

T. J. Nottingham,

Lubricator.

No. 113,200.

Patented Mar. 28, 1871.

Fig. 1

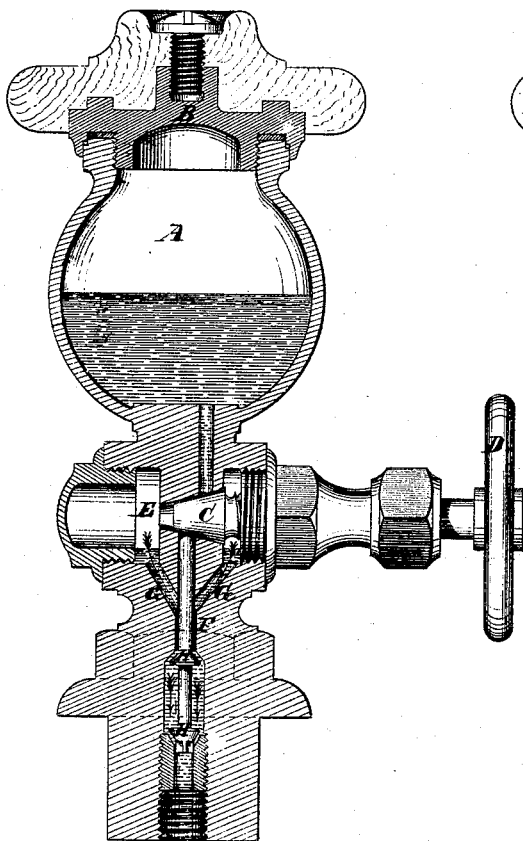
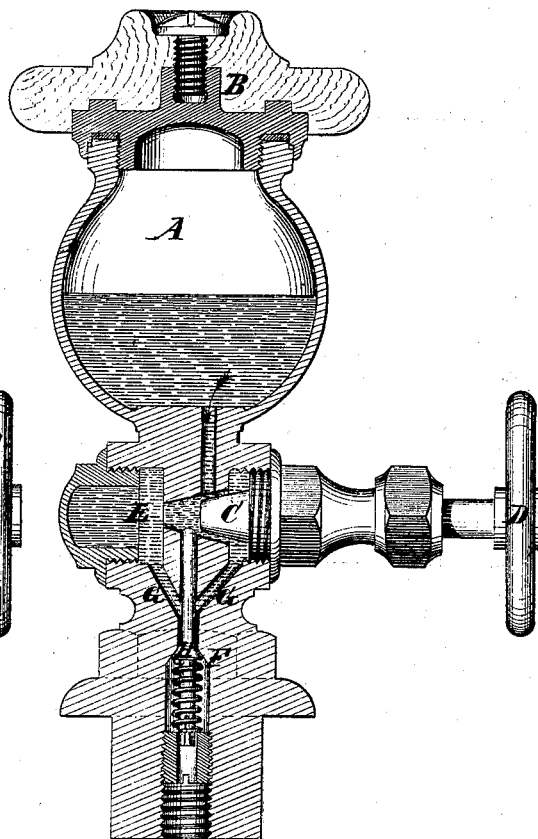


Fig. 2



Attest

H. Ewing Millward,
Clithor F. Layman,

Inventor

Thomas J. Nottingham
By H. Millward
Attorney

United States Patent Office.

THOMAS J. NOTTINGHAM, OF CINCINNATI, OHIO.

Letters Patent No. 113,200, dated March 28, 1871.

IMPROVEMENT IN LUBRICATORS.

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, THOMAS J. NOTTINGHAM, of Cincinnati, Hamilton county, State of Ohio, have invented a certain new and useful Improvement in Lubricators; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification.

Nature and Objects of Invention.

My invention relates to the class of lubricators having provision for lubricating in small determinate quantities, more particularly to the lubricator patented by me December 13, 1870, in which one valve is opened and closed by contact with and movement of the conical face of the other.

My present invention consists in a peculiar arrangement of the valves by which the valve operated by hand is made to govern the admission of tallow to the charging-chamber, and the valve which is operated by contact with the conical hand-valve made to govern the supply of tallow to the parts to be lubricated.

The advantage this arrangement gives is, that the lubricator can be made to operate automatically and deliver tallow in determinate quantities at fixed intervals without attention.

The arrangement furthermore dispenses with the spring as a necessary element in the construction of the lubricator, although a spring may, in some cases, be used in this to advantage.

Description of the Accompanying Drawing.

Figure 1 is an axial section of my improved lubricator with the communication between the charging-chamber and exit-pipe open, the hand-valve being closed.

Figure 2 is an axial section with the valves changed to the other position, the figure also showing a modified form of the valve which governs the exit-pipe.

General Description.

A is the tallow-chamber, covered by steam-tight cap B.

C is a conical-faced valve, operated by the hand-wheel D.

This valve serves to govern the supply of oil from the tallow-chamber A to the charging-chamber E.

This chamber E, which, when the valve C is closed, is divided into two parts, is formed in the manner shown, to hold a determinate quantity of tallow, and it communicates for discharge with the exit-pipe F by means of ports or passages G.

The discharge of tallow through pipe F from chamber E is controlled by the valve H, which seats upward, in the manner shown, by pressure of steam, and

is opened by being forced off its seat by the conical valve C when the latter closes.

By reason of this construction, when the valve C is shut the chamber E discharges itself into the exit-pipe, and when the valve C is open this discharge opening is stopped, and the chamber E is refilled.

This construction is the reverse of that patented by me December 13, 1870, and the spring necessary in that device to hold the check-valve down against the pressure of steam is, in this case, rendered unnecessary, as the pressure of steam closes the valve, although a slight spring may be used, as shown in fig. 2, if the pressure is found insufficient to seat the valve.

In fig. 1 the valve H is made with a double seat, as shown, which, when the lubricator is used upon the cylinder or steam-chest of a steam-engine, enables it to act automatically and feed tallow in small determinate quantities at fixed intervals, until the chamber A is exhausted, in the following manner:

The valve C is withdrawn from its seat sufficiently to allow the steam to force the valve H off its lower seat slightly.

In this condition, as the steam rises and falls in the cylinder for each stroke of the engine, or rises and falls in the steam-chest with the opening or closing of the ports, an oscillating motion is imparted to the valve H, which results in the following operation of the lubricator:

When the steam is at the highest point, it blows the valve off its lower seat, and bubbles all through the lubricator; the chamber at the same time between the two seats of the valve H discharges itself of tallow.

Upon a reduction of pressure below the exit-pipe the pressure in the lubricator predominates, and the valve is forced to its lower seat, the discharge being thereby stopped.

By a nice adjustment of the valve C this operation can be so regulated that the cup A may be made to empty itself in any given time automatically.

Claims.

1. In combination with the chambers A E, the valves C H, when the latter are located and operated between the chamber E and the discharge exit, as and for the purpose specified.

2. In combination with the chambers A E and valve C, the double-seated valve H, fig. 1, operating in the manner and for the purpose specified.

In testimony of which invention I hereunto set my hand.

T. J. NOTTINGHAM.

Witnesses:

J. L. WARTMANN,
E. F. LAYMAN.