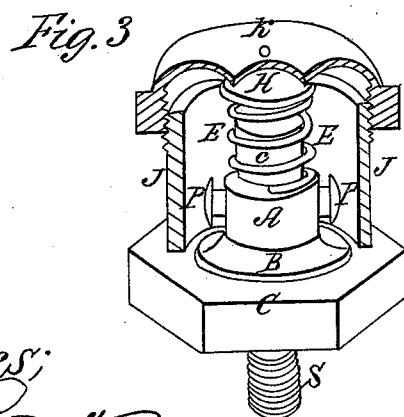
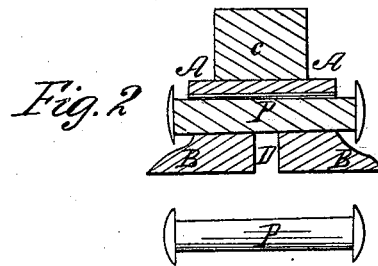
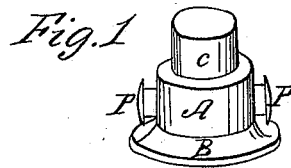


J. H. Palmer,
Lubricator.
N^o 54,070. Patented Apr. 17, 1866.



Witnesses;
Richard D. Miller
James B. Sanders

Inventor;
Joel H. Palmer

UNITED STATES PATENT OFFICE.

JOEL H. PALMER, OF GREENBUSH, NEW YORK, ASSIGNOR TO HIMSELF
AND CLARK H. BROWN, OF SAME PLACE.

IMPROVEMENT IN LUBRICATING-OIL CUPS.

Specification forming part of Letters Patent No. 54,070, dated April 17, 1866.

To all whom it may concern:

Be it known that I, JOEL H. PALMER, of the village of Greenbush, Rensselaer county, State of New York, have invented a new and improved method of constructing an oil-cup for lubricating those parts of steam-engines or other machinery having a reciprocating motion by a regulator to be attached to it; and I declare the following specification, with the drawings forming part of the same, to be a full and complete description of my invention.

Figure 1 represents, in perspective, the apparatus to be placed within an oil-cup for the purpose of regulating the flow of oil to the journal or part to be lubricated, over which it is placed. Fig. 2 represents, on an enlarged scale, a vertical section of the same apparatus through its center. Fig. 3 represents, in perspective, an oil-cup with the regulator attached, a part of the shell of the cup being removed to show the regulator in place.

Similar letters denote the same parts of the apparatus.

An oil-cup as at present constructed consists of a closed metal chamber, having from the center of its bottom a small open tube rising up to near its top, communicating at bottom with the journal or part to be oiled. To regulate the flow of oil a piece of cotton wick or its equivalent is drawn through the tube with its upper end immersed into the oil, which is, by capillary attraction, carried over into and down the tube to the journal below, the quantity of oil so carried being regulated by the quality and size of the wick; but with all care in fitting it, it is impossible so to arrange it as not to produce a considerable waste of oil, and as the mode of supply has no regard to the motion of the engine, the oil continues to flow while the engine is standing still, causing a considerable loss from this source alone. Besides, as the wick soon clogs with the oil, it is necessary frequently to renew it, adding further to the expense for oiling.

My improvement is intended to furnish a permanent regulator for the supply of oil to the moving machine, and one which shall cut off the supply while the machine is not operating. It is a block of metal, A, with a base-

flange, B, by which it is secured within the oil-cup, as shown in Fig. 3. The most convenient shape for the block is cylindrical, as shown. The upper portion, C, is only a projecting cylindrical stem for the reception of the spiral spring E, attached to the valve H, usually employed to close the orifice O at top of the oil-cup, through which it is filled.

A cylindrical hole, *eeee*, Fig. 2, is bored diametrically through the block A, and a cylindrical pin, P, a little longer than the bore *e*, is fitted to it accurately, with just room enough around it to permit its sliding back and forth with ease and certainty. It has heads at each end to keep it within the bore. A small passage, D, is also made downward through the center of the block, connecting the bore *e* with the passage for oil through the stem S of the oil-cup.

In Fig. 3 the regulator is shown attached to an oil-cup of the usual form, of which G is the base; J, its shell; K, its cover; H, the button-valve closing from below the oil-opening O; E, the spiral spring holding the valve closed; S, the hollow screw-stem by which it is attached to the caps or covers of the journal-boxes.

The oil-cup is to be placed upon the journal-caps so that the axis of the pin P shall lie in the line of motion of the journal itself. The consequence will be that as the journal changes its direction at each end of the stroke of the engine its movement will cause the pin to react, sliding backward and forward as far as its heads will permit. With every such movement a small portion of the oil which envelops it is carried into the bore and passed down the passage D down to the journal below. The quantity so carried can be regulated by the size of the pin and length of its stroke. When the journal is at rest the pin, lying quiet, closes the opening D, cutting off all waste of oil.

It will be seen from this description of the operation of the pin P that it need not be a cylinder working within a cylindrical bore or passage, but that the passage may be a rectangular slot and the pin a flat bar, or their equivalents, the principle of construction being that of a bar of metal arranged to slide over the passage-way of the oil from the cup

to the part to be oiled without uncovering the passage, the supply of oil being effected by the movement of the bar sliding within the bore.

The advantages of this improvement are—

First, economy in use of oil, for none passes out of the oil-cup while the machine to which it is attached is at rest.

Second, the quantity of oil supplied can be accurately regulated by the dimensions of the sliding bar or pin. This cannot be done by the use of a wick.

Third, the cup is always ready for use as soon as filled, there being no fitting of wicks required.

Fourth, freedom from gumming up of the oil-passage, which constantly occurs with the

wick-fitted cups, because the movement of the pin keeps the passage clean.

Fifth, the regulator can be applied to any form of oil-cup.

What I claim as my invention, and desire to secure by Letters Patent, is—

The method of regulating the flow of oil by means of a metal bar or its equivalent, arranged to slide back and forth within an oil-cup over the passage-way of the oil, from the cup to the part to be lubricated, without uncovering the passage itself, substantially as described in the above specification.

JOEL H. PALMER.

Witnesses:

RICHD. VARICK DE WITT,

JAMES B. SANDERS.