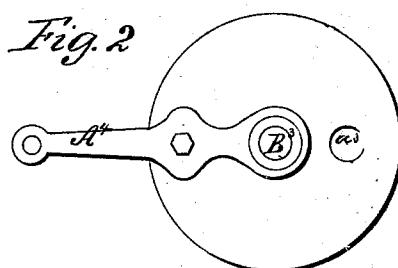
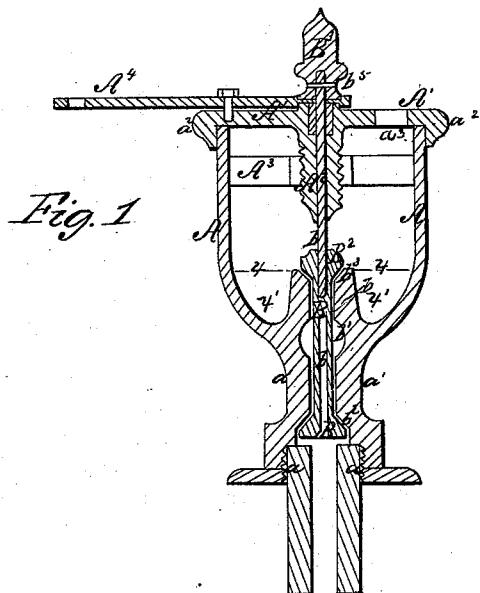


J. C. Carroll,

Lubricator

No 80,911.

Patented Aug. 11, 1868.



Witnesses;

Geo. W. Hersey

Chas. O. Gifford

Inventor;

J. C. Carroll

By his Atty.

M. Randolph & Co

# United States Patent Office.

JOHN C. CARROLL, OF LITCHFIELD, ILLINOIS.

*Letters Patent No. 80,911, dated August 11, 1868.*

## IMPROVEMENT IN OIL-CUPS FOR STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN C. CARROLL, of Litchfield, in the county of Montgomery, and State of Illinois, have made certain new and useful Improvements in Oil-Cups for Engines; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of this invention is to construct an oil-cup through which to lubricate the pistons of steam-engines in such a manner as to avoid any unnecessary waste of oil or tallow used in the lubrication.

The invention relates, firstly, to a double-seated valve, or, rather, pair of valves, in combination with an intervening measuring-chamber, which allows a certain fixed quantity of the lubricating-material to pass down to the cylinder at each opening of the valves.

The second feature of the invention relates to a device for closing and operating the valve from the engine-cab.

To enable those skilled in the art to make and use my improved oil-cup, I will proceed to describe its construction and operation.

Figure 1 of the accompanying drawings is a central sectional elevation of one of the improved oil-cups.

Figure 2 is a plan of the same, showing the device for operating the cup-valves from the engine-cab.

The exterior of the cup A may be of any of the usual forms, and its base is to be provided with screw-threads at a, by means of which to attach it to the cylinder or steam-chest.

The necking a', at the base of the cup, has a tubular cavity, b, which extends up into the cup, and conducts the lubricating-material down into the cylinder or steam-chest.

The central part of the tubular cavity b is enlarged, at b<sup>1</sup>, into a chamber of sufficient capacity to hold enough of the lubricating-material for one lubrication of the piston.

A valve-rod, B, passes from the bottom to the top of the cavity b, and carries on its ends the valves B<sup>1</sup> B<sup>2</sup>, that are arranged to shut tightly on their seats at b<sup>2</sup> b<sup>3</sup>.

A continuation of the valve-rod, b<sup>4</sup>, extends above the valve B<sup>2</sup>, and passes through the top of the oil-cup, above which it is attached to the knob B<sup>3</sup>.

The cover, A<sup>1</sup>, of the cup has a nut, A<sup>2</sup>, which screws down into the rail A<sup>3</sup>, within the cup, and thus secures the cover in place.

The rod b<sup>4</sup> passes loosely through the nut A<sup>2</sup>, which may be screwed up or down without operating the rod, when the rod is disconnected from the knob B<sup>3</sup>.

A little play, say a sixteenth of an inch, should be allowed between the top of the cover A<sup>1</sup>, when it is screwed down, and the bottom of the knob B<sup>3</sup>.

When the knob B<sup>3</sup> is attached to the knob b<sup>4</sup>, by means of the rivet b<sup>5</sup>, the cap A<sup>1</sup> may be unscrewed until it strikes the bottom of the knob B<sup>3</sup>, and raises it, and with it the rods b<sup>4</sup> and B, thereby raising the valve B<sup>1</sup> closely up to its seat, and closing the exit from the lubricating-chamber.

A lever, A<sup>4</sup>, is secured to the top of the cover A<sup>1</sup>, for the purpose of turning it, and to the outer end of this lever, a rod or cord is to be attached, so that it may be operated from the cab of a locomotive.

The cover A<sup>1</sup> should be provided with a flange, a<sup>2</sup>, around the lower edge of its periphery, so as to overlap the edge of the cup and form a tight connection therewith, and also with an aperture, a<sup>3</sup>, for the introduction of the lubricating-material into the cup.

The valve-rod B is made hollow, as shown in fig. 1, the cavity b<sup>6</sup> extending up into the said rod from the bottom end thereof to a point at or above the valve B<sup>2</sup>. This cavity permits the steam from the cylinder to pass up into the stem, and heat the oil or tallow in the surrounding cups, so as to liquefy it in cold weather.

The tube b extends up into the oil-vessel as far as the dotted line x-x, which should be from one-half inch to one inch, (more or less,) as shown in fig. 1, thus leaving the annular sediment-chamber x'-x', surrounding the top end of the tube. Into this chamber the sediment of the grease will subside without passing into the piston. A stop-cock (not shown) might be used to draw off the sediment from this cavity.

For some engines, the valves might be left to act automatically, by the pressure of the steam on the bottom valve holding it closed when the engine is running, and allowing it to open when steam is shut off, the chamber  $b^1$  filling at each operation of the valves, and allowing a certain fixed quantity of lubrication to pass through. In other engines, however, where frequent stops were made, it might be necessary to use the lever  $A^4$  and screw-cap, as hereinbefore described.

Having described my invention, what I claim, is—

1. The oil-cup A, when provided with double valves  $B^1$   $B^2$ , and an intervening measuring-chamber,  $b^1$ , substantially as herein shown and described.
2. The combination and arrangement of the screw-cap  $A^1$ , lever  $A^4$ , and valve-rods B  $b^1$ , substantially as described and set forth.

In testimony of which invention, I hereunto set my hand, in presence of—

JOHN C. CARROLL.

Witnesses:

M. RANDOLPH,  
GEO. P. HERTHEL, Jr.