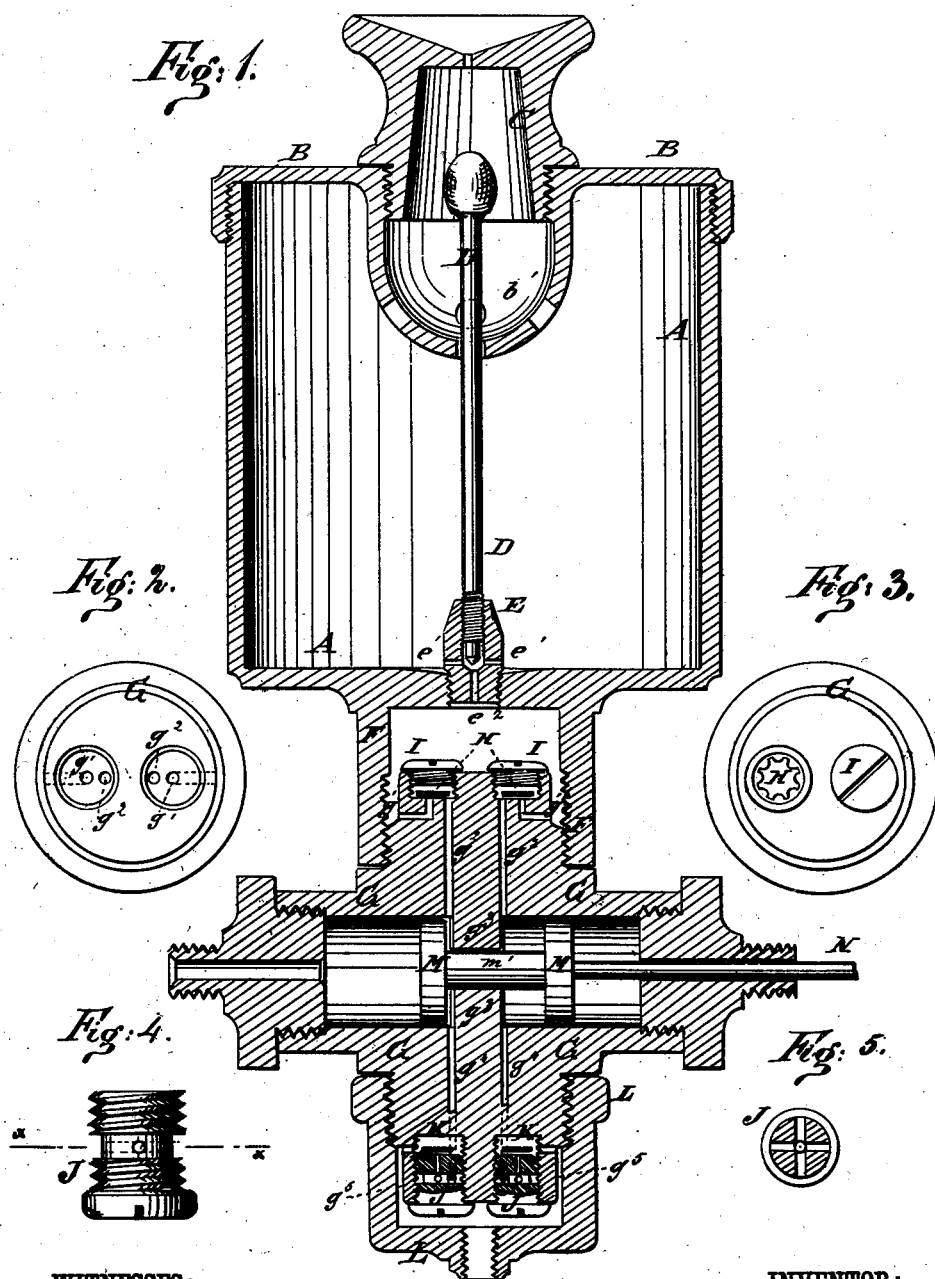


J. H. TAYLOR & R. W. MILLIE.
Lubricator.

No. 214,730.

Patented April 22, 1879.



WITNESSES:

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JOHN H. TAYLOR AND RICHARD W. MILLIR, OF NEW HAVEN, CONN.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **214,730**, dated April 22, 1879; application filed March 19, 1879.

To all whom it may concern:

Be it known that we, JOHN HENRY TAYLOR and RICHARD W. MILLIR, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Lubricators, of which the following is a specification.

Figure 1 is a vertical longitudinal section of our improved lubricator. Fig. 2 is a detail top view of the upper projection of the cylinder, the cap-screws and check-valves being removed. Fig. 3 is a detail top view of the upper projection of the cylinder, one cap-screw being removed. Fig. 4 is a detail side view of one of the lower cap and port screws. Fig. 5 is a detail cross-section of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved lubricator for steam-cylinders which shall be so constructed as to be uniform in its working, giving at each movement of its piston a fixed amount of oil to the said steam-cylinder by a forced injection, and which will allow the amount of oil to be increased and diminished as may be desired.

The invention consists in the combination of the oil-reservoir, the regulating-screw, and the cylinder, provided with the two sets of ports, the upper valves, the lower valves, the partition, and the double piston, with each other, to adapt the device for introducing oil into a steam-cylinder, as hereinafter fully described.

A represents the oil-reservoir, the upper end of which is closed by a screw-cap, B. In the middle part of the cap B is formed a cup-shaped depression, *b'*, provided with holes in its bottom to serve as a cup or funnel in filling the reservoir A with oil. The filling-cup *b'* is covered with a screw-cap, C, having a vent-hole formed through it to admit air into the reservoir A as the oil is withdrawn from it.

D is the regulating-screw, which passes down through a hole in the center of the filling-cup *b'*, and its lower end enters a screw-hole in the inner end of a screw-plug, E, screwed into a screw-hole in the center of the bottom of the reservoir A. From the center of plug E ports *e*¹ lead out through the sides of the plug E into the reservoir A, and from the said center a port, *e*², leads down through the outer end of

the said plug E, so that oil may flow out of the said reservoir through the ports *e*¹ *e*². The upper end of the port *e*² is recessed to receive the end of the regulating-screw D, so that by adjusting the said regulating-screw the outflow of the oil may be regulated or wholly prevented, as may be desired.

Upon the bottom of the reservoir A, around the outer end of the screw-plug E, is formed a ring-flange, F, having a screw-thread cut in its inner surface, to screw into a screw-thread formed upon a cylindrical projection formed upon the upper side of the cylinder G, so that the space above the said projection may serve as an oil-chamber. In the top of the projection of the cylinder G are formed two holes to serve as seats for two check-valves, H, the said holes being closed above the said valves by screw-plugs I.

From the oil-chamber above the cylinder G two ports, *g*¹, lead to the valves H, and from the space above and at the side of the valves H ports *g*² lead down to the cavity of the cylinder G at the opposite sides of the partition *g*³, that divides the said cavity of the said cylinder into two parts. From the opposite sides of the partition *g*³ two ports, *g*⁴, lead down through the lower part of the cylinder G, and open into two holes in a cylindrical projection formed upon the lower side of the said cylinder, which holes are closed by two screw-plugs, J. The screw-plugs J have ring-grooves formed around them opposite the openings of the ports *g*⁴, and holes formed in them leading from their sides at the bottom of their ring-grooves, and from their upper ends to their centers to form passages for the oil.

Upon the upper ends of the plugs J are placed check-valves K. From the space above the check-valves K ports *g*⁵ lead into the space between the lower projection of the cylinder G and the screw-cap L, which screws upon and covers the said projection, the said space forming the lower oil-chamber.

In the center of the bottom of the screw-cap L is formed a hole for the escape of the oil into the steam-cylinder, and which is provided with a screw-thread for connecting the device with a screw pipe or collar upon the said steam-cylinder.

In the cavities of the cylinder G are placed

two pistons, M, which are connected with each other by a stem, m' , passing through a hole in the partition g^3 , so that the said pistons may move together and form a double piston.

The heads of the cylinder G may be connected with the end parts of the steam-cylinder, so that the double piston M may be moved by steam as the piston of the said cylinder is moved; or the said double piston M may be provided with a piston-rod, N, passing out through one of its heads and connecting with some suitable moving part of the engine, so that the said double piston may be moved from the said movable part of the engine.

With this construction, as the double piston M moves in either direction a vacuum is formed in one of the cavities of the cylinder G, which causes the oil to pass from the upper oil-chamber through the port g^1 , raise the valve H, and pass through the port g^2 into the said cavity. At the same time the oil that may be in the other cavity of the cylinder G is forced out

through the port g^4 , raises the valve K, and passes through the port g^5 into the lower oil-chamber, and thence to the steam-cylinder, so that a certain quantity of oil will be forcibly injected into the said steam-cylinder at each movement of the double piston M.

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

The combination of the oil-reservoir A, the regulating-screw D, and the cylinder G, provided with the ports $g^1 g^2 g^4 g^5$, the upper valves, H, the lower valves, K, the partition g^3 , and the double piston M, with each other, to adapt the device for introducing oil into a steam-cylinder, substantially as herein shown and described.

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Witnesses:

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