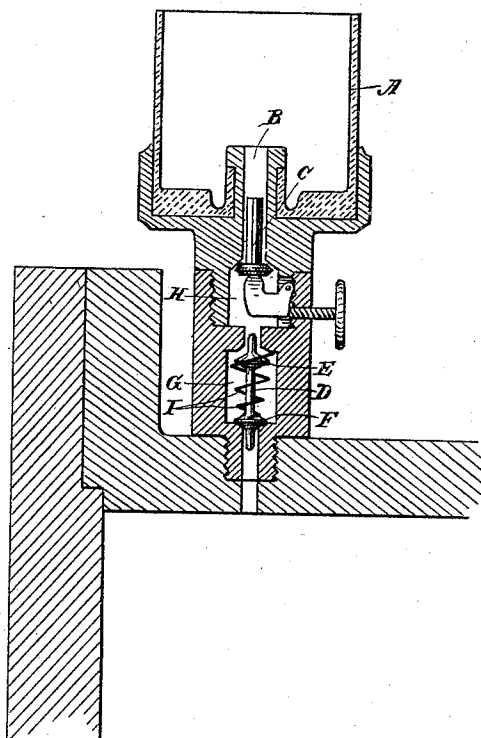


(No Model.)

I. J. BRIGGS.
LUBRICATING CUP.

No. 482,674.

Patented Sept. 13, 1892.



Witnesses,
J. H. House
H. F. Clack

Inventor,
Ira J. Briggs
By Dewey & Co.
attys

UNITED STATES PATENT OFFICE.

IRA J. BRIGGS, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO A. W. SANBORN, OF SAME PLACE.

LUBRICATING-CUP.

SPECIFICATION forming part of Letters Patent No. 482,674, dated September 13, 1892.

Application filed December 26, 1891. Serial No. 416,228. (No model.)

To all whom it may concern:

Be it known that I, IRA J. BRIGGS, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Lubricating-Cups; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an improved lubricating-cup which is especially useful upon engine-cylinders and in other places where there is a pressure of gas or vapor against which the oil or lubricating material is to be introduced.

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawing, in which the figure is a vertical cross-section through my cup.

A is a lubricating-cup of any desired construction. In the present case it represents a glass cup having a central passage B, through which oil passes downwardly. In the lower part of this passage is a valve C, which opens downwardly and allows the oil to flow out and is closed upwardly by any pressure from below. While this valve would allow the oil to flow from the cup when there was no pressure or an intermittent pressure, it would not allow any flow of oil in case the pressure from below was continuous. I have therefore shown a valve-stem D, having a valve E upon its upper end and a valve F upon its lower end. This stem, with its valves, is contained in a chamber G, formed in an extension or prolongation of the cup, whereby the chamber G lies below the chamber H, in which the valve C is contained, and forms a continuation thereof.

In the upper part of the chamber G is a seat, against which the valve E closes upwardly when any pressure is brought to bear upon it from below. In the lower part of this chamber G is a seat, against which the valve F at the lower end of the stem closes when the valve is pressed downward.

In the present case I have shown my valve-cup as applied to an ordinary steam-engine with a horizontal cylinder. One of these cups will be attached to each end of the cylinder. When the steam is admitted to one end of the

cylinder, the pressure acting from below raises the valve F, enters the chamber G, and closes the valve E. While this valve is closed there is no pressure in the chamber H which contains the valve C, and the latter will drop by gravitation, thus allowing a portion of the oil in the cup A to flow into the chamber H above the valve E.

The valve-stem D is surrounded by a spiral spring I. The lower end of this spring presses upon the top of the valve F. The upper end is sufficiently larger than the valve E to allow it to abut against the upper part of the interior of the chamber G. This spring has sufficient tension to force the valve-stem D down, so that the valve F will be seated over the passage entering the cylinder and the valve E will correspondingly be opened whenever the pressure which forces the piston to one end of its stroke is relieved. This occurs as soon as the admission-valve is closed; but without the spring I these valves would not open, because there is always a little back-pressure in the cylinder due to the exhaust-steam, which cannot be forced out without this back-pressure. The spring I is stiff enough to overcome this pressure, and thus when the valves are relieved from the direct boiler-pressure this spring forces the valves E and F down, closing the passage to the cylinder and opening the passage into the chamber H. This allows any oil within the chamber H to flow into the chamber G, and when the valves E F are again raised the valve E closes the passage to the chamber H, and any oil within the chamber G is allowed to pass down through the passage into the cylinder. In this manner my lubricator becomes automatic without any chance for the escape of steam through it.

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

1. A lubricator-cup having the opening and extension below and an upwardly-closing valve which opens by gravitation when relieved of pressure and closes when pressure is applied from below, whereby oil is admitted into the valve-chamber from the cup when the valve is opened, said extension having a second chamber containing a double-ended valve situated below the first one, one of the valves

closing upwardly when exposed to pressure from below and the other closing downwardly when exposed to pressure from above, substantially as herein described.

- 5 2. A lubricating - cup having the passage and chamber below the bottom of the cup, a valve situated within said chamber, closing upwardly when exposed to pressure from below and opening by gravitation to allow oil to
10 flow into its chamber, an extension from said cup having a second chamber situated below and communicating with the first-named chamber, a valve-stem within said chamber, having an upwardly-closing valve at the lower

end, and a spring surrounding the valve-stem, 15 acting to close the lower valve, whereby the upper valve is closed when exposed to pressure from below and the lower valve is closed and the upper valve opened by the action of the spring when relieved from pressure from below, substantially as herein described. 20

In witness whereof I have hereunto set my hand.

IRA J. BRIGGS.

Witnesses:

S. H. NOURSE,
H. F. ASCHECK.