

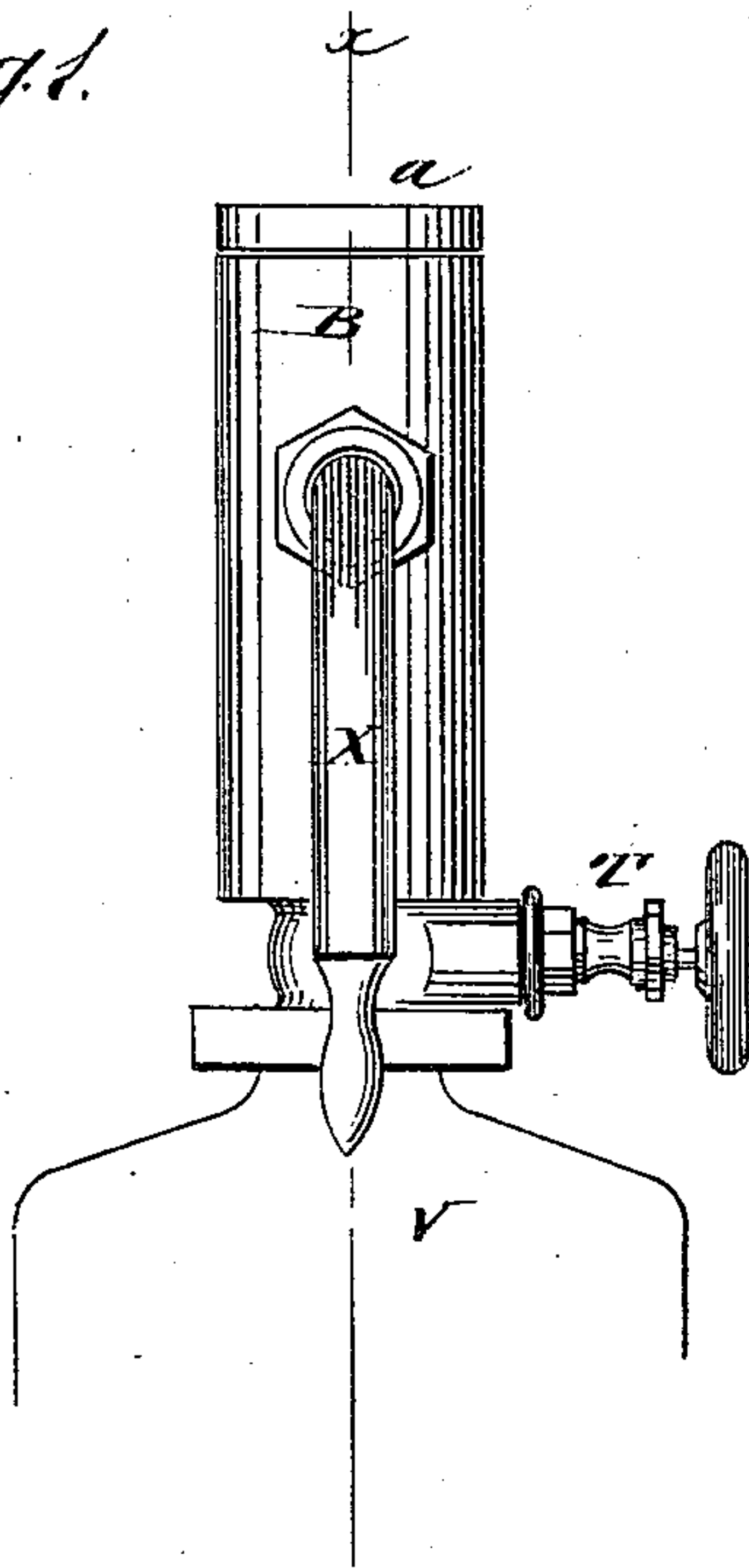
(No Model.)

H. R. A. BOYS.  
LUBRICATOR.

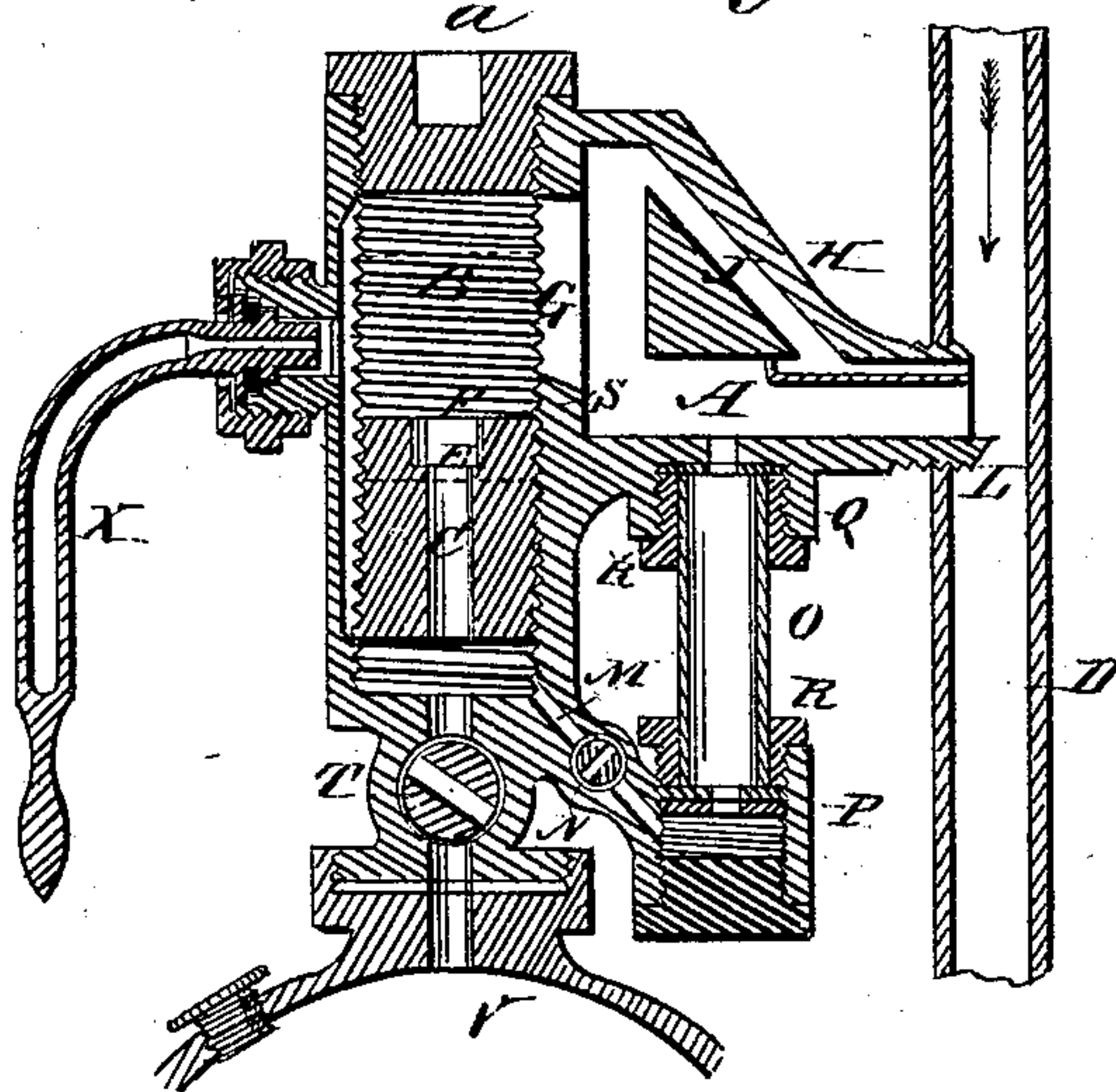
No. 254,598.

Patented Mar. 7, 1882.

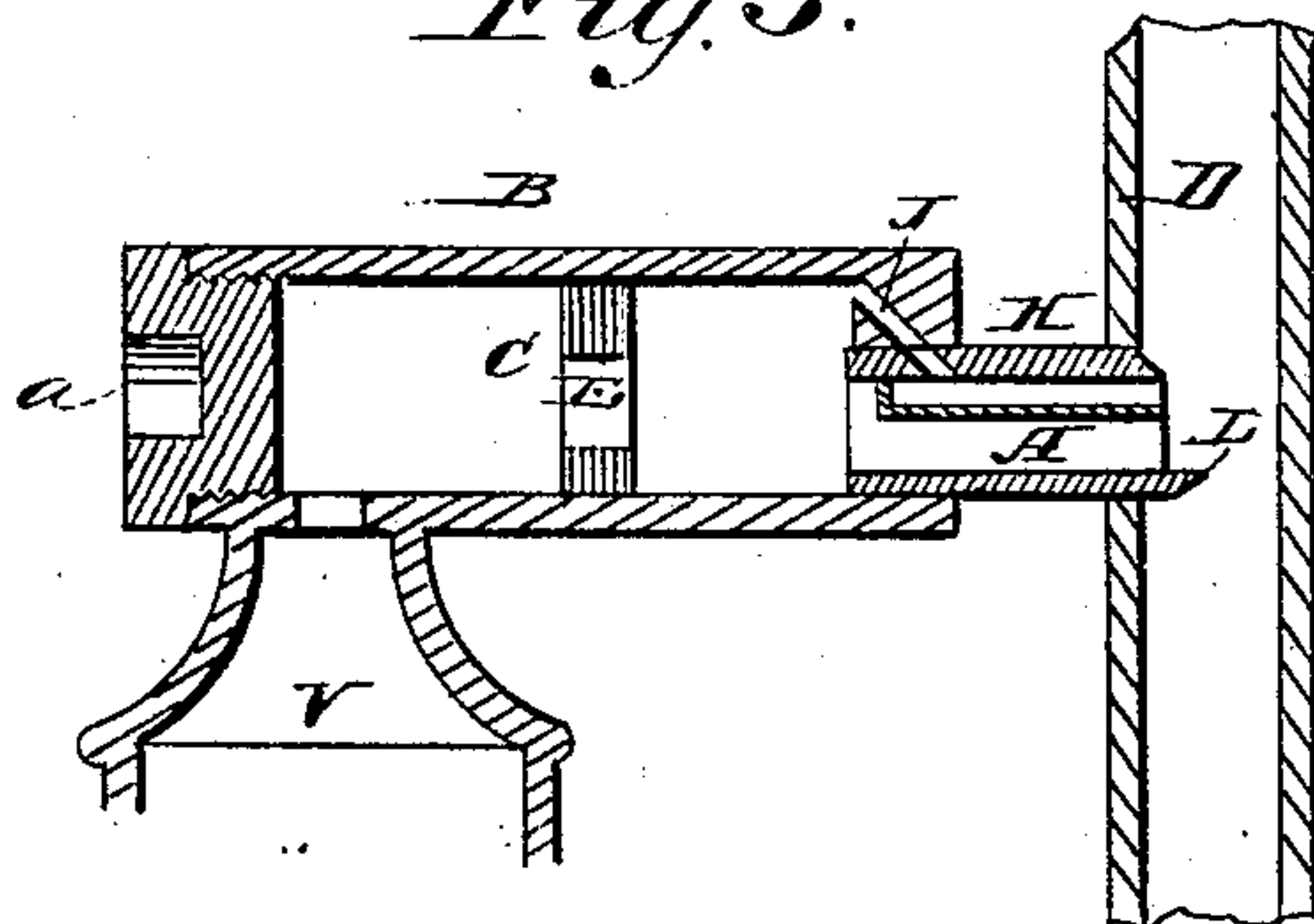
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

HENRY R. A. BOYS, OF BARRIE, ONTARIO, CANADA.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 254,598, dated March 7, 1882.

Application filed December 16, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY RAMMEL ALVES BOYS, of Barrie, in the Province of Ontario and Dominion of Canada, have invented a new and useful Improvement in Lubricators, of which the following is a full, clear, and exact description.

My improvements relate generally to that class of lubricators for engine-cylinders operated by condensing steam.

The invention consists in a novel construction and arrangement of the parts, as hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my improved lubricator. Fig. 2 is a longitudinal section, showing the condensing-cylinder, regulating-plug, exit-passage for air and gas, and the supplementary condenser. Fig. 3 is a sectional view of the lubricator as arranged with a horizontal condenser.

Referring to Figs. 1 and 2, B is the condensing-chamber, provided with cap *a*.

V is the oil-flask on which the cylinder is connected.

T is the valve for shutting off the pressure when the flask has to be filled.

A is the passage in the connection H of the chamber B between the lubricator and steam-pipe D.

C is the regulating-plug, formed with an exterior screw-thread, taking a similar thread on the sides of chamber B, so that the plug may be adjusted to increase the space between the upper end and cap *a* to the largest extent, as shown in full lines, or diminished to the smallest extent, as shown in dotted lines.

E is a passage through plug C, to allow passage of water to the flask, the passage being enlarged in square form, as shown at F, to receive a wrench for turning the plug.

G is a slot through the wall of the condensing-chamber into the passage A.

J is a passage from the upper end of slot G, where the air and gas accumulate, to the steam-pipe D, for exit of the gas and air.

L is a projection on the lower part of the passage A, connecting the condensing-cham-

ber and steam-pipe, extending into the steam-pipe, so as to deflect the steam into the passages faster than required by condensation, and thereby cause the ejecting of the air and gas through the passage J to the steam-pipe.

M is a passage from cylinder B to the bottom of drop-tube *o*, and N is a cock fitted in the passage for closing it when required.

P is a centrally-apertured disk at the bottom of tube *o*, for causing the oil to rise at the center.

Q is a connection between tube *o* and passage A.

R R are the packing-glands of the tube.

S is a bridge on the wall of cylinder B, left in forming slot G, to prevent any water of condensation passing from the passages to the condensing-chamber.

X is the supplementary condenser, attached to an apertured nipple on the side of cylinder B by a packed joint, which permits the chamber X to be turned to a horizontal position for discharge of its contents to the main chamber. This insures an increased flow of oil, and the chamber will, on being returned to a perpendicular position, gradually fill again; or it may be left in a horizontal position to serve as an enlargement of the main supplemental condensing-chamber; or it may be made to hold a large quantity of oil or water, and be filled through an opening, ready for use at any time a larger supply than usual is required.

In Fig. 3 the condensing-chamber is shown horizontal. B is the condensing-chamber; C, the plug, movable to and from cap *a*, to vary the condensing-space and regulate the amount of water required to work the lubricator, that condensed between the plug and steam-pipe flowing back to the pipe.

The operation is as follows: On valve T being opened steam will flow through the passage A to the space between plug C and cap *a*, and the water of condensation will pass through the plug on to the flask, thereby causing the oil to rise and flow through passage M, drop-tube *o*, and passage A to the steam-pipe. The pressure or current of steam caused by its striking the projection L will keep the lubricator free from air and gas. In case the drop-feed fails to work, cock N may be closed, and in a short time the oil will rise through

passage E and pass to slot G to the passage A.

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

5 1. In a lubricator, the combination, with the condensing-chamber and steam-pipe, of an air and gas passage leading from the upper part of the condensing-chamber to the steam-pipe above the steam-passage, and communicating  
10 with the said steam-passage at its inner end, substantially as herein shown and described, whereby the air and gas are ejected from the condenser into the steam-pipe, as set forth.

2. In a lubricator, the combination, with the  
15 condensing-chamber B, provided with the slot G and the steam-pipe D, of the connection H, provided with the steam-passage A, having the projection L on its lower part extending into the steam-pipe, and the air and gas pas-  
20 sage J above said steam-passage and communicating therewith at its inner end, substan-

tially as herein shown and described, whereby steam will be admitted faster than required and the air and gas thereby ejected, as set forth.

3. In a lubricator, the combination, with 25 the condensing-chamber B, internally screw-threaded and provided with the slot G, of the apertured and externally screw-threaded plug C, substantially as and for the purpose set forth.

4. In a lubricator, the combination, with the 30 condensing-chamber B, of the supplementary condensing-chamber X, pivoted to the side of the main chamber B, to adapt it to be swung in a horizontal position to empty its contents 35 into the said main chamber, substantially as herein shown and described.

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Witnesses:

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