

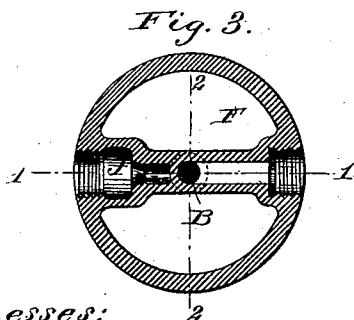
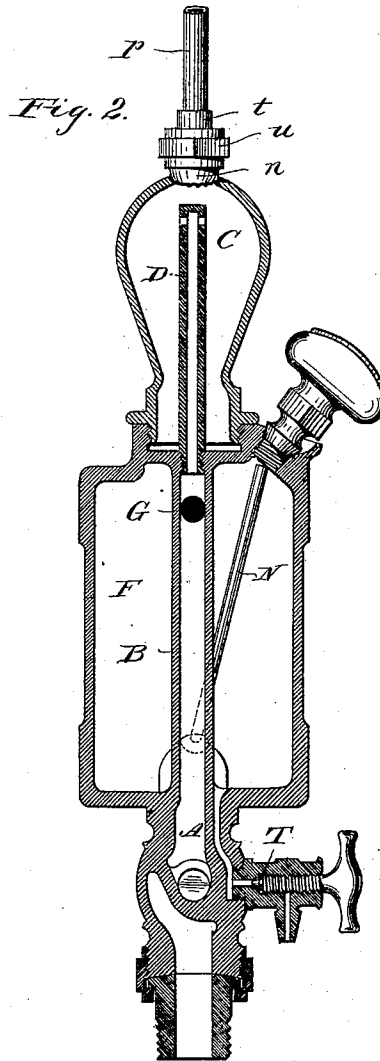
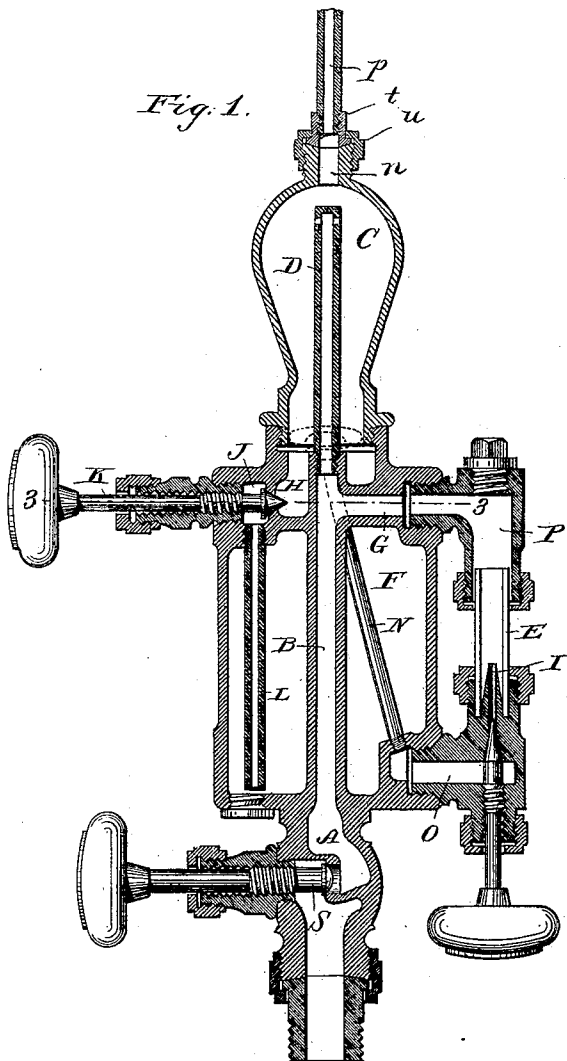
(No Model.)

2 Sheets—Sheet 1.

L. KACZANDER & R. RUDDY.  
LUBRICATOR.

No. 337,500.

Patented Mar. 9, 1886.



witnesses:

*N. N. Low*  
*E. H. Dick*

Inventors:

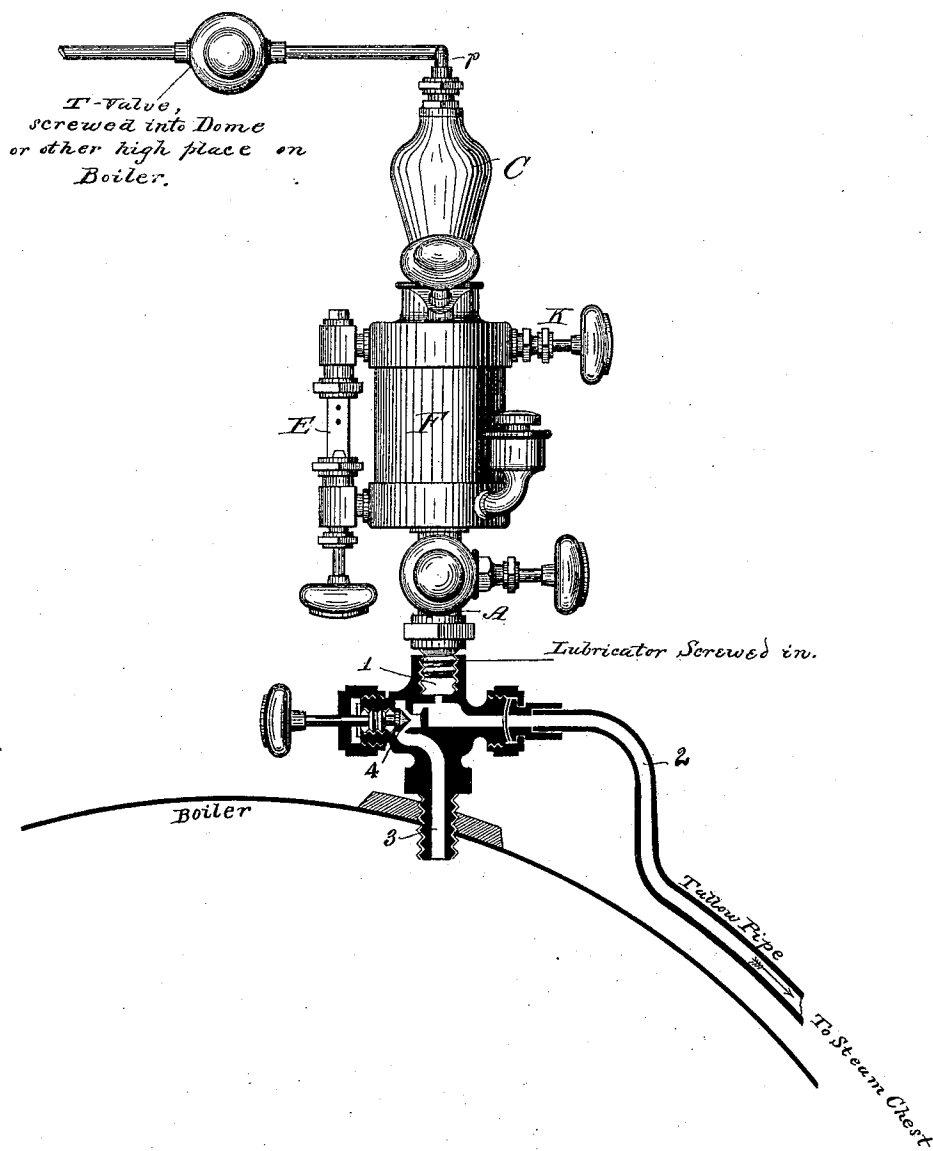
*Leopold Kaczander and*  
*Robert Ruddy*  
*by Macallister Bailey*  
*their attorney*

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Fig. 4.



Witnesses:

H. W. Low.  
E. J. Dick

Inventors:

Leopold Kaczander  
Robert Ruddy  
By Marceline Bailey  
their atty

# UNITED STATES PATENT OFFICE.

LEOPOLD KACZANDER, OF NEW YORK, AND ROBERT RUDDY, OF MOUNT VERNON, ASSIGNORS TO THE NATHAN MANUFACTURING COMPANY, OF NEW YORK, N. Y.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 337,500, dated March 9, 1886.

Application filed January 12, 1886. Serial No. 188,310. (No model.)

*To all whom it may concern:*

Be it known that we, LEOPOLD KACZANDER, of the city, county, and State of New York, and ROBERT RUDDY, of Mount Vernon, in the county of Westchester and State of New York, have invented a certain new and useful Improvement in Lubricators, of which the following is a specification.

Our invention has relation to that class of lubricators (designed more particularly for use with locomotives) in which the oil-chamber is combined with a condensing-chamber in which steam is condensed, and from which the resulting water of condensation is caused to pass gradually to the oil-chamber, for the purpose of effecting the feed of the lubricant.

The object of our improvement is to bring about a better, speedier, and more efficient condensation of the steam in the condensing-chamber. To this end we combine with the condensing-chamber two or more steam-inlets, which are opposed to one another in the sense that the jets issuing from them will meet or strike against one another with the result of dispersing and scattering the steam throughout the condensing-chamber and over or against the interior wall thereof, and thus effecting a very rapid and thorough condensation.

The nature of our improvement and the manner in which the same is or may be carried into effect will readily be understood by reference to the accompanying drawings, in which we have represented our invention applied to a lubricator of the kind shown and described in Letters Patent No. 324,339, granted to us on the 11th of August, 1885.

In the drawings, Figure 1 is a vertical central section on line 1 1, Fig. 3. Fig. 2 is a vertical central section on line 2 2, Fig. 3. Fig. 3 is a section on line 3 3, Fig. 1, omitting the valve for controlling the escape of the condense-water and the sight-feed glass and its connections. Fig. 4 illustrates the manner of applying our improved lubricator in order to insure in the condenser steam-jets discharging therein from opposite directions. The lubricator itself is represented in elevation, while the bottom connections (which in this

instance are those of the ordinary tallow-cup in use for many years past) are in section.

We will first give a general description of the lubricator, and will then point out the features which characterize our improvements.

F is the oil-chamber; A, the main steam-conduit; B, the vertical steam-channel; C, the condenser; D, the extension of channel B.

H J K L are the parts by which the water of condensation is fed from the condenser to the oil-chamber.

E is the sight-feed glass.

G P O are the sight-feed-glass connections.

I is the nozzle.

N is the oil-feed pipe, leading from the upper part of the oil-chamber to the lower connection, O.

S is the steam-valve, and T the draw-off cock or valve.

The parts thus far named in their general arrangement and mode of operation resemble like-lettered parts in Letters Patent No. 324,339, and to this extent require no further explanation here. The construction and arrangement of the channel-extension D and of the condenser are, however, somewhat modified, so as to introduce therein the features which characterize our present improvement, and these features we shall now proceed to describe. The steam-pipe D extends, as usual, from the chamber B to the upper part of the condenser. Opposite its upper end we place the inlet of a second steam-pipe, *p*, which is to be connected to the source of steam-supply, and should of course be provided at a suitable or convenient point with a controlling-valve.

In practice we propose to connect the pipe with the dome or other elevated steam-space of the boiler of the locomotive. The steam-jets issuing from the two pipes D and *p* meet near the top of the condenser, with the effect of scattering and dispersing the steam against the walls thereof, and thus effecting a rapid and thorough condensation.

To receive the pipe *p*, we form on the top of condenser an externally-screw-threaded neck, *n*, to receive the union coupling *u*, which holds in place upon the neck the tail-piece *t*, to which the pipe *p* is made fast by a screw-joint

or otherwise. It will be noted that the top pipe, *t*, under this arrangement does not itself enter the condenser proper. It will also be noted that as both steam-jets enter the condenser under the same pressure, no steam entering at the top of the condenser from the pipe *p* can pass down into the central pipe, D. It is preferred to close the top of the pipe D, and to provide in said pipe side holes for the lateral discharge of the steam. In this way the jet is deflected laterally and outwardly against the walls of the condenser. This feature is of value, whether the opposite jet from pipe *p* be used or not.

We have just above said that both steam-jets enter the condenser under the same pressure. This is effected by connecting both the top connection, *p*, and the steam-conduit A to the same source of steam-supply—as, for instance, to the boiler or to the steam-pipe—at a point intermediate between the throttle and the steam-inlet, so that the condenser may be constantly supplied with steam through both pipes *p* A at the same pressure, whether steam is cut off from the engine or not. This is illustrated in Fig. 4, where our lubricator screws into the same socket in which the ordinary tallow-cup has heretofore been screwed, the socket 1, tallow-pipe branch 2, boiler branch 3, and valve 4 being the customary and well-known tallow-cup connection which have for many years been in use. Steam, through the boiler branch 3, (which opens into some high part of the boiler,) passes up into steam-pipe A and thence to the condenser. At the same time, through the top connection, *p*, which also is connected to some high part of the boiler, a steam-jet is also discharged into the condenser. The prime object of the arrangement is to furnish a larger and more certain supply of condense-water, and not in any way to influence the internal pressure of the lubricator or the equalizing of the pressure upon the oil, the action of the steam in the respects last named being precisely the same, whether the top connection is used or not.

Having described our improvement and the manner in which the same is or may be carried into effect, what we claim, and desire to secure by Letters Patent, is as follows:

1. The combination, with the oil and con-

densing chambers of a lubricator, of two steam jets or pipes connected with a source of continuous steam-supply and discharging into the condensing-chamber from opposite directions, one of said jets or pipes communicating with the oil-discharge passage, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the oil and condensing chambers and their connections and the top steam-pipe, *p*, of the steam-channel B and the central steam-pipe, D, extending up into the condensing-chamber and closed at top, and provided with lateral discharge-holes *h*, as and for the purposes hereinbefore set forth.

3. The combination, with the oil and condensing-chambers, the sight-feed, and the oil and water regulating devices, of two steam-jets communicating with a source of continuous steam-supply and discharging into the condenser, entering the one centrally and vertically from the top and the other centrally and vertically from the bottom of the condensing-chamber, the two being arranged so that they shall meet near the top of the condenser, substantially as and for the purposes hereinbefore set forth.

4. The combination, with the oil and condensing chambers, of the central steam-pipe, D, with closed top and lateral openings *h*, and the opposed steam-pipe *p*, substantially as and for the purposes hereinbefore set forth.

5. The combination of the oil-chamber, the condenser-chamber, the sight-feed, and their connections, the conduit-passage up through the oil-chamber and discharging into the condenser-chamber, and having a branch leading to the sight-feed glass, whereby said conduit serves at once for the supply of steam and the discharge of oil, a branch pipe from said conduit to a source of continuous steam-supply, and an auxiliary pipe, *p*, leading into the condenser from the same source of steam-supply, these parts being arranged and organized as and for the purposes hereinbefore set forth.

In testimony whereof we have set our hands this 9th day of January, A. D. 1886.

LEOPOLD KACZANDER.  
ROBERT RUDDY.

Witnesses:

CHARLES JUDGE,  
GUS. A. BISCHOFF.