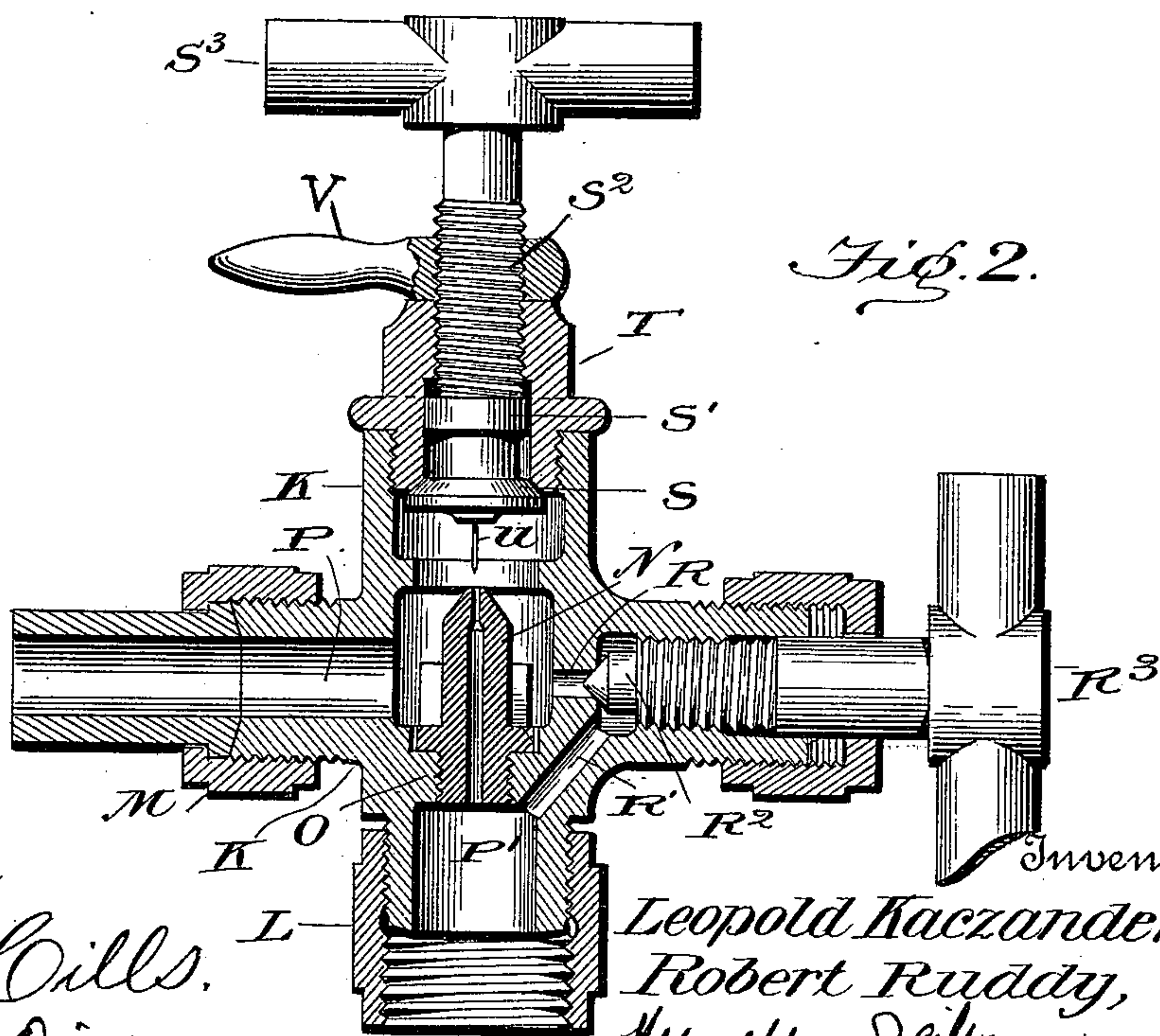
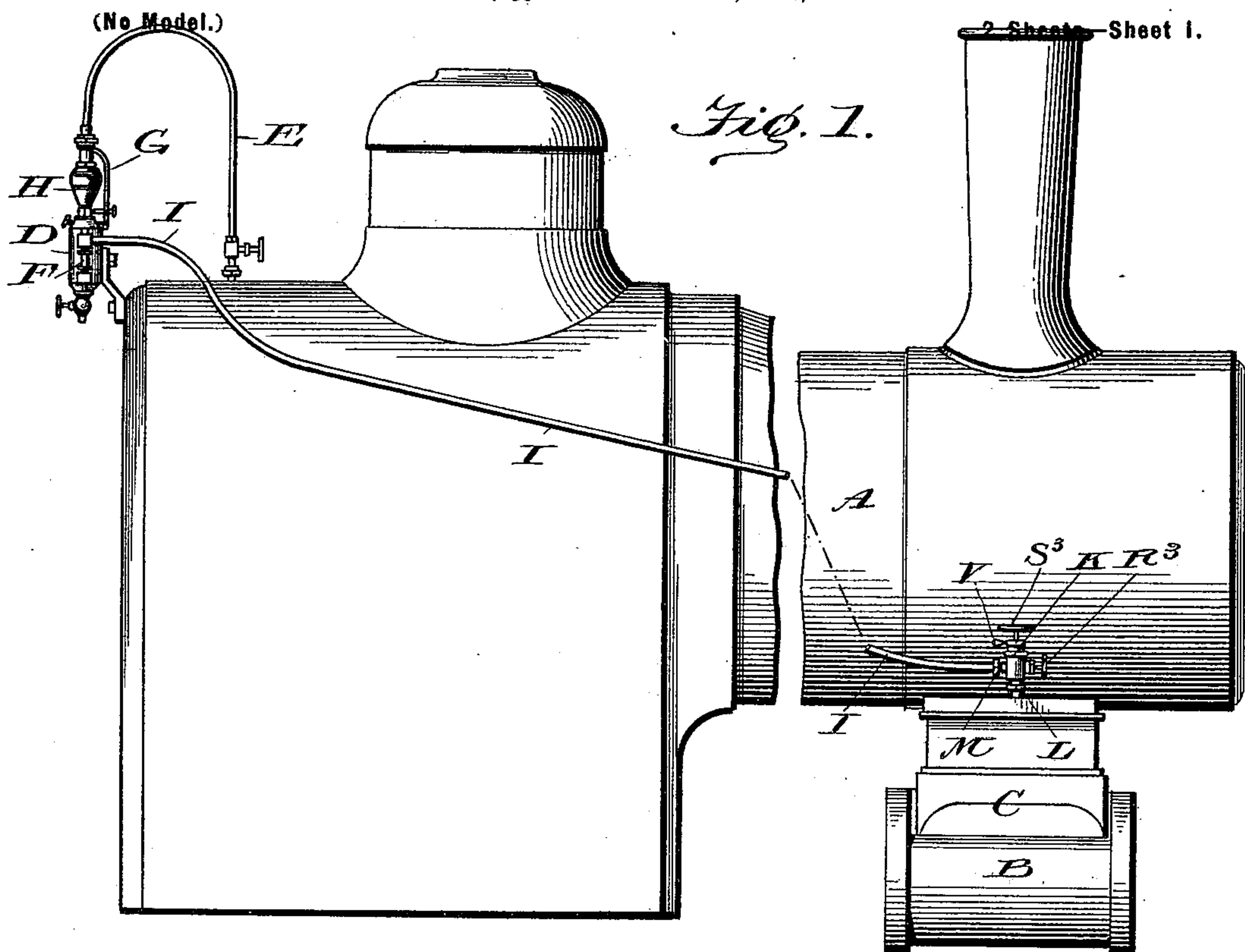


No. 619,962.

Patented Feb. 21, 1899.

L. KACZANDER & R. RUDDY.
LUBRICATOR.

(Application filed Nov. 21, 1898.)



Witnesses
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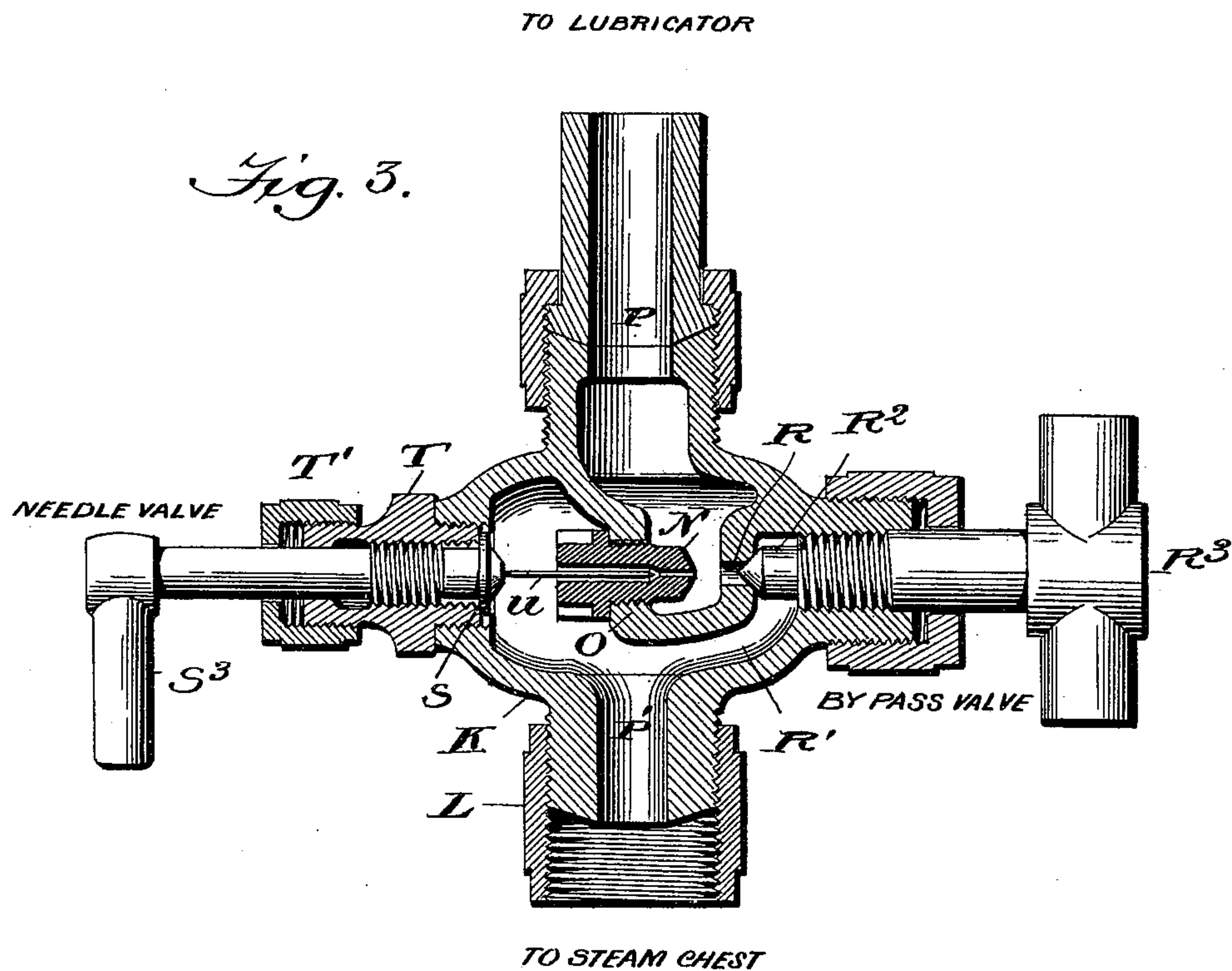
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 619,962, dated February 21, 1899.

Application filed November 21, 1898. Serial No. 697,115. (No model.)

To all whom it may concern:

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

10 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
15 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,
20 1883, is the type—that is to say, 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 of steam
25 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
30 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 necessitating the disconnection of the pipes or of the attachment at
35 the steam-chest in order to get at the contracted passage for the purpose of cleaning it, which is a troublesome and tedious operation. To avoid this inconvenience, it has been
40 proposed to blow out the passage by putting it in a movable plug, which can be withdrawn from a larger passage normally closed by the valve end of the plug, so that when the plug is thus withdrawn and steam is shut off
45 from the cylinder the inrush or downrush of steam through the oil-pipe from the lubricator side of the apparatus will have the effect of cleaning the contracted passage or channel in the valve-like plug. Such an expedient is the subject of Swift's patent, No.

301,301, of July 1, 1884. Under our improvement in this direction we do not depend upon or make use of steam as the cleaning agent, but in lieu thereof we combine with the choke-passage at the steam-chest mechanical devices by which the same may be readily
55 cleaned and opened up in case of clogging without any inconvenient breaking of joints or removal of parts and without reference to the steam-pressure on either side of the choke
60 plug or passage, and this we believe to be new with us over and beyond the special mechanical devices which are hereinafter described as the preferred embodiment of this
65 feature. We also combine with the choked passage at the steam-chest a separate and independent valve controlled by passage of larger area around the choked passage, which
70 can be availed of whenever it is desired to feed a larger quantity of oil to the steam-chest and cylinder than would conveniently pass through to the contracted or choked passage.

In the accompanying drawings, to which we will now refer for a better understanding of our invention, Figure 1 is a side elevation
75 of so much of a locomotive boiler, cylinder, steam-chest, and lubricating apparatus as needed to illustrate our improvements. Fig. 2 is an enlarged vertical central section of the steam-chest attachment in which our improvements are embodied. Fig. 3 is a like section
80 of a modification.

A represents the boiler of a locomotive, B the cylinder, and C the steam-chest containing the slide-valve for the distribution of the
85 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
95 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 tube G and the oil from glass F
100

meeting in pipe I and passing together through that pipe into the steam-chest. The construction of such lubricators and the cooperation and function of the several parts composing the same are well known and need no detailed description.

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

N is a choke-plug screwed into a bridge O, separating chambers P and P'. The plug is provided at its top with a very small passage, and it is evident from the drawings that the lubricant and the steam coming down pipe I must pass from it into chamber P and thence to the steam-chest through plug N and chamber P'.

It is usual in connection with such lubricators to provide the same with hand-oilers to enable the enginemen to oil the valves and cylinders in case the sight-glasses of the lubricator should break. To facilitate the passage of the oil from the hand-oilers to the chest, we provide the casing K with the by-passage R and R' around the choke-plug, which by-passage is controlled by valve R², operated by handle R³. On top of casing K is a spindle S², which upon its inner end carries the needle or plunger *u*, arranged in line with and on the prolongation of the contracted passage in the choke-plug N. The spindle is arranged so that it may be advanced toward and retracted from the contracted passage in the plug N, thereby causing the needle *u* to enter and penetrate or to withdraw from the said contracted passage, as the case may be. To this end the spindle S² is provided with a handle S³ and is screw-threaded to engage and move in the threaded cap T, the lower portion of which is tubular and screws into a neck on the casing K, as shown in Fig. 2. To better guide the spindle S² in its movement, it is provided with a cylindrical part S', which fits in the tubular lower portion of the cap T, and to prevent any escape of oil or steam from the chamber P through the joint between the screw-threaded spindle S² and the cap T we prefer to provide the spindle below its cylindrical guide portion S' with a valve S, which when the needle *u* is in retracted position seats against the bottom of cap T, as shown in Fig. 2. At V is shown a lock-nut of ordinary or suitable construction for securing the spindle S² in adjusted position.

The parts of the attachment are shown in Fig. 2 in the position they occupy during the normal working of the lubricator, the needle *u* being retracted from the choke-plug and the by-passage being closed.

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 lu-

bricator through oil-pipe I and plug N 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 in plug N, and in case a partial vacuum is formed in the cylinder by shutting off steam therefrom the small passage in plug N 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. Should the small passage in plug N at any time become clogged, then by moving valve S downward and its needle-point *u* into the choked passage the latter is quickly and conveniently freed of any obstruction, after which the needle is returned to normal position.

If for any reason the enginemen desire to use the hand-oiler on the lubricator to feed intermittently a larger quantity of oil into the cylinder than would conveniently pass through plug N or to maintain the feed while the needle is being used to clear the passage in the choke-plug, then valve R² is opened, making the large by-passage R and R' available for such purpose.

In Fig. 3 is illustrated an arrangement in which an ordinary stuffing-box T' on the cap T is substituted for and serves the purpose of the valve S in Fig. 2. In this arrangement also the cleansing needle or plunger *u* enters the choke-plug N from the larger end thereof and normally or in retracted position is still contained therein, as shown in Fig. 3. In this way the needle is more surely and certainly guided into the choke or contracted passage in the plug N when the latter is to be cleaned. The device in other respects is the same substantially as that shown in Fig. 2, the differences being merely those growing out of the change in position of the choke-plug from the vertical, as in Fig. 2, to the horizontal, as in Fig. 3. The operation of the device is the same as that already described with reference to Fig. 2.

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

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

1. The casing adapted to be connected with the oil-pipe and the steam-chest respectively, and containing a choked passage in combination with a spindle mounted and movable in said casing and provided with an operating-handle, a needle or plunger carried by said spindle and adapted to enter said choked passage and a valve on said spindle for normally closing the joint between the spindle and the casing against escape of steam and oil, sub-

stantially as and for the purposes hereinbefore set forth.

2. A lubricator attachment comprising a casing adapted to be connected to the oil-
5 pipe and the steam-chest respectively, a fixed choke plug or passage in the casing, a cleaning-needle for said choked passage, and operating mechanism therefor mounted in the casing, and a separate and distinct valve-
10 controlled by-pass around the choked pas-

sage, substantially as and for the purposes hereinbefore set forth.

In testimony whereof we have hereunto set our hands this 15th day of November, 1898.

LEOPOLD KACZANDER.

ROBERT RUDDY.

Witnesses:

ADOLPH BARGEBUHR,

JAMES E. MURPHY.