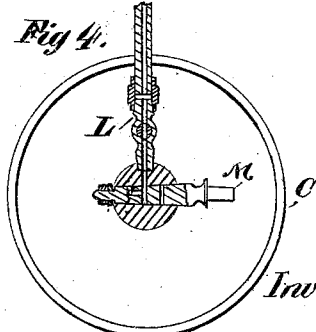
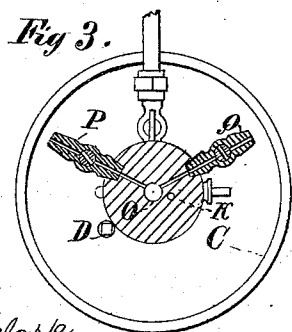
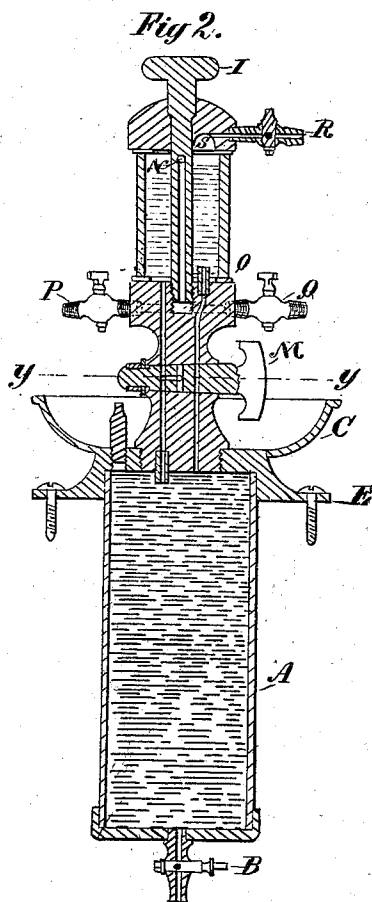
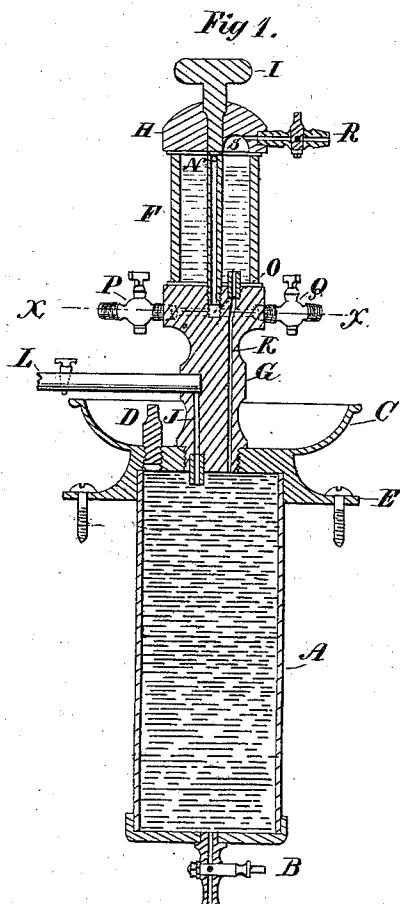


J. GATES.
Lubricators.

No. 138,243.

Patented April 29, 1873.



Witnesses;

Harrie B. Clarke.

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UNITED STATES PATENT OFFICE.

JOHN GATES, OF PORTLAND, OREGON.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **138,243**, dated April 29, 1873; application filed August 23, 1872.

To all whom it may concern:

Be it known that I, JOHN GATES, of Portland, in the State of Oregon, have invented a new and useful Lubricator; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention consists mainly, first, in a peculiar method of feeding oil, the same being delivered from the oil-reservoir through a body of water inclosed in a glass chamber, by which means its delivery can be readily observed and accordingly regulated; second, in the combination of an oil-chamber with a water-chamber, the former being located over the latter, and adapted to receive oil from it and deliver the same through the body of water to the feed-cocks; third, in a lubricator having an oil and water chamber, arranged as described, and also a water-induction pipe, and oil-delivery pipes, the employment of two independent passages connecting the oil and water chambers for the purpose of adapting the lubricator for periodical feeding. It further consists in certain details of construction, which, in connection with the foregoing, will be fully described hereinafter.

In the drawing, Figures 1 and 2 represent central sectional elevations of my improved lubricator, Fig. 1 being adapted for continuous feeding only, and Fig. 2 for continuous or periodical feeding, as may be desired. Fig. 3 represents a transverse horizontal section through the line *x x*, Fig. 1; and Fig. 4 represents a similar view through the line *y y*, Fig. 2.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A represents a cylindrical oil-chamber made of any suitable material, the lower end of which is closed by a screw-cap provided with a waste-cock, B, and the upper end by screwing it into the bottom of a metal pan or dish, C, which is used in connection with the screw-plug D in filling the chamber A with oil, and is also intended to receive any drip or leakage from the feeding-cocks P Q situated above it. Cast upon this pan or dish is a circular flange, E, by means of which the instrument is firmly se-

cured to a bracket or table, while the chamber A depends below it through a suitable opening provided. F is a hollow cylinder of glass, mounted on the top of a vertical stand, G, of cast metal, which is screwed into the center of the drip-pan C directly over the oil-chamber. The upper end of the glass cylinder is closed by a metal cap, H, and the joints being suitably packed the whole is held firmly together by a central bolt, I, the lower end of which is screwed into the metal of the stand G. A small passage, K, extends longitudinally through the stand G, and connects the oil-chamber A with the glass chamber above. Another passage, J, communicates with the induction-pipe L, and opens into the oil-chamber, as shown. The bolt I is hollow from its lower end upward to the point N, at which there is a hole in the side of the bolt, by means of which a communication is established between the upper part of the glass chamber and the small chamber O, into which the lower end of the said bolt is screwed. The two cocks P and Q communicate with the chamber O, as shown in Figs. 1, 2, and 3. The cock R communicates with a cavity, S, in the lower face of the cap H. These three cocks are used to control the discharge of the lubricant in the delivery from the instrument. By means of the pipe and cock L water is introduced into the instrument, either under elastic pressure superior to that resisting the delivery of the oil from the feeding-cocks, or under the hydrostatic effort of a column of water when the operating elastic forces are equal, or nearly so.

The operation of my improved oiler is as follows: The screw-plug D having been removed, the chamber A is filled with oil and the plug replaced. The glass chamber F is then filled with water. If one of the feeding-cocks be now slightly opened, oil will be forced by the pressure of water in the induction-pipe L out of the chamber A, through passage K, and will rise to the top of the glass chamber through the water contained therein. For each drop of oil withdrawn from the top of the glass chamber by continuous feed a drop of oil will ascend from passage K to the top of said chamber; and by observing through the glass the number of drops which ascend in any given time the rate of feed is determined, and may be modified at pleasure, either by the

induction or delivery cocks, or both. This facility of observation also removes all doubt as to whether the instrument is feeding.

In Fig. 2 my device is represented as adapted not only for continuous feeding, as shown in Fig. 1, but also for periodical feeding. The only change required to adapt the device for periodical feeding is to extend the passage J through to the oil-chamber. In order, however, that the apparatus may be used for either purpose, I provide a conical plug, M, which is so constructed that the passage K may be made to communicate with both the chambers F A, or be cut off from the chamber F, in which latter case the apparatus is identical with that shown in Fig. 1.

The construction of the plug is as follows: It has three sets of openings through it. Those corresponding to the passages K and L are in the form of a cross, so that the passages K and L are both open, whether the plug-handle is vertical or crosswise. For controlling the passage J the plug M is furnished with one opening through it, on a line with the handle, and into this opening is a side opening, P, and also a passage through the center of the plug longitudinally, connecting the passages J and L.

The operation of the oiler when feeding periodically is as follows: The screw-plug D having been removed the chamber A is filled with oil and the plug replaced. The handle of the plug M being placed vertically, as in Fig. 2, cock L is opened and water introduced into and through the plug M, and by means of the passage J the glass chamber F is filled with water. By reason of its superior specific gravity the water in the glass chamber will immediately begin to descend through the passage J into the oil-chamber A, displacing an equal volume of oil, which will rise through passage K, ascending therefrom in drops, and fill the glass chamber above. The rapidity with which this transfer will take place will depend on the size of the passages employed; but it is no objection if the transfer should occupy the space of several minutes, as it is only intended that

it shall be completed during the intervals of periodical feeding. The cock L is left open to admit water to replace oil ejected in feeding, and to maintain pressure within the instrument. Oil may be ejected through either of the feeding-cocks P, Q, or R. If the cock R is opened slightly, oil will pass out and the whole body of oil in the glass chamber will rise, while water from pipe L will enter the glass chamber through passage J to replace the ejected oil. If cock R is now closed and P or Q opened, oil from the upper part of the chamber will enter the hollow bolt at N, and, passing longitudinally through it into the small chamber O, will be discharged therefrom by means of the cock P or Q, as the case may be. When the feeding-cocks have been closed the glass chamber will, in a short time, be found to be again full of oil, the water it contained having descended to the oil chamber.

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

1. The described method of feeding oil, consisting in delivering the oil from the reservoir up through a body of water inclosed in a glass chamber, and discharging the same through the feed-cocks, substantially as described.

2. The combination of an oil-chamber with a water-chamber, the latter being located over the former, and adapted to receive oil from it, and deliver the same above the body of water inclosed in it, substantially as described.

3. The combination of the chambers A F, passages J K, and plug M with the induction-pipe I and feeding-cocks, substantially as described.

4. The drip-pan C provided with the filling-plug D, substantially as described.

The above specification of my invention signed by me this 8th day of August, 1872.

JOHN GATES.

Witnesses:

WM. STEPHENS,
TYLER WOODWARD.