

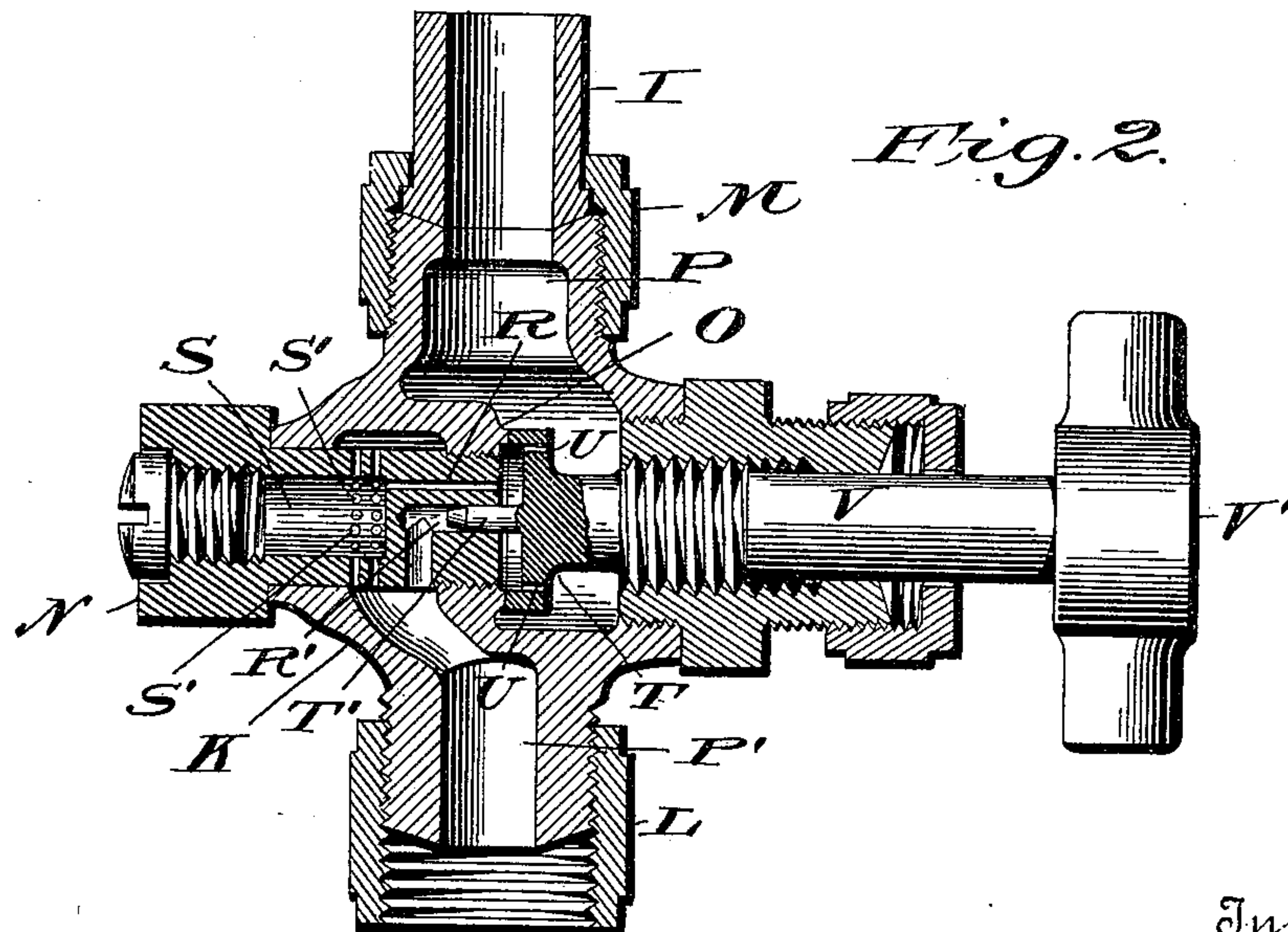
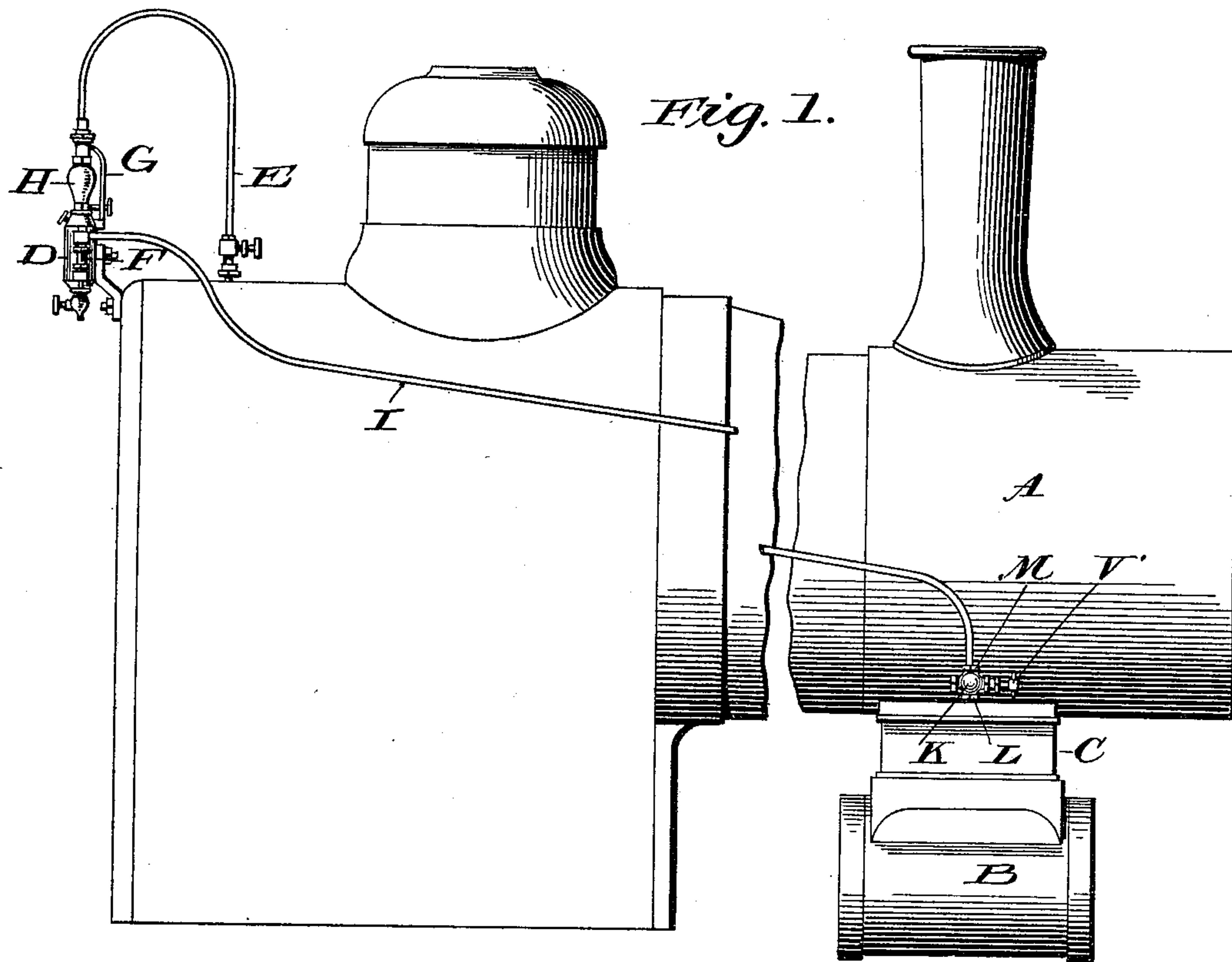
No. 626,166.

Patented May 30, 1899.

L. KACZANDER.
LUBRICATING APPARATUS.

(Application filed Mar. 13, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

LEOPOLD KACZANDER, OF NEW YORK, N. Y., ASSIGNOR TO THE NATHAN MANUFACTURING COMPANY, OF SAME PLACE.

LUBRICATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 626,166, dated May 30, 1899.

Application filed March 13, 1899. Serial No. 708,872. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD KACZANDER, a citizen of the United States, and a resident of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Lubricating Apparatus, of which the following is a specification.

This invention has for its object to provide a simple and efficient means for lubricating steam cylinders and valves, especially those which are subjected to variable steam-pressures, as is the case with the cylinders and valves of locomotive-engines.

More particularly the invention is an improvement upon that class of lubricators of which the lubricating apparatus set forth in Swift's patent, No. 272,793, of February 20, 1883, is the type—i. e., a lubricating apparatus in which a choke-plug or a contracted or choked passage is employed at or near the steam-chest of the engine to intercept to a great extent the pressure from either the steam-chest or the lubricator and to equalize said pressure in the duct or pipe which conveys the lubricant from the lubricator to the steam-chest, with the consequent effect of equalizing also the flow of the lubricant. It has been found in connection with such lubricating apparatus that the choked passage at the steam-chest is liable to become clogged, thus rendering the lubricator inoperative, and different means have been proposed for the purpose of cleaning and opening up the choke-plug in case of clogging. All such means are either inconvenient or dangerous, as they require the stopping of the locomotive and consequent delay or mechanical manipulation on the part of the enginemen while the engine is running. To obviate these objectionable features of devices now known to me, I have perfected an improved steam-chest device in connection with the lubricator which makes a clogging of the choke-plug during the run of the engine practically impossible.

I will first describe my improvements by reference to the accompanying drawings and will then point out more particularly in the claims those features which I believe to be new and of my own invention.

In the drawings, Figure 1 is a side eleva-

tion of so much of a locomotive boiler, cylinder, steam-chest, and lubricating apparatus as is needed to illustrate my improvements. Fig. 2 is an enlarged vertical central section of the steam-chest attachment in which my improvements are embodied.

A represents the boiler of a locomotive, B the cylinder, and C the steam-chest containing the slide-valve for the distribution of the steam to the cylinder.

D represents a lubricator of any suitable form and construction—in this case shown in the form of a sight-feed-displacement lubricator—which automatically feeds the lubricant to the parts to be lubricated by condensed steam entering the lubricator and displacing a corresponding quantity of the lubricant. E is the valve-controlled steam-supply pipe of the lubricator; F, the sight-feed glass; G, the steam-tube, which from the top of condenser H conveys live steam through passages inside of the lubricator into oil-pipe I, the steam from the tube G and the oil from glass F passing together through pipe I into the steam-chest. The construction of such lubricators and the coöperation and function of the several parts composing the same are well known and need no detailed description.

To the top of the steam-chest I connect the casing K, which contains the several working parts of the attachment, by means of coupling-nut L, and at M connection is made with the oil-pipe I.

N is a plug screwed into a bridge O, separating chambers P and P'. This plug is provided with a very small passage R and a larger passage R'. The small passage opens into the hollow chamber S of plug N, outlet from this chamber into chamber P' being provided in the form of two or more rows of holes S', drilled around the periphery of plug N. The large passage R' opens directly into chamber P'.

On a circular projection of bridge O is seated the disk valve T, provided with a central stem T', filling the passage R'. When valve T is closed, as in the drawings, the stem T' closes the passage R'. Into the periphery of disk T one or more rows of holes U are drilled. Valve T is controlled by screw-threaded stem V and handle V'.

It is evident from the drawings that when valve T is closed the lubricant and the steam coming down pipe I must pass from it into chamber P and thence to the steam-chest through holes U, small passage R, holes S', and chamber P'. When valve T is opened, removing stem T' from passage R', then direct communication is established between passages P and P' by way of passage R'.

The operation of the attachment in connection with the lubricator and the steam-chest is as follows: The lubricator having been put into operation in the usual and well-known manner, oil and steam will pass from the lubricator, through oil-pipes N and passage R, into the steam-chest. The constant pressure of steam in pipe I toward the steam-chest enables the lubricant to force its way through the choked passage R, and in case a partial vacuum is formed in the cylinder by shutting off steam therefrom the small passage R arrests the downrush of steam through pipe I and maintains the steam at quite or nearly a uniform pressure, thus equalizing the flow of the lubricant under all circumstances. If for any reason the enginemen desire to use hand-oilers, with which lubricators are usually provided, to feed intermittently a larger quantity of oil into the cylinder than would conveniently pass through passage R, or to oil the valves and cylinders in case the sight-glasses of the lubricator should break, then valve T is opened, making the large passage R' available for such purpose.

The holes U in valve T and the holes S' in plug N form strainers at the inlet to and the outlet from passage R. The diameter of these holes is intended to be slightly less than that of passage R, so that any matter which will pass through holes U or S' will readily pass through R without clogging the same. The number of holes U and S' should provide an area twenty to thirty times that of passage R. At the same time each one of the holes U or S' is preferably large enough to admit the passage through it alone of the normal volume of the lubricant through pipe I. It is evident, therefore, that as long as one each of the holes U and S' is open the lubricator cannot be rendered inoperative, and if the strainers are looked after and cleaned before the engine goes out on a run it is practically impossible that all the holes in the strainers should be clogged during the run of the engine, and the lubricator will therefore be eminently reliable and efficient.

The parts of the attachment are so arranged that the strainers can be got at readily whenever it is desired to clean them. It is also evident that delivery of lubricant from pipe I through passage R' is independent of the strainer-holes U, so that even if all the holes U should clog up during the run of the en-

gine by opening valve T a large and independent delivery-passage is provided for the lubricant from the hand-oilers. In other words, the larger valve-controlled passage R' is independent of and extends around not only the permanently open choked passage, but also the strainer at the inlet end of said passage, as well as, for that matter, the strainer at the outlet end of said passage.

Having described my improvements and the best way now known to me of carrying the same into effect, I state, in conclusion, that I do not restrict myself to the structural details herein set forth in illustration of my said improvements, since manifestly the same can be varied without departure from the spirit of my invention; but

What I claim herein as new, and desire to secure by Letters Patent, is—

1. A lubricator attachment comprising a casing adapted to be connected to the lubricator and steam-chest respectively and containing a permanently open choked passage, a strainer at one or both ends of the said passage, and a larger valve-controlled by-passage which is independent of and extends around both the choked passage and the strainer or strainers therefor, substantially as and for the purposes hereinbefore set forth.

2. A lubricator attachment comprising a casing adapted to be connected to the lubricator and the steam-chest respectively, and containing a plug N which has a small permanently open choked passage, a strainer and a larger valve-controlled by-passage which is independent of and extends around both the choked passage and the strainer therefor at the outlet end of the choked passage, substantially as and for the purposes hereinbefore set forth.

3. A lubricator attachment comprising a casing adapted to be connected to the lubricator and steam-chest respectively, and containing a small permanently open choked passage, a larger by-passage and a valve T which controls the by-passage, and is provided with a strainer for the inlet end of the choked passage, substantially as and for the purposes hereinbefore set forth.

4. A lubricator attachment comprising a casing adapted to be connected to the lubricator and steam-chest respectively and containing a large valve-controlled by-passage and a permanently open choked passage, protected at both its inlet and its outlet end by strainers, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 11th day of March, 1899.

LEOPOLD KACZANDER.

Witnesses:

ADOLPH BARGEBUHR,
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