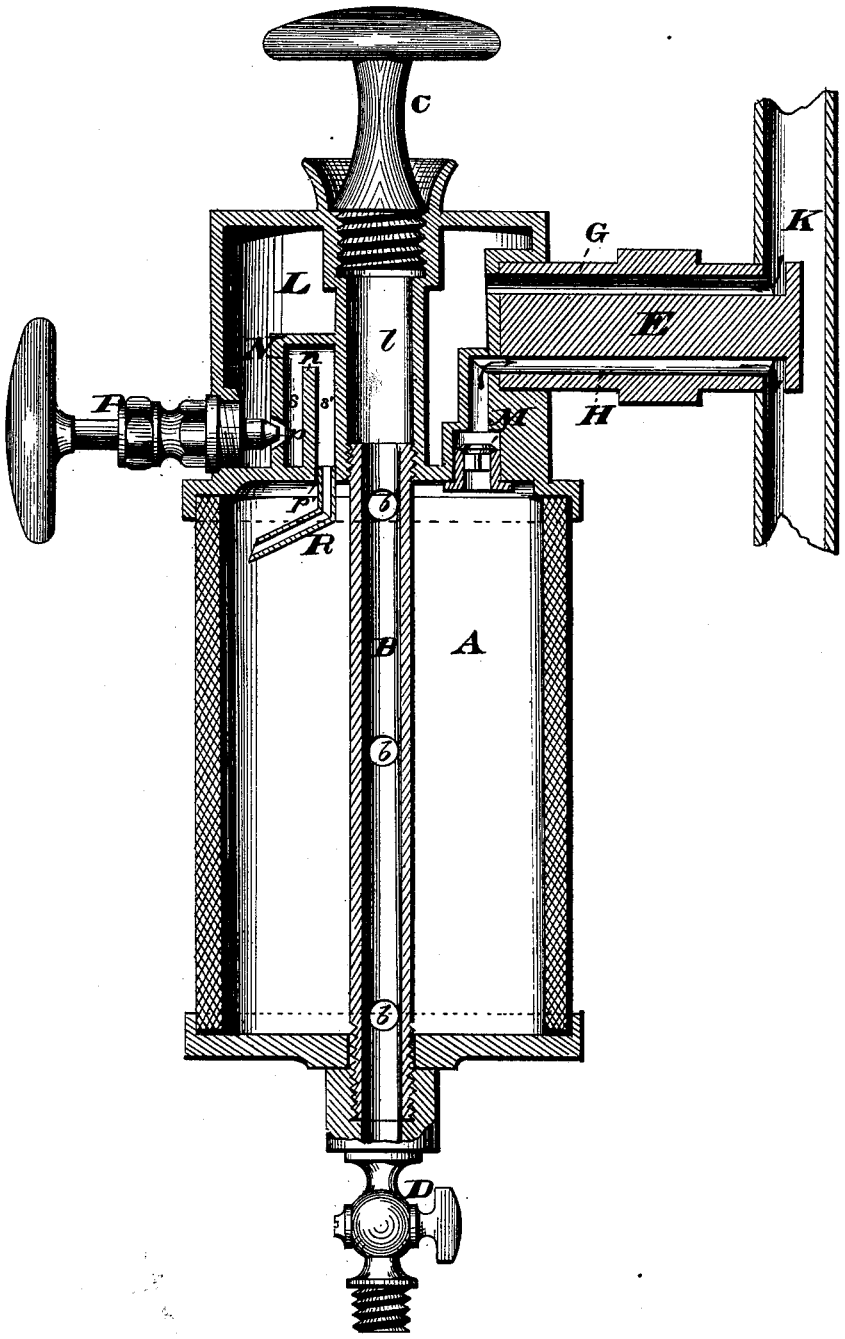
C. H. PARSHALL.

LUBRICATOR.

No. 191,707. Patented June 5, 1877.



WITNESSES

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CHARLES H. PARSHALL, OF DETROIT, MICHIGAN.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **191,707**, dated June 5, 1877; application filed April 23, 1877.

To all whom it may concern:

Be it known that I, CHAS. H. PARSHALL, of Detroit, in the county of Wayne and State of Michigan, 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in lubricators; and consists in providing a water-seal within the body of a condensing-chamber, which will prevent the inflow of oil into the latter, while free communication for the water to pass therefrom into the oil-cup is allowed. This water seal or trap is constructed as a small chamber on the inside of the condenser, opposite to the stem by which the lubricator is supported, and has a vertical central partition within it, while it has openings, respectively, into the condensing and the oil chambers on either side of the partition.

By such a construction space-room is economized, which, in small lubricators, is a very essential feature, allowing the oil-cup to carry a much larger quantity of the lubricant, and a double result is secured, in that, at the same time, the oil is prevented from becoming heated. In many instances it is well-known that it is most desirable to preserve the lubricant at a degree of temperature less than that which would be imparted to it were the water seal or trap placed in its immediate body, and hence my object to so construct the said seal or trap that it may prevent such an undue temperature in the oil, and also be especially adapted to lubricators of small dimension.

The drawing represents, in vertical central section, a lubricator made according to my invention, in which—

A is a heavy glass cylinder, seated in annular flanged shoulders formed in a metallic supporting top and bottom, and held in place by the central hollow metal tube B. This latter is made with openings *b* at suitable intervals in its length, which permit the oil, as it is introduced into the tube through the feed-opening covered by cap-stopper C, to flow out into the oil-chamber, while they also serve as exit-openings, for the water to be emptied from the lubricator out through the waste-cock D.

The supporting-stem E is constructed with independent steam and oil ducts G and H, communicating, respectively, with the condensing and oil-feeding chambers. This stem is connected directly with the main steam-pipe K of a steam-engine, while its opposite extremity is secured to the side of the condenser L. A check-valve, M, controls the opening of the oil-duct as it communicates with the oil-chamber, so as to automatically regulate the volume of oil passing out.

The condenser is made with the cylindrical tube *l*, which feeds the oil as it is introduced through the cap-opening down into the binding-tube B, and, while the supporting-stem E is on one side of this central tube *l*, a small or auxiliary chamber, N, is on the opposite side. This chamber has the vertical partition *n* extending from its bottom up nearly to its top, but allowing sufficient opening for the water to pass from one side of the partition over the latter and down the other side. Hand-valve P controls the opening *p*, which admits water into the water-seal chamber, while the opening *p'* into the oil-chamber is provided with the angular discharge-pipe R. This latter consists of a short vertical section and a longer obliquely-inclined section, and as the steam is condensed, and afterward passed through the seal or trap chamber down into pipe R, it is discharged by the latter, so as to percolate in drops down along the side of the glass cylinder as it falls through the oil and into the lower portion of the cup. The side of the glass cylinder thus serves as an indicating-gage of the feeding of the oil, whether faster or slower, and the oil is prevented from passing in the chamber N down into the passage *s* farther than the top of the partition *n*. Thus the superior specific gravity of water causes the latter to fall down through the body of the oil, thus displacing the same, and forcing it up through the angular pipe R into the passage *s'* of the water-seal.

The light specific gravity of oil renders it impossible for the latter to pass down through the body of water always filling the passage

s of the seal-chamber, and hence is prevented from ever entering the condenser and mixing its contents with oil. The oil in the cup is thus kept from becoming heated by the greater temperature of the warm water as it is condensed from the steam, and at the same time the construction is peculiarly fitting to small lubricators.

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

1. The water seal or trap formed within the immediate body of the condensing-chamber, and directly connecting the same with the oil-feeding chamber, substantially as described.

2. The combination, with the water-seal located directly within the condensing-chamber, of the angular discharge-pipe, extending from the same into the oil-cup, substantially as described.

3. The combination, with the auxiliary chamber N, of the central vertical partition *n*, forming the passages *s* and *s'*, the two respectively connecting by immediate openings with the steam-condensing and oil-feeding chambers, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of April, 1877.

CHARLES H. PARSHALL.

Witnesses:
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