

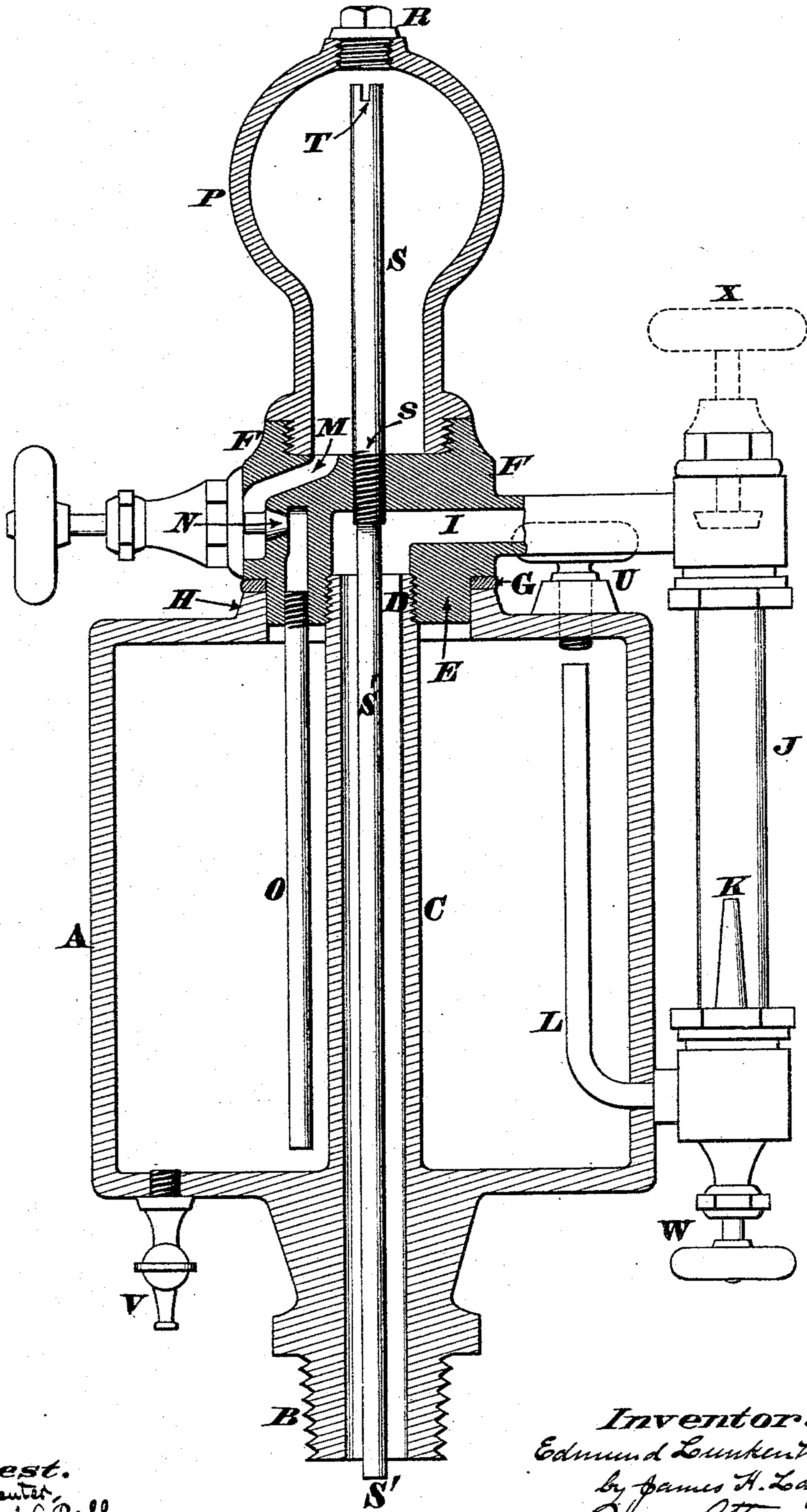
(No Model.)

E. LUNKENHEIMER.

LUBRICATOR.

No. 359,731.

Patented Mar. 22, 1887.



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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 359,731, dated March 22, 1887.

Application filed October 12, 1886. Serial No. 215,997. (No model.)

To all whom it may concern:

Be it known that I, EDMUND LUNKENHEIMER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to those lubricators having an ascending sight-feed; and the first feature of my improvements comprises a novel combination of reservoir, oil-discharge tube, steam-pipe, external detachable head, condenser, and sight-chamber, which devices are arranged as follows: The reservoir has at bottom a hollow screw-threaded shank or other attachment wherewith the lubricator is secured in place, and the channel of this shank communicates with the oil-discharge tube, being, in fact, a continuation of the latter, the upper end of said tube being screw-threaded to engage with the neck of the external and detachable head, which neck is fitted within a nozzle of the reservoir. This nozzle projects from the upper end of the reservoir, and the external head applied to said nozzle has a lateral exposed duct leading into the top of a sight-feed chamber, whose lower end is provided with a customary nipple and a pipe leading up within said reservoir. This external lateral duct connects with the oil-discharge tube that clamps the outer head to the reservoir, but has no communication whatever with the pipe that admits steam to the condenser, it being desirable in this class of lubricators to have one channel for the ascending steam and another separate and distinct channel for the descending oil, in order that there may be no interference between these opposing currents. Furthermore, it is desired to arrange the steam-pipe in such a manner as not to heat the oil in the reservoir to a higher degree than can possibly be avoided. I accordingly locate said pipe within the oil-discharge tube so as not to come in contact with the oil, and carry the upper end of the aforesaid steam-pipe up within the condenser, which latter is mounted upon the detachable head, previously alluded to. The condensed water from this elevated vessel escapes through a valve-guarded port in said head, and then runs down within

a pipe to the bottom of the reservoir, for the purpose of gradually displacing the oil contained therein, and thereby insuring the desired "feed," as hereinafter more fully described.

The annexed drawing is an axial section of my improved lubricator, the sight-chamber and its connections being shown in elevation.

The oil fount or reservoir A, which is usually cylindrical, may have at bottom a hollow screw-threaded shank, B, wherewith the lubricator is secured in place. Occupying an axial position within the reservoir is the oil-discharge tube C, the channel of which is a continuation of the bore of the aforesaid hollow shank or equivalent connection. This tube has no lateral branches or bends of any kind, but is carried vertically up through the reservoir, being screw-threaded at D to engage with the neck E of the external and detachable head, F, a packing-ring, G, being interposed between said head and the upper end of nozzle H. This nozzle is integral with the upper end of the reservoir, and its bore receives the aforesaid cylindrical neck E. The external head, F, has an outer lateral duct, I, the inner end of which communicates with the oil-discharge tube C, while the opposite end of said duct leads into the top of the sight-chamber J, having a customary nipple, K. Extending from the bottom of this sight-chamber is a pipe, L, that is carried up within the reservoir and almost to the top of the same. Furthermore, the external head, F, has a channel or port, M, controlled by a condenser-valve, N, the outlet of said port being in communication with a pendent pipe, O, reaching almost to the bottom of the reservoir.

Coupled to the upper end of the detachable head F is a condenser, P, surmounted by a removable plug, R, the slackening of which latter allows an escape of air when steam is first admitted into the lubricator. Located within this condenser is a steam-pipe, S, threaded at s, to be screwed into the head F, that portion S' of the pipe below said thread being somewhat reduced in diameter, for a purpose that will presently appear. The extreme upper end of this steam-pipe S S' is nicked or slotted at T, to receive a screw-driver or other similar turning-implement.

U is a customary filling-plug, and V a drain-cock for the reservoir. W is a valve at the bottom of the sight-chamber J, and, if desired, another valve may be applied to the top of said chamber, as suggested by the dotted lines X.

In fitting together the various parts of this lubricator, the screw-threaded oil-discharge tube C serves as a tie or binder that securely clamps the external detachable head, F, to the reservoir A, and thus centralizes the neck E of said head within the nozzle H of said reservoir, the steam-pipe S S' being screwed into said head as far as the thread s will permit. Consequently said pipe occupies an axial position both within the condenser P and oil-discharge tube C, and the lower end of said pipe preferably projects a slight distance below the hollow shank B. The fount is filled through plug U, and the other plug, R, is unscrewed sufficiently to allow a proper vent-age of air when steam is admitted into the lubricator, which then operates as follows: Steam enters through the pipe S' S and fills the chamber P, the condensed water formed in said chamber being permitted to escape down the port M and pipe O, thus gradually displacing and elevating the oil contained in said fount. The floating oil then escapes from said fount through the pipe L, nipple K, sight-chamber J, and external duct, I, into the internal tube, C. After entering the tube C the oil flows directly down into the steam pipe or chest, or other part to be lubricated. It will thus be seen that two separate and distinct channels are provided at the base of the lubricator, one channel being adapted to permit the ascent of steam into the condenser and the other channel to allow a descent of oil from the fount. Therefore, these separate channels prevent any interference between the ascending and descending currents, and cause the feed to be perfectly regular and uninterrupted, the rate of discharge being regulated by the condenser-valve N. If the pipe S S' should get choked up with scales or other sediment, the plug R can be detached, the point of a turning-tool be inserted in the nick T, and said pipe can then be unscrewed from the head F and drawn out at the top of the condenser. The pipe can then be cleaned and reinserted, or a new one applied in its place. This withdrawal of the steam-pipe also enables a wire to be passed down through the center of the lubricator for the purpose of cleaning out the tube C. It will thus be seen that the plug R and bodily-detachable steam-pipe S S' permit the ready cleaning of those passages which are the most liable to become choked up, and without removing the lubricator from the engine.

In the drawings the steam-conductor is shown as a single pipe having a reduced portion, S', and a thread, s, which latter serves as a stop that limits the screwing of the up-

per section, S, into the head F. This construction is preferred as a matter of simplicity and economy, and also because the reduced portion S' increases the capacity of the tube C for discharging oil; but in some cases the lower section, S', may be a separate pipe screwed or soldered into the larger or upper section, S, and capable of being withdrawn with the latter. In an inferior modification of my invention the sections S S' may be of the same diameter, but separate, and be screwed into the head, so as to communicate with each other; but as this construction would prevent the bodily withdrawal of the lower section through the condenser for the purpose of cleaning the tube C, it is not recommended for all kinds of lubricators. Whichever of these constructions may be adopted, it is evident the steam-pipe S S' will be a separate and distinct conductor passing up within the oil-discharge tube C and having no contact with the oil in the reservoir. Therefore there will be no danger of the oil being boiled by the heat radiated from the steam-pipe, which serious difficulty frequently happens with those lubricators in which the ascending current of steam and descending current of oil traverse the same channel. It will also be noticed that the lateral branch I of the oil-tube is wholly external with reference to the reservoir A, which external location not only prevents radiation of heat into said reservoir, but it also facilitates the manufacture of the lubricator and renders it more easy to clean, inspect, and repair the same.

I claim as my invention—

1. The combination, in an ascending sight-feed lubricator, of reservoir A, having an oil-discharge tube, C, screw-threaded at D to engage with an external and detachable head, F, the latter being provided with an outer lateral duct, I, leading into said tube C and sight-chamber J, and having an outlet-port, M, whose pipe O is carried down a sufficient distance within the reservoir, a condenser, P, mounted upon said external head, F, and a steam-pipe, S, located within said condenser P and oil-discharge tube C, but having no contact with the oil in the lubricator, by which construction one special channel is afforded for the ascent of steam and another channel for the descent of oil, as herein described.

2. The combination, in a lubricator, of an oil-discharge tube within the reservoir, a condenser in line with said tube, a detachable head between said reservoir and condenser, and a steam-pipe secured to said head and traversing said condenser and oil-discharge tube, substantially as herein described.

3. The combination, in a lubricator, of the reservoir A, having a single vertical base-connection, B, oil-discharge tube C, elevated condenser P, and an external sight-chamber, J, within which chamber the oil ascends and escapes into said discharge-tube C, which latter

is traversed by a steam-pipe, S', whose upper end communicates with said condenser P, for the purpose described.

5 4. The combination, in an ascending sight-feed lubricator having a single base-connection, of an oil-discharge tube extending vertically from top to bottom of the reservoir and traversed by a steam-pipe, the inlet or mouth of said tube being in communication with the

outlet-duct of the sight-chamber, substantially as herein described.

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

EDMUND LUNKENHEIMER.

Witnesses:

JAMES H. LAYMAN,
SAML. S. CARPENTER.