation will drop into the oil-chamber slowly, and displacing, drop by drop, a like quantity of oil, which escapes down through the tube. To increase the outflow, it is only necessary to raise the chamber F by means of its screw-stem, thereby affording room for greater and more rapid condensation. It is at this point that I make certain slight but radical changes, so that all danger of siphoning the oil out of the chamber A is prevented under all circumstances. These changes are to make the screw-stem G hollow, and fit therein, loosely, a small plug, K, of sufficient cross area at its lower end to entirely stop the upper end of the tube D. The operation of this plug is as follows: Steam entering through the tube D will raise the plug K, inserted in the hollow stem, and allow the escape of the oil through said tube. When steam is cut off, the plug falls by it own gravity, and stops the outflow of the oil. This plug in its upward movement is seated at the lower end of the hollow stem, as shown, and there may be an opening in such stem to allow the atmospheric pressure to be exerted upon the upper end of the plug, although this latter is not essential.

What I claim as my invention is—

1. In a displacement-lubricator, the combination of an adjustable inverted condensing-

chamber and delivery-tube with a gravity-plug, designed to close or disclose the upper end of such tube, substantially as and for the purposes specified.

2. In a displacement-lubricator, a hollow screw-stem carrying upon its lower end an inverted condensing-chamber, and provided with a plug fitting into said stem, and constructed to close by its own gravity the outflow of oil from the oil-chamber, substantially as and for the purposes set forth.

3. In a displacement-lubricator, the combination, with the cap E, internally threaded, of the adjustable hollow screw-stem G, externally-threaded to engage with the thread on said cap, and the inverted condensing-chamber F, secured to the lower end of said stem, substantially as and for the purpose specified.

4. In a displacement-lubricator, the combination of the cap E, hollow screw-stem G, adjustably held in place by said cap, the inverted condensing-chamber F, secured to the lower end of said stem, and the plug K, fitting loosely in said hollow stem, and constructed to stop by its own gravity the flow of oil from the oil-chamber, substantially as and for the purpose specified.

5. The vessel A, having inlet-aperture N, the plug B, having channel connecting with the pipe D and valve-seat, the valve C, the condensing-chamber F, having the hollow adjustable screw-stem G, and the gravity-plug K, fitting loosely in said hollow stem, the parts being combined substantially as and for the purposes described.

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Witnesses:
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