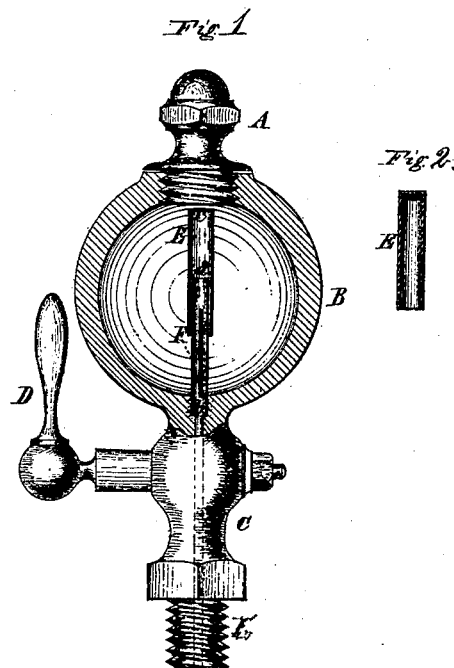


H. G. DeLand,

Lubricator.

No. 112,020.

Patented Feb. 21, 1871



WITNESSES

Charles E. Stevens
James A. DeLand

INVENTOR

Henry G. DeLand
mark

United States Patent Office.

HENRY C. DE LAND, OF SYRACUSE, NEW YORK.

Letters Patent No. 112,020, dated February 21, 1871.

IMPROVEMENT IN LUBRICATORS FOR STEAM-CHESTS.

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, HENRY C. DE LAND, of the city of Syracuse, in the county of Onondaga and State of New York, have invented a new and improved Method of Lubricating the Steam-Chests and Cylinders of Steam-Engines and Locomotives, while in motion, with Suet and Tallow or Lard; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to devices for oiling or lubricating parts of a steam-engine, and consists in so constructing and arranging the parts of an oil-cup that, when it is supplied with lubricating material and so connected to the steam-chest of an engine as to communicate therewith, it will lubricate the parts of the same automatically, as hereinafter explained.

In the drawing—

Figure 1 is a side elevation of the device, with the cup and its interior tubes shown in section.

Figure 2 is a longitudinal section of a part, detached.

In constructing this device a cup, B, is made of any size and form desired, and out of any suitable metal.

It is provided with a neck, C, having an opening through it communicating with the interior, and also with an adjustable head, A, which, by means of a screw-thread, screws into and may be set at any desired height in an opening in the upper side of said cup, which opening also communicates with its interior, all as clearly shown in fig. 1.

The neck C is provided with a stop-cock, D, for opening and closing the passage through it, and also at its lower end with a screw-thread, G, for connecting it with the steam-chest of an engine.

The head or plug A is made of a different metal from the cup B in order to make a perfectly steam-tight connection.

Within the cup B a tube, F, perforated or slotted along its sides, is securely attached by means of a screw-thread, or in any other suitable manner, at b, so as to form a continuation of the passage through the neck C. Its length is such that its upper end may terminate near the center of the chamber of the oil-cup.

Over this tube F is placed another tube, E, so as to slide freely thereon. This tube has its upper end closed or capped, and is of the proper length to allow it, when down, to cover the entire length of the tube F, and, consequently, the slots or perforations therein. Its form is clearly shown in figs. 1 and 2.

The device thus constructed is attached to and so as to communicate with the steam-chest of an engine by means of the screw-thread G on its lower end.

The capped sliding tube E is placed upon the stationary tube F, and the interior of the cup is filled with tallow, suet, lard, or other suitable lubricating material, and the head or plug A is then screwed in and adjusted so as to limit the height to which the sliding tube E may rise, as desired.

The operation of the device is as follows :

When the engine is in motion the cock D is turned so as to admit the steam from the steam-chest into the tube F.

As the piston in the cylinder of the engine moves in one direction the steam will rush from the steam-chest up the tube F and raise the tube E till it strikes against the lower end of the head or plug A, and when the tube E is so raised will pass through the slots or perforations in the tube F and fill the chamber of the cup B, and melt or liquidize the lubricating material therein; and as the piston moves in the opposite direction it will draw the steam and lubricating material now mixed with it out of the chamber of the oil-cup and down into the steam-chest, and, at the same time, the sliding tube E will drop to its original position, so as to prevent too great a supply of the lubricating material from passing from the cup.

The supply may be regulated by adjusting the head or plug A so as to allow a greater or lesser movement of the sliding tube E, as desired.

The lubricating material thus drawn with the steam from the chamber of the oil-cup into the steam-chest finds its way to the different parts of the machinery, into which the steam may force or carry it, and lubricates them.

It will thus be seen that the sliding tube E becomes automatic in its movement, and that the distribution of the lubricating material is also automatic and continuous with the continuous motion of the engine.

While any form of cup may be used, one having a spherical or globular form is preferred, as having the greatest strength.

The lengths of the tubes E and F should be such that, however high the tube E may be allowed to rise when arranged to operate, its lower end may still be upon the end of the tube F.

In this way a cheap, simple, and effective means is provided of automatically liquidizing the lubricating material in an oil-cup, and drawing the same therefrom in any desired quantities to the steam-chest of an engine, for lubricating its machinery.

Having thus described my invention,

What I claim is—

1. The method of automatically lubricating the machinery of a steam-engine by means of an oil cup, B, having within it a stationary slotted or perforated tube, F, with a capped sliding tube, E, thereon, and provided with the head A and cock D, constructed and arranged to operate substantially as described.
2. The capped loosely-sliding tube E, in combina-

tion with the slotted or perforated tube F, when constructed and arranged to be operated substantially as and for the purpose set forth.

HENRY ^{his} X C. DE LAND.
mark.

Witnesses:

CHARLES E. STEVENS,
JAMES A. DE LAND.