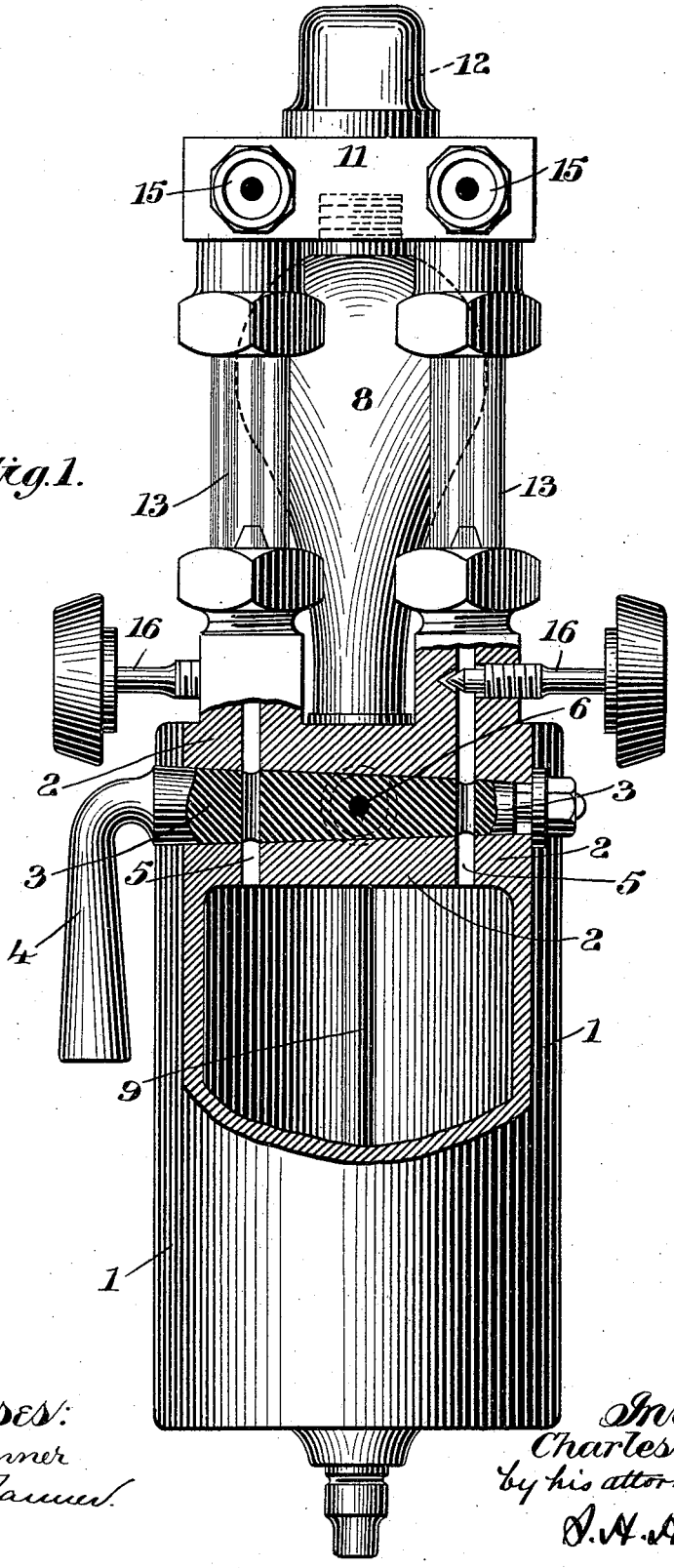
(No Model.) 4 Sheets—Sheet 1.

C. M. EVEREST.

LUBRICATOR.

No. 456,233. Patented July 21, 1891.

Fig. 1.



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Inventor:
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by his attorney
D. A. Hubbard

(No Model.) 4 Sheets—Sheet 2.

C. M. EVEREST.

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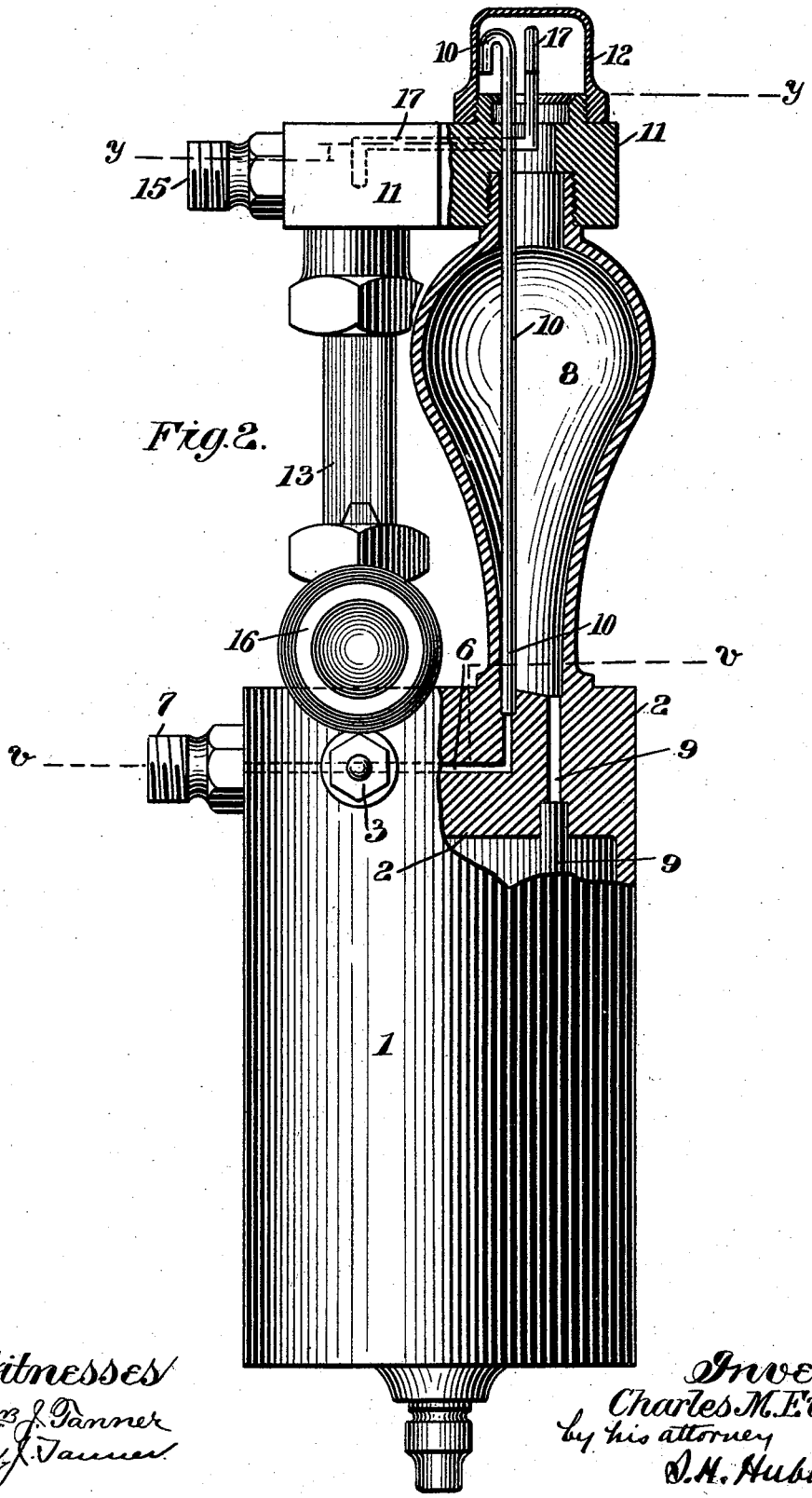

Fig. 2.

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(No Model.) 4 Sheets—Sheet 3.

C. M. EVEREST.

LUBRICATOR.

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Fig. 3.

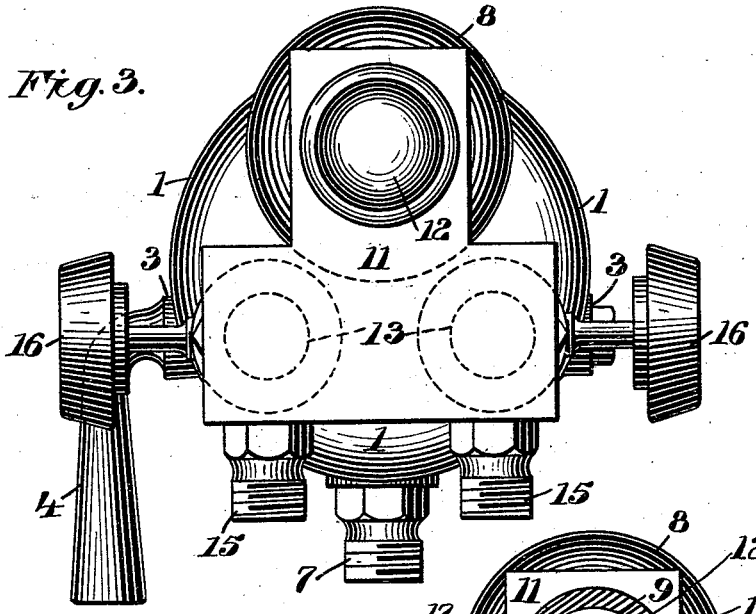


Fig. 4.

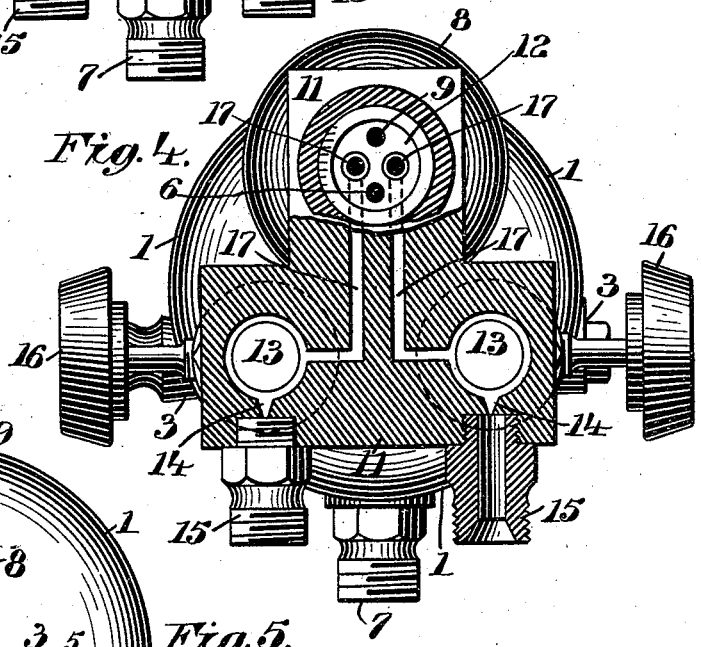
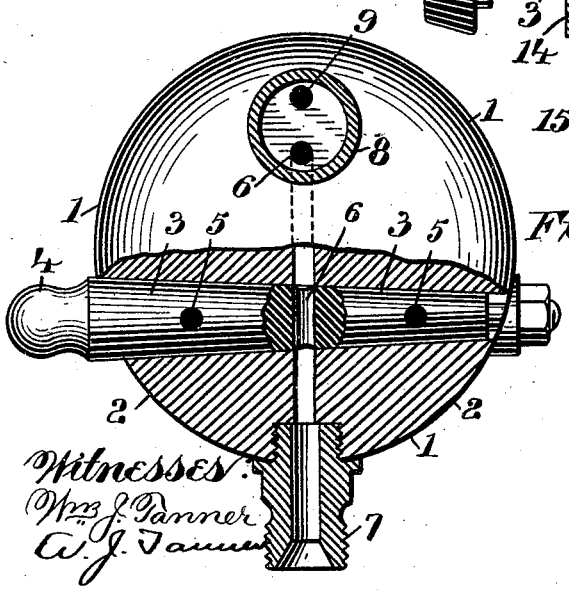


Fig. 5.



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(No Model.) 4 Sheets—Sheet 4.

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LUBRICATOR.

No. 456,233. Patented July 21, 1891.

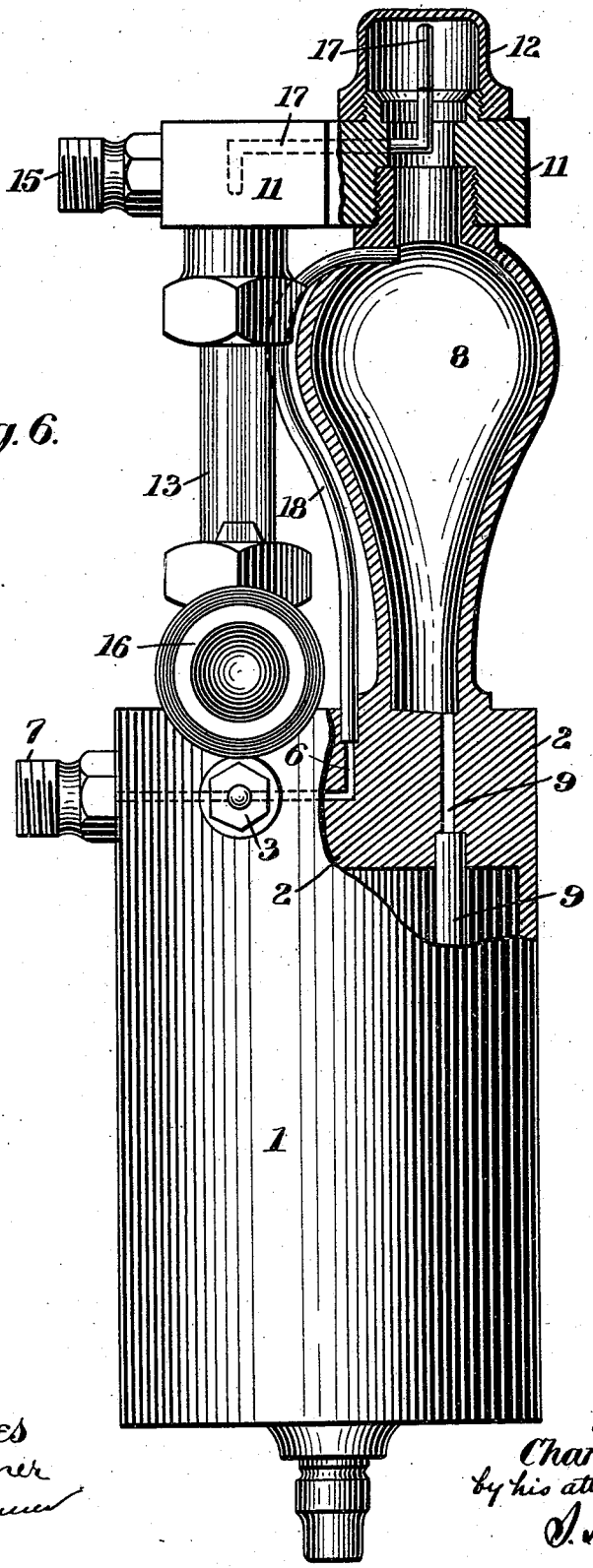

Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES M. EVEREST, OF ROCHESTER, NEW YORK.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 456,233, dated July 21, 1891.

Application filed August 22, 1890. Serial No. 362,791. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. EVEREST, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lubricators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain novel and useful improvements in lubricators for steam-engine cylinders, but more particularly is it designed for use upon locomotives.

The objects of my invention are, first, to provide a lubricator in which by means of a single cock or valve both the inflow of steam and the outflow of oil may be controlled; second, to provide means for warming the upper portion of the oil-reservoir, so that the oil at the top of said reservoir, and therefore nearest to the educt-passages, may be retained in fluid condition even in the coldest weather; third, to provide independent means for the regulation of each of the educt-passages, and finally, and in addition to the foregoing, my invention consists in the details of construction and combination of co-operating elements hereinafter to be fully set forth and explained and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front elevation, partly in vertical section, showing a lubricator made in accordance with my invention. Fig. 2 is a sectional elevation from one side of the lubricator, the section being central and vertical. Fig. 3 is a plan view. Fig. 4 is a horizontal transverse section at the line *y y* of Fig. 2. Fig. 5 is a transverse section at the line *v v* of Fig. 2. Fig. 6 is a view similar to Fig. 2, but showing a modified arrangement of the induct-pipe.

Like numerals denote the same parts in each of the figures.

By the numeral 1 is designated a reservoir adapted to contain the supply of oil and to receive the condense-water after the manner common to lubricators operating by condensation displacement. The top wall of this reservoir, as indicated by 2, is of considerable thickness, and transversely of this wall is bored a seat in which is arranged and adapted to turn a cock 3, having an operating-handle 4. The upper wall of the reservoir just referred to is provided with two vertical educt-passages or ways 5, both intersecting the seat and registering with holes through the cock, and 6 is a transversely-extended passage intersecting in like manner the cock and the seat. The educt-passages 5 are designed, as will be hereinafter explained, to admit of the upward flow of the oil, while the passage 6, by means of a suitable connection 7, is connected with the boiler or other source of steam-supply, and thereby serves to admit steam to the lubricator. It will therefore be understood that by means of the single cock the ingress of steam to the lubricator may be modified or entirely shut off, and at the same time the exit of oil from the reservoir proportionally controlled and varied.

The transverse passage 6 extends horizontally inward to a point beneath a condenser 8, which is mounted upon the reservoir and has a suitable conduit 9, opening from its bottom end and extending downward to a point near the bottom of the reservoir. At its inner end said passage 6 has connected therewith a vertical steam-pipe 10, which extends upward through the condenser. The upper end of the condenser connects with a T-shaped casting 11, which immediately over the condenser carries a steam-dome 12, connected with said condenser and in which the upper end of the steam-pipe 10 terminates.

Referring now to Fig. 1, the end of each of the vertical oil-educts 5 connects with a sight-feed glass 13, which latter in turn through a choked orifice 14 (see Fig. 4) permits the oil to pass to the discharge-pipes 15, which connect with the cylinders. Between the reservoir and the sight-feed glasses are interposed regulating-valves 16, by means of which the feed of oil may be varied as desired. In the casting heretofore referred to are equalizing-tubes 17, which extend from the steam-dome out-

ward through said casting and communicate with the oil-exit passages, so as to create a uniform pressure at each end of the lubricator.

In the operation of my invention steam is taken in through the connection 7, and the oil, as heretofore explained, passes from the reservoir outward through the passages 15. In its entrance through the thickened upper wall of the reservoir the steam so heats said wall as to impart a considerable degree of warmth to the oil within the reservoir, and particularly to such portion of said oil as is nearest to the educt-passages that connect with the sight-feed tubes. This, while warming the oil sufficiently to cause it to flow freely, does not to the same degree heat the stratum of water at the bottom of the reservoir, and thereby the two fluids do not tend to saponify and mix. From the passage in the top wall of the reservoir the steam passes upward through the pipe 10 and is discharged into the steam-dome, whence it freely enters the condenser, and its pressure likewise is exerted through the equalizing-tubes at the discharge-passages. The condense-water from the condenser passes freely downward through the tube 9 to the bottom of the reservoir, thereby forcing an equal bulk of oil upward through the sight-feed tubes.

In Fig. 6 I have shown a slightly modified construction, in which the pipe 10 is displaced by means of a pipe 18, which does not pass through the condenser, but extends upwardly from the reservoir outside of said condenser and discharges into the latter at any convenient point, the precise construction in this regard being immaterial. The advantage gained by this construction is that the condenser is kept at a somewhat lower temperature than in the construction shown at Fig. 2.

From an examination of the drawings, and particularly Figs. 1 and 3, it will be observed that while I have embodied in this lubricator a condenser and two separate and disconnected sight-feed glasses, each providing for an independent feed of oil to the cylinder, I have arranged said condenser and sight-feed glasses in the form of a triangle on the top of the reservoir. This conduces greatly to strength and economy of space, and, furthermore, the two sight-feed glasses are side by side, so that their rate of speed is readily apparent for purposes of comparison, as is highly desirable, for instance, in adjusting the regulating-valves 16.

I claim—

1. In a lubricator, the oil-holding reservoir having a thickened top wall provided with oil-educt passages and a steam-induct passage, in combination with a plural cock seated in said thickened wall and adapted to control the inflowing steam and the outflowing oil, a condenser mounted upon the reservoir and connected with the steam-induct passage, a pair of sight-feed glasses mounted upon the reservoir and each connected with one of the oil-passages, and supplemental regulating-cocks, as 16, interposed between the reservoir and the sight-feed glasses, substantially as described.

2. In a lubricator, the combination, with the reservoir and a condenser and a pair of sight-feed glasses mounted upon said reservoir, said reservoir having a thickened top wall, of the live-steam passage entering the top wall of said reservoir and extending therethrough between the oil-educt passages, the pipe or tube whereby said steam is conveyed upward and discharged into the condenser, and a transversely-arranged shut-off cock seated in the thickened top wall of the reservoir and adapted to control both the steam and oil, substantially as described.

3. In a lubricator, the combination, with the reservoir and a condenser and a pair of sight-feed glasses mounted upon said reservoir, said reservoir having a thickened top wall, of the live-steam passage entering the top wall of said reservoir and extending therethrough between the oil-educt passages, the pipe or tube whereby said steam is conveyed upward and discharged into the condenser, a transversely-arranged shut-off cock seated in the thickened top wall of the reservoir and adapted to cut off the flow of the oil and the steam, and regulating-cocks 16, entering the oil-passages above the reservoir, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. EVEREST.

Witnesses:
S. H. HUBBARD,
WM. J. TANNER.