# W. BURNETT.

## Lubricators.

No. 157,578. Patented Dec. 8, 1874.

Fig 1.

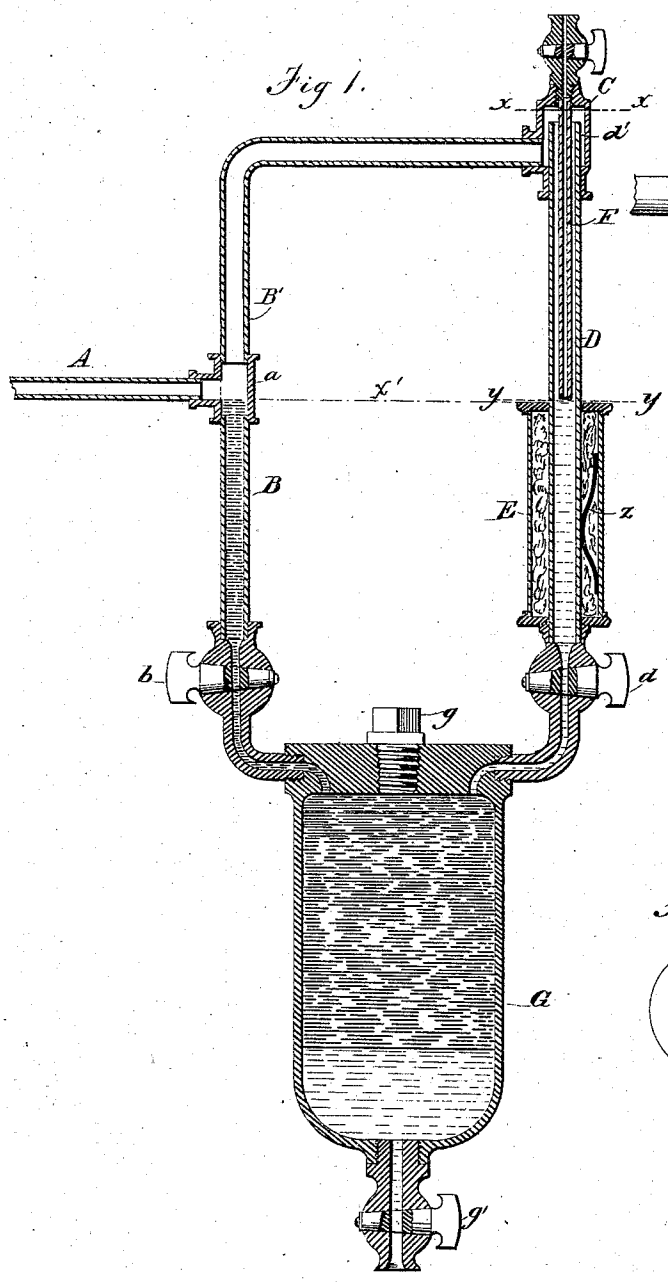



Fig 2.

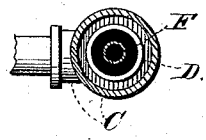
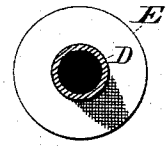



Fig 3




Witnesses
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# UNITED STATES PATENT OFFICE.

WILLIAM BURNETT, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **157,578**, dated December 8, 1874; application filed November 6, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM BURNETT, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Lubricators; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to that class of lubricators in which the pressure of a water-column formed from the condensation of steam is employed to feed the oil into a steam-pipe or steam-chest; and it consists, mainly, first, in the employment of a movable shield for regulating the amount of condensation in the pipe containing the water-column; second, in the employment of a shield or guard for the purpose of preventing the condense-water in the main pipe from running into the pipe holding the water-column; and, third, in the peculiar construction and arrangement of an internal pipe for blowing out air and water.

In the drawings, Figure 1 represents a central sectional elevation; Fig. 2, a transverse section upon the line *x x*, Fig. 1, and Fig. 3 a similar section upon the line *y y*.

To enable others skilled in the art to make and use my invention, I will now proceed to fully describe its construction and manner of operation.

A represents a connecting-pipe, united at one end to the steam-pipe or steam-chest, and at the other, by means of a proper joint or union, *a*, to the oppositely-extended pipes B B′, as shown. The pipe B is connected, at its lower end, to the top of the oil-chamber, and is provided with a shut-off cock, *b*. The pipe B′ is bent at right angles, as shown, and extended to connect with the union C, by which means it is caused to communicate with the upper end of pipe D, the latter extending to, and connecting with, the top of the oil-chamber, as shown, and having a proper shut-off cock, *d*, near its lower end. E represents a shield, consisting essentially of a cylinder of suitable material, having an intermediate space, which is filled with any non-conducting material, as wool, asbestus, or other like substances. This shield is movable upon the pipe; and, if desired, a spring may be employed in connection with it, as indicated at *z* in Fig. 1, for holding it in any desired position. F represents a small pipe or tube provided with a suitable cock at its upper end, which is adapted, by means of its threaded portion, to be screwed into the open upper end of the union C. G represents the oil-chamber, having the removable filling-plug *g* and water-cock *g′*, as shown. *x′* represents a line extended horizontally from the discharging-point of the oil into the main pipe communicating with the steam pipe or chest. The lower end of the internal blow-off pipe coincides with this line, so that by opening this cock at any time the water-column may be made to equal in length the oil-column in the opposite pipe. The upper end of the shield also coincides with this line, so that when it is in its lowest position it covers only the water-column, and does not affect in the least the upper end of the pipe, in which the condensation of steam takes place. It will be observed, also, that the upper end of pipe D is extended upward beyond the open end of pipe B′ in the union C, by which means a shield or guard, *d*, is formed, adapted to prevent the entrance of condense-water from the pipe B′ into the pipe D.

The operation is as follows: The pressure of steam from the main pipe being equal in all parts of the lubricator, it follows that the oil and water columns, when of equal weight, will balance, and no action will take place; but, as the water accumulates in the pipe from the condensation of the steam, the oil-column will be overbalanced, and the same will feed out more or less rapidly into the pipe communicating with the steam pipe or chest, the rapidity of feed depending on the amount of condensation taking place in pipe D.

It will be understood, of course, that the water entering the oil-chamber G sinks to the bottom, and, consequently, displaces an equal amount of oil, and expels the same through pipe B. By using the regulating-shield the amount of condensation, and, consequently, the flow of oil, can be regulated with great nicety. If the oil is fed too rapidly, the shield is raised, by which means the radiation of heat

from the upper part of pipe D is prevented, and the condensation of steam consequently checked.

The advantages of the described construction are, first, that the water in the pipe D may be blown off until it reaches a proper level to just balance the oil-column; second, that only the condensation occurring in pipe D affects the water-column; and, third, that, by the adjustment of the shield, the amount of condensation, and consequent flow of oil, may be regulated accurately.

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

1. In a lubricator, a movable shield, adapted, substantially as described, to regulate the amount of condensation in the pipe holding the water-column, as described.

2. The pipe D, provided with a guard, *d*, for preventing the entrance of the condense-water from the main pipe conveying steam thereto, as described.

3. In combination with the pipe D, the internal blow-off pipe, substantially as and for the purpose described.

This specification signed and witnessed this 29th day of October, 1874.

WM. BURNETT.

Witnesses:

H. W. BEADLE,

H. E. MATTHEWS.