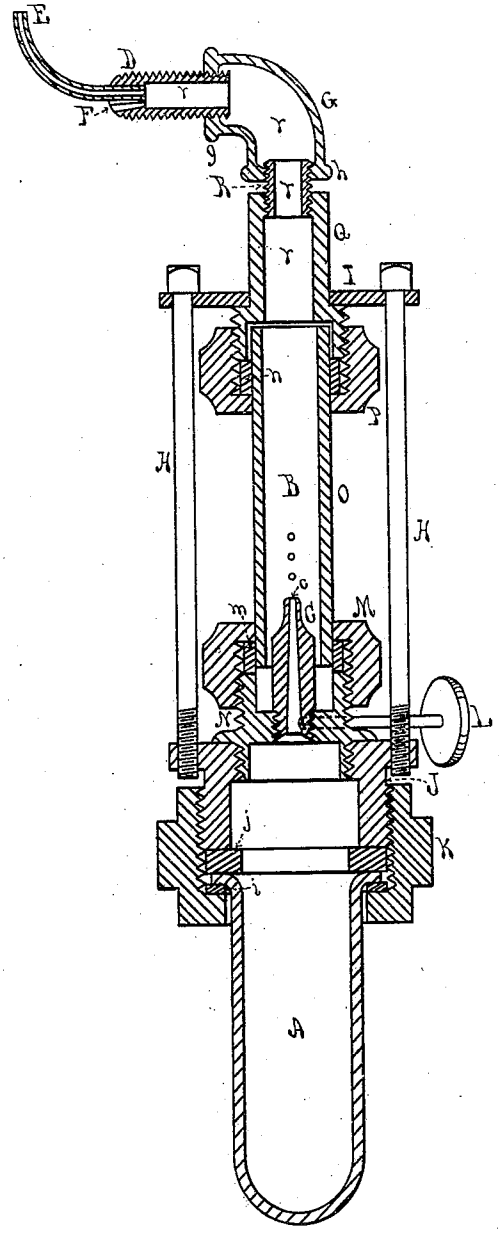
(Model.)

W. P. PHILLIPS.

Lubricators.

No. 228,216. Patented June 1, 1880.



Witnesses.

Wm. S. Brown

W. C. Wardwell

Inventor

Wm. P. Phillips,

by his Attorney,

Charles E. Pratt.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM P. PHILLIPS, OF BOSTON, MASSACHUSETTS.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 228,216, dated June 1, 1880.

Application filed April 12, 1880. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM P. PHILLIPS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Indicating-Lubricators, of which the following is a specification.

My invention relates to that class of machinery known as "lubricators," and more especially to the variety known as "indicating-lubricators," and is embodied in a contrivance which operates to lubricate the valves and pistons in the cylinders of steam-engines of any kind, and which at the same time regulates the supply of lubricant and indicates the rate of supply to the eye of the operator, and is in the nature of an improvement upon or modification of the inventions for which I have already made applications for Letters Patent.

Such a contrivance in a simple form is shown in the drawing hereto annexed, in which the figure represents a vertical section on a plane passing through the center of the device, and which, by means of the reference-letters thereon, I describe as follows:

A is an oil-reservoir, which I make of glass preferably, so that the amount of oil remaining in it may be observed, and which may be closed at the bottom, as shown in the drawing, or of any other convenient construction; but I usually have in the devices in actual use a petcock, inserted at or near the bottom, for drawing off the contents of this reservoir without disturbing the coupling above. The upper end of this reservoir is held tightly by the packings *i j* between the parts K and J of a coupling, which may be screwed tightly the one upon the other. Through this coupling, near the upper part, I usually insert a tap or a tube with removable cap, extending to the inside, above or into the reservoir A, through which the reservoir may be filled with oil without disturbing the coupling. The upper part of the coupling, in the part marked J, is threaded on the inside to receive another part of a coupling, N, which is threaded on the outside, and has its lower end screwed into the part J and is threaded internally at the smaller part to receive the tube or nozzle C, the latter being secured in the former by means of a thread on the outside of its lower end, and extending upward through the coupling, (as I prefer to make it,) and has a hole through its center or orifice *c*, smaller at its upper end, connecting with the reservoir A. To the outside of the part N is screwed an internally-threaded part M, which holds firmly and tightly, by means of the packing *m*, the lower end of a glass tube, O, around and over the nozzle C. This tube O contains a water-chamber, B, and is confined at its upper end by means of the packing *n* and the coupling P Q.

There is placed upon the smaller part Q a disk or transverse part, I, extending laterally beyond the coupling and containing holes for the slender bolts or rods H H. These rods H H, being headed at the upper end, are passed through the holes in the part I until the heads rest thereon, and extend downward to the part J, before described, which latter has projections or lugs, with internally-threaded holes to receive the threaded ends of the bolts H H. These, being tightened, hold all the parts described tightly and securely together.

L is a valve or threaded rod, with a thumb-piece on the outer end, extending through the parts N and C to the aperture through the latter, and the inner end, being as wide as the aperture and fitted to a valve-seat therein, operates to close partially or wholly the aperture *c*.

The part Q is hollow, and is connected, by the externally-threaded piece R, the elbow-piece G, and the externally-threaded part D, with the tube E. Of course these hollow parts D, G, R, and Q may be made in one or more pieces, as found desirable, their offices being to connect and support the parts below with the steam-pipe leading to the steam-chest, and to furnish through the center of them a continuous tube, *r r r r*, from the water-chamber B to the orifice F and the tube E.

The steam-pipe near the chest is tapped, and the hole threaded to fit and receive the externally-threaded part D, which is then screwed into it, so as to support the whole contrivance in the position shown in the drawing.

The orifice F and the hollow bent tube E, opening through the part D in slightly different or opposite directions, complete the connection between the chamber B and the interior of the steam-pipe.

The operation of this device is as follows:

The reservoir A is filled with oil, the chamber B is filled with water, and the valve L opened. The aperture *c*, although so small, allows the water and oil to change places through it slowly, even when not under pressure. The course of the steam in the steam-pipe being downward, and the tube E being bent upward to meet it, the steam enters the tube E with its full pressure, passes into and condenses in the hollow tubing or chamber *r r r r*, and thus adds to and presses upon the water in the chamber B, forces the water, drop by drop, intermittently downward through the orifice *c*, and the chamber A being full, every drop of water so entering it will displace a drop of oil. The oil therefore passes upward through the orifice *c*, and rises, drop by drop, as shown in the drawing, through the water in the chamber B, and out at the orifice F, and is then drawn downward with the steam to lubricate the cylinders and parts connected therewith.

It will be observed that this contrivance may be attached very quickly and easily to the steam-pipe of almost any engine, and is very simple and inexpensive in its construction and operation, being scarcely more than one tube and one valve, and it works to a charm. It is neater in appearance, occupies less space, is less liable to damage or disturbances causing leakages, and obviates the disadvantage of disproportionate expenses for small engines as compared with any other lubricator with which I am acquainted heretofore devised or used.

I claim as new and of my invention—

1. The combination of a water-chamber, B, above, an oil-reservoir, A, below, and an orifice, *c*, between, and a single tube, *r r r r*, connecting the same with a steam-pipe, substantially as set forth and described.

2. The combination of valve L, nozzle C, orifice *c*, glass tube O, couplings M N and J K, reservoir A, packings *m*, *i*, and *j*, rods H H, disk or collar I, and tube Q, constructed and arranged as set forth.

3. A suspended *cul-de-sac* indicator, consisting of an oil-reservoir and a transparent water-chamber, so constructed and connected with the steam-pipe that the steam enters and the oil is discharged through the same pipe, substantially as set forth.

W. P. PHILLIPS.

Witnesses:
C. E. PRATT,
W. C. WARDWELL.