

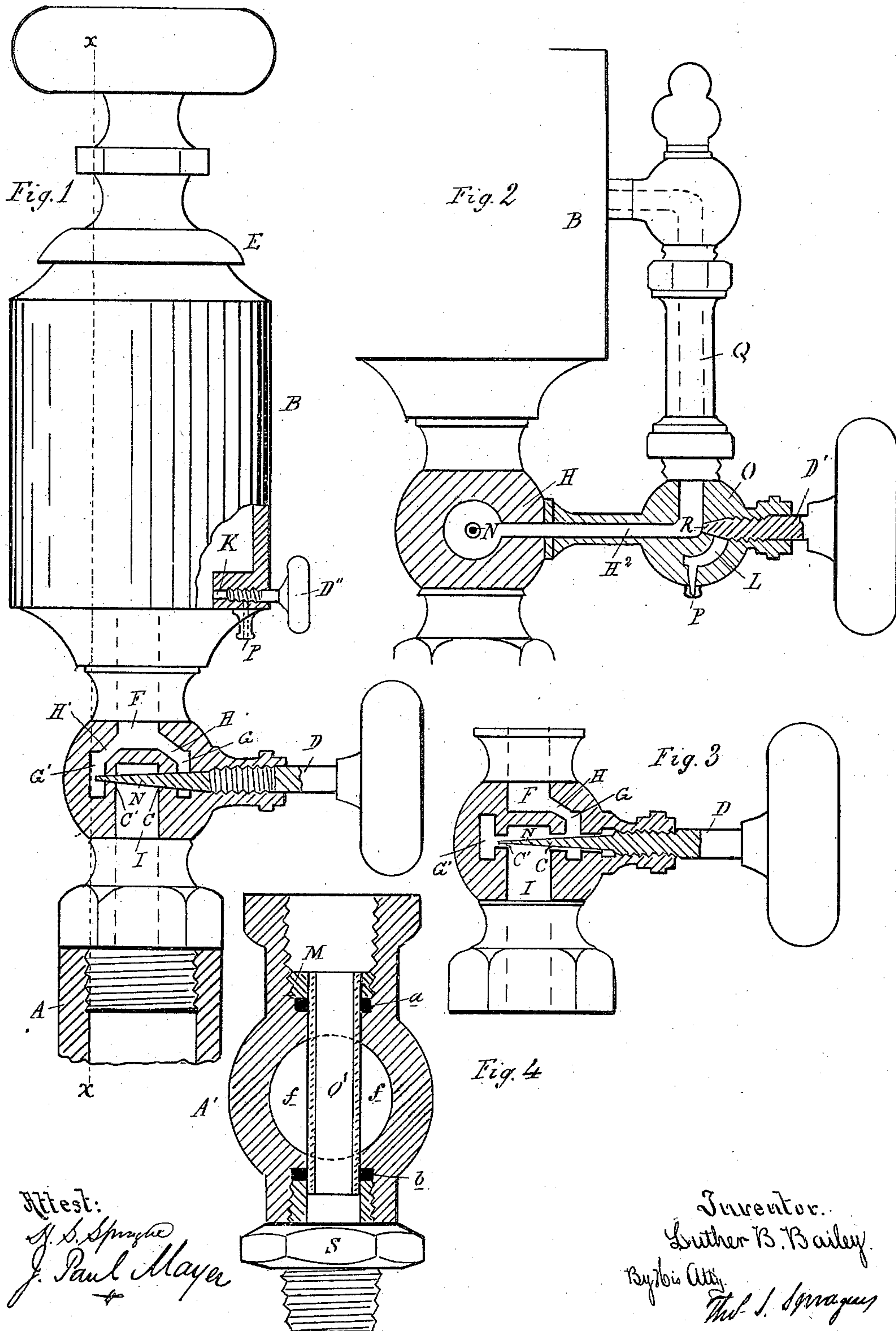
(No Model.)

L. B. BAILEY.

LUBRICATOR.

No. 298,813.

Patented May 20, 1884.



Attest:
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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 298,813, dated May 20, 1884.

Application filed February 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUTHER B. BAILEY, of London, in the county of Middlesex and Province of Ontario, Canada, have invented new and useful Improvements in Lubricators; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in lubricators, adapted to supply tallow, grease, oil, or their equivalents in a steady, continuous, and even flow, and in any quantity required to the part requiring such lubrication.

The invention consists in a new and novel arrangement of chambers and passages leading from the lubricant-reservoir into the steam-pipe; also, in combination a valve-spindle provided with an elongated tapered valve end, the smaller portion of which governs the lubricant-outlet, and the larger portion of which governs the steam-inlet, so that when the valve-spindle is operated to enlarge or reduce the steam-inlet and lubricant-outlet it retains the same relative proportion of the areas of the two openings; also, in the peculiar construction and combination of parts, as more fully hereinafter described.

Figure 1 is a side elevation, partially in section, showing the position of the valve-spindle when the steam-inlet and lubricant-outlet are closed. Fig. 2 is a sectional elevation on the line $x x$ of Fig. 1 with my improved gage-glass attachment in position. Fig. 3 is a sectional view of the chambers, valve, spindle, and passages when a gage-glass is employed, showing the position of the valve-spindle when the steam-inlet and lubricant-outlets are partially open. Fig. 4 is a sectional attachment to the lubricator, showing the feed of the lubricant after it leaves the lubricator.

In the accompanying drawings, which form a part of this specification, A represents a steam-pipe, to which this lubricator is secured in any of the known ways.

B is a reservoir to contain the lubricant, and near the lower end of this chamber or reservoir are chambers G G', passages F, I, and H H', and valve-spindle D, provided with an elongated tapered end, N. The steam-in-

let C is constructed larger than the lubricant-outlet C', and in sufficiently larger proportion that the steam will always enter the larger opening or steam-inlet, C, and pass out with the lubricant through the smaller opening or lubricant-outlet, C'. The smaller portion of the tapered end N of the valve-spindle D governs the lubricant-outlet C', and the larger portion of the tapered end N of this valve-spindle D governs the steam-inlet C, so that when only one valve-spindle, D, is used and operated to enlarge or reduce these openings C C', the same relative proportion of the areas of the two openings must always be retained, and by retaining the same relative proportion of the areas of the steam-inlet C and lubricant-outlet C' the lubricant is fed in a steady, continuous, and even flow to the steam-pipe, and by enlarging or reducing these openings C C' by the valve-spindle D the lubricant is fed to the steam-pipe in any quantity required.

E is the cap of the lubricator, through which the lubricant is introduced into the reservoir B.

F is a passage leading from the reservoir B, and connecting with the chambers G G' by means of the passages H H'.

I is a passage connecting with the chamber G by the steam-inlet C, and with chamber G' by the lubricant-outlet C'. In filling the reservoir B with the lubricant used the chambers G G' and passages F and H H' are also filled.

In practice the steam from the steam-pipe A passes through the passage I, and on operating the spindle D to open the steam-inlet C and lubricant-outlet C' the steam enters the opening which has the largest area or steam-inlet C, and passes out into the chamber G and through passage H into the passage F, and intermingles with the lubricant and disintegrates the same, and then this disintegrated lubricant is forced by the steam through the passage H' and chamber G' out at the lubricant-outlet C' into the passage I, and passes thence to the steam-pipe A, and is carried therein by the contained steam to the throttle-valve or other part of the engine requiring lubrication; and the areas of the openings of the steam-inlet C and lubricant-outlet C' being regulated by the elongated tapered end of the valve-spindle D as the spindle is operated to allow the lubricant to feed, this lubri-

cant passes to the parts of the engine in a steady, continuous, and even flow, and in any required quantity.

The lower metallic portion of the lubricant-reservoir B is provided with a valve-spindle, D', passage K, and outlet P, said outlet P leading from the passage K to the outside of the reservoir, for the purpose of ascertaining when the lubricant-reservoir is empty, and also to allow the steam to escape previous to removing the cap E preparatory to refilling the reservoir.

When it is desired to use a gage-glass in connection with the lubricator, to note the feed of the lubricant, the passage H' is closed and a gage-glass provided with passage H'', (see Figs. 2 and 3,) which leads from the side of the reservoir B to the chamber G'.

The operation of the lubricator when the gage-glass is used is as follows: The steam from the steam-pipe A passes through the passage I and steam-inlet C into the chamber G, through the passages H and F, into the reservoir. As this steam intermingles with the lubricant, it disintegrates said lubricant, and this disintegrated lubricant is forced out through an outlet in the side of the reservoir and through the passage H'' into the chamber G' and through the lubricant-outlet C', and passes thence through the passage I into the steam-pipe A, and is carried therein by the contained steam to parts of the engine required to be lubricated. The lower metallic portion, O, of this gage-glass is provided with a valve-spindle, D', and passage L, and an outlet, R, connecting the passage H'' with the passage L. When the valve-spindles D D' are adjusted with the steam-inlet C and outlet R open, the sediment, if any, collected in the passages or chambers is blown out through the outlet R and out of the lubricator through the passage L into the lower metallic portion of the glass gage. When the outlet R is open only and the steam-inlet C is closed, the steam is allowed to escape from the reservoir B before refilling it with the lubricant, and the water of condensation passes off with the steam.

In Fig. 4 there is shown an attachment for showing the feed of the lubricant after the same leaves the lubricator. In this figure A' is the body of the attachment, with a hole, f, bored through the side for the purpose of allowing the gage-glass O' (which is inserted vertically therein) to be seen. This gage-glass is packed steam-tight by the rubber gaskets a and b, one being at either end. The one at the upper end is compressed by a thimble, M, and the lower one by the coupling-nut S. The lubricator is screwed on at its discharge end to the upper end of the attachment, the lower end of which is attached to the steam-pipe, or wherever desired.

The steam-inlet C and oil-outlet C' need not necessarily be in the above positions, but may be separated, and may be operated by separate valves so long as the steam-inlet C is or can be made larger by the operation of the valve than the oil-outlet C', and so long as these openings are in any way connected with the lubricant-reservoir B, and between it and the parts to be lubricated, with which they communicate. This modification I consider to be within the scope of my invention.

What I claim as my invention is—

1. In a lubricator, a valve-spindle with an elongated tapered valve end, the upper or larger portion of which regulates the steam-inlet, and the smaller portion the lubricant-outlet, in combination with valve-seats of different areas, substantially as and for the purposes described.

2. In a lubricator, the combination of the oil-reservoir thereof, having a passage or passages leading therefrom communicating with the parts to be lubricated, two openings or valve-seats of different areas, the larger being for the admission of steam, and the smaller being the oil-outlet, and a single tapered valve controlling such openings, substantially as and for the purposes specified.

3. In a lubricator, a valve-spindle, D, provided with an elongated tapered valve end, N, in combination with the steam-inlet C and lubricant-outlet C', such inlet and outlet being of different areas, and arranged with relation to the spindle, substantially as and for the purposes described.

4. In a lubricator, the combination, with the reservoir thereof, of the chambers G G', passages F I and H H', steam-inlet C, lubricant-outlet C', and valve-spindle D, provided with an elongated tapered valve end, N, the parts being arranged, constructed, and operating substantially as and for the purposes set forth.

5. In a lubricator, the combination, with the reservoir thereof, of the chambers G G', passages F I and H H', steam-inlet C, lubricant-outlet C', valve-spindle D, provided with an elongated tapered valve end, N, passage K, and outlet P, the parts being constructed, combined, and operating substantially as and for the purposes set forth.

6. In combination with a lubricator constructed substantially as described, a glass-gage, O, provided with passages H'' communicating with the parts to be lubricated, outlet R, valve-spindle D', and passage L, substantially as shown, and for the purposes specified.

LUTHER B. BAILEY.

Witnesses:

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WILLARD SAGE.