

CHARLES LYNCH.

Improvement in Lubricator for Steam Engines.

No. 121,055.

Patented Nov. 21, 1871.

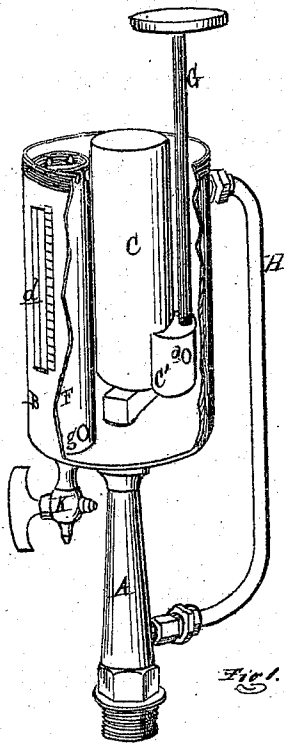


Fig. 1.

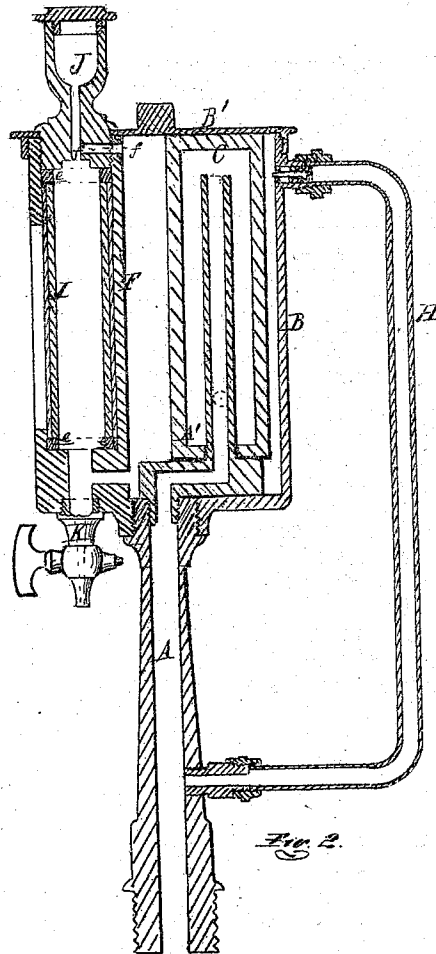


Fig. 2.

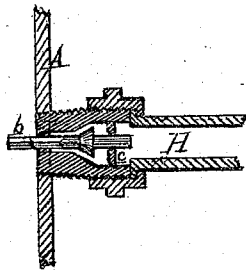


Fig. 3.

ATTEST:

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CHARLES LYNCH, OF DETROIT, ASSIGNOR TO HIMSELF, DANIEL A. MATHEWS, OF YPSILANTI, AND HENRY MCGRAW, OF DETROIT, MICHIGAN.

IMPROVEMENT IN LUBRICATORS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 121,055, dated November 21, 1871.

To all whom it may concern:

Be it known that I, CHARLES LYNCH, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in a Lubricator for Steam-Engines; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of the lubricator, with a portion of the reservoir broken away and its top removed to show the internal arrangement of the parts. Fig. 2 is a vertical section on the line *xx* in Fig. 1; and Fig. 3 is an enlarged sectional detail of the check-valve at the upper end of the oil-pipe.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of this invention relates to a device more especially designed to deliver a regulated and continuous supply of oil to the valves and pistons of steam-engines, the feeding of the oil being effected by its displacement by water under pressure, the water resulting from the condensation of steam in a condensing-chamber contained within the oil-cup; and it consists in the novel and peculiar construction and arrangement of its various parts, operating as more fully hereinafter described.

In the drawing, A represents a hollow standard which is screwed into the cover of the steam-chest of an engine. B is an oil-cup or reservoir mounted on said standard. C is a cylindrical condensing-chamber, closed at the top, and through whose bottom head projects a continuation, A', of the hollow standard, terminating in an open tube near the top of the chamber C; in order to carry the condenser away from the center of the reservoir and thus make room for the cylindrical gauge-guard F, the pipe A' is made angular at the bottom, as shown. The condensing-chamber has a lateral enlargement, C', at the bottom, provided with an outlet, *a*, which may be opened or closed by a valve, G, threaded in an opening tapped from the top of the enlargement to intersect the outlet *a*. The stem of this valve projects up through a stuffing-box (not shown) in the cover B' of the reservoir, and is rotated by a hand-wheel at the upper end. H is the oil-feeding pipe issuing from near the top

of the reservoir and entering the hollow standard below it, although it may discharge into the steam-pipe if desired. At the upper end of the pipe H a check-valve, *b*, is placed to open outwardly, as shown in Fig. 3. The inner end of the stem of the check-valve is angular in section where it plays in the end of the pipe, while the outer stem plays in a bridge-piece, *c*, cut away at the sides, as shown in the detail, Fig. 3. F is a cylindrical gauge-guard, cast at and with one side of the reservoir, through which is cut a vertical slot, *d*, graduated at one side. Within the guard is inserted a glass-tube, I, resting on a packing-ring, *e*, on a shoulder in the lower part of the guard; a similar packing-ring is placed on the top of the tube I. The filling-cup J has its stem threaded into the upper part of the guard and compresses the packing at each end of the glass-tube. A lateral passage, *f*, extends from the oil-passage of the filling-cup through coincident openings in the guard to the interior of the reservoir. Another opening, *g*, communicates with the reservoir at the bottom of the guard. K is a drain-cock communicating with the lower part of the guard and its tube. The valve G closing the outlet *a*, the pressure of the steam will close the check-valve and prevent the contents of the reservoir from being forced down the standard; the reservoir should now be emptied through the drain-cock, which should then be closed; the reservoir may now be filled through the filling-cup J, with oil or melted tallow. The steam entering the condenser through the hollow standard and its continuation condenses and fills the chamber with water; now, if the outlet *a* be opened by the valve G, a stream of water will flow out with a force due to the head in the condenser, and entering the reservoir displace an equal volume of oil which opens the check-valve and flows down the feed-pipe into the hollow standard and thence into the steam-chest. The gauge-tube shows the relative quantities of oil and water contained in the reservoir, for which purpose it communicates with the reservoir at top and bottom; and by the graduated scale at one side of the slot *d*, the rate of consumption of oil is indicated, and can be governed by increasing or diminishing the out-flow of water from the condenser by the valve G.

By having the condenser within the reservoir the condensation of the steam is more rapid and

certain at the start, when most needed, than if it were outside the reservoir; while by having it and the gauge inclosed the device is rendered less clumsy and less liable to damage.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the guard F, gauge-tube I, and packing-rings *e*, within the reservoir B, as described.

2. The arrangement of the condenser C and pipe A' with relation to the hollow standard A

and within the reservoir B, as shown and set forth.

3. The automatic lubricating device, consisting essentially of the hollow standard A, reservoir B, condenser C A', guard F, glass gauge-tube I, valve G, feeding-pipe H, check-valve *b*, filling-cup J, and drain-cock K, constructed, arranged, and operating substantially as described.

Witnesses:

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