

No. 615,993.

Patented Dec. 13, 1898.

L. KACZANDER.

LUBRICATING APPARATUS FOR LOCOMOTIVE ENGINES.

(Application filed Apr. 2, 1896.)

(No Model.)

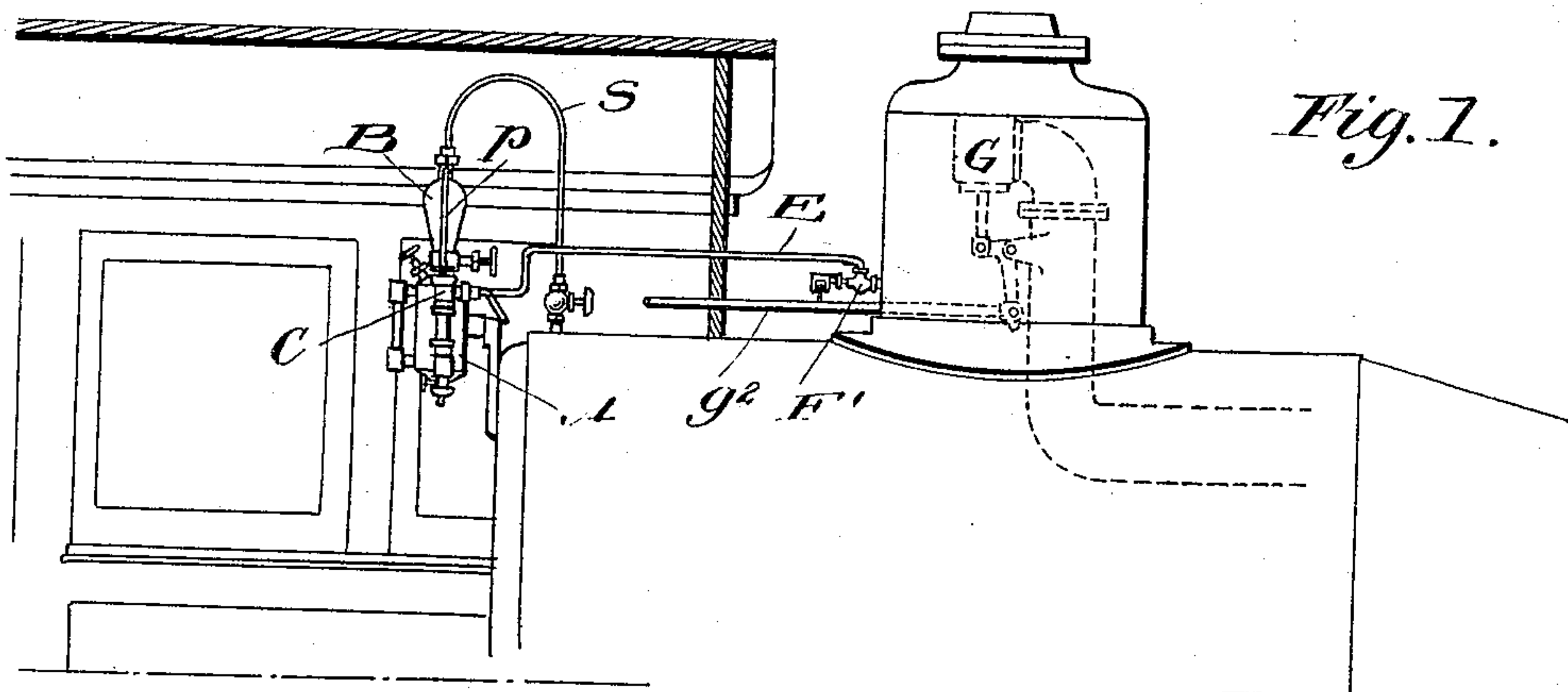


Fig. 1.

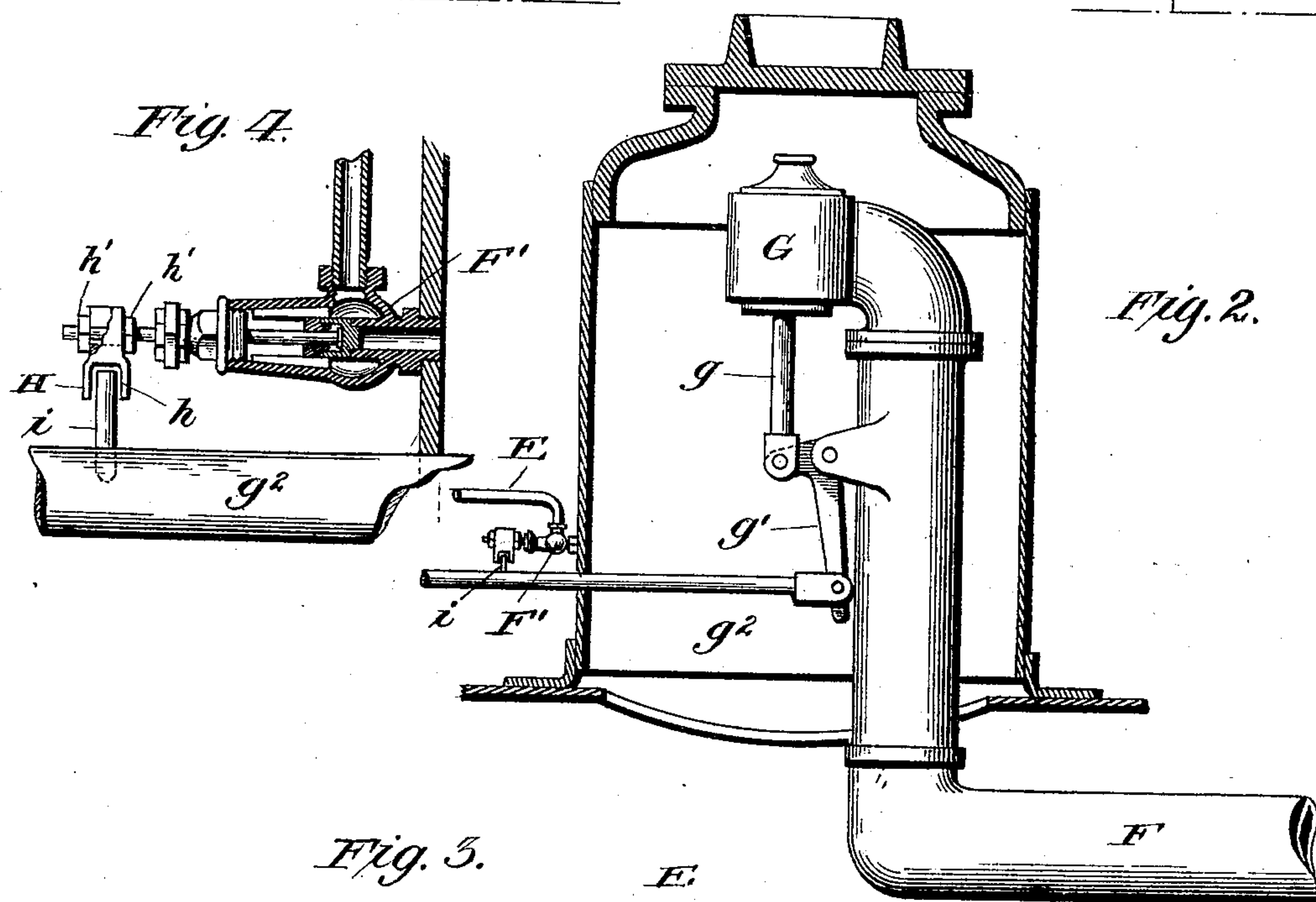


Fig. 2.

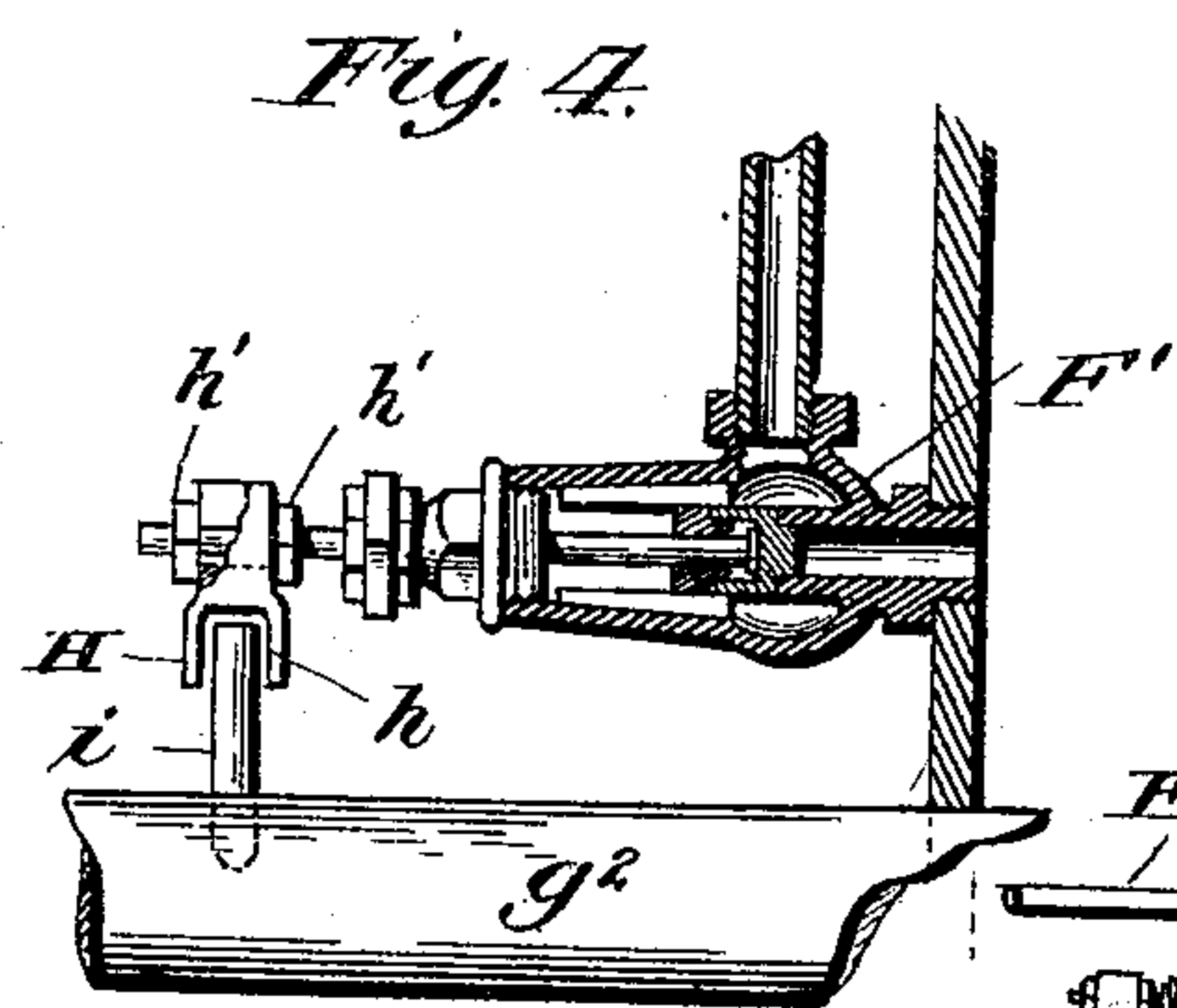


Fig. 4.

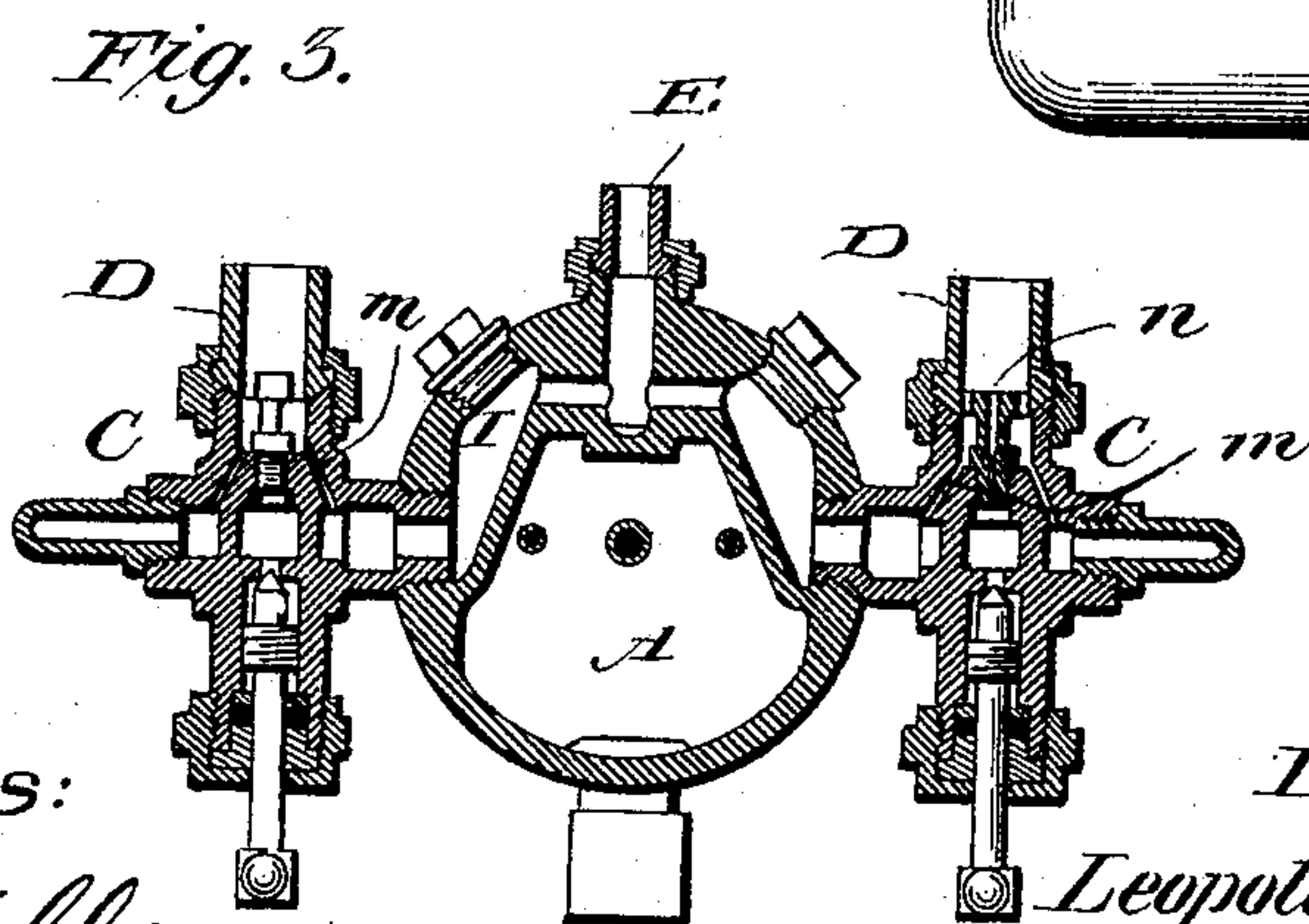


Fig. 5.

Witnesses:
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Inventor:
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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 FOR LOCOMOTIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 615,993, dated December 13, 1898.

Application filed April 2, 1896. Serial No. 585,946. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD KACZANDER, of the city, county, and State of New York, have invented a certain new and useful Improvement in Lubricating Apparatus for Locomotive-Engines, of which the following is a specification.

My invention relates to lubricators used for oiling the valves and cylinders of locomotive-engines; and its object is to provide means whereby, whether the engine is steaming or whether it is running with no steam in the cylinders, the rate of oil-feed from the lubricator will remain uniform and undisturbed. The customary equalizing appliances, comprising a condenser and boiler and sight-feed connections such as now in use on lubricators of this class, are effective for this purpose to a certain extent; but under certain conditions—as, for example, when the locomotive is running with its throttle wide open—a back pressure from the cylinder will be created, by which the flow of oil will be gradually retarded and eventually stopped altogether.

It is the object of my invention to remedy this difficulty, and this result I attain by a certain combination and arrangement of instrumentalities, which will first be described by reference to the accompanying drawings and will then be more particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of so much of a locomotive-engine as needed to illustrate my invention. Fig. 2 is a vertical longitudinal section, on enlarged scale, of the dome portion of the locomotive-boiler. Fig. 3 is a horizontal section, on enlarged scale, of the lubricator in the plane of the upper sight-feed connections. Fig. 4 is an enlarged sectional elevation of the auxiliary steam-supply valve and the devices by which it is actuated.

The lubricator is shown in the drawings as a double one—that is to say, one in which the same oil-chamber serves to lubricate both cylinders of a locomotive-engine; but my invention of course is applicable to a “single” lubricator or to a multiple-feed lubricator.

A is the oil-reservoir.

B is the condenser, communicating with the

reservoir through the usual valve-controlled passages, which conduct the water of condensation to the lower part of the reservoir.

S is the valve-controlled main steam-pipe, leading into the top of the condenser and connecting with the equalizing-pipes, one of which is shown at *p*, leading to the upper sight-feed connections on opposite sides of the reservoir. These sight-feed connections are shown at C in section in Fig. 3. Each has an outlet consisting of the nozzle or restricted passage *n*, through which the oil which passes up through the sight-feed glass is discharged into the oil-pipe D, whence it passes to the steam-chest and cylinder pertaining to that pipe. Further description of these parts of the lubricator is unnecessary. They comprise the customary feed and equalizing appliances, and their mode of operation is well known.

The restricted area of the oil-discharge nozzles *n* does not at times permit the passage therethrough of enough steam from the equalizing-pipes *p* to exert sufficient pressure at the lubricator end of the oil-pipes to overcome the back pressure in the cylinders or steam-chests, this being particularly noticeable when the engine is running with its throttle wide open, the result being that the oil-feed will be gradually retarded and eventually stopped. To remedy this difficulty, I provide an auxiliary steam-supply pipe which leads from the dome or steam-space of the boiler into each oil-pipe at a point beyond or on the outer side of the discharge-nozzle *n*, and I so connect the valve by which the said pipe is opened and closed with the throttle-valve-operating mechanism that said valve shall be actuated to open and close the said auxiliary steam-supply pipe simultaneously with the opening and closing of the throttle-valve itself. Consequently when the throttle is open the auxiliary steam-supply valve also will stand open, thus affording the supply of steam to the lubricator end of the oil-pipe, needed at this time to equalize or neutralize the back pressure from the steam-chest or cylinder, while when the throttle is closed the auxiliary steam-supply valve will thereby be actuated to close its pipe also, thus shutting off at this time the auxiliary

steam-supply from the lubricator end of the oil-pipe. Various mechanical devices may be used to thus connect the throttle and the auxiliary steam-supply-controlling valve.

5 One simple means for this purpose is illustrated in the drawings. The auxiliary steam-supply pipe is shown at E as leading from the steam-dome. F is the dry pipe, which leads to the cylinder. G is the throttle-valve.
 10 g is its stem. g' is the pivoted angle-lever, connected to said valve-stem, and g^2 is the longitudinally-movable stem or rod of the throttle-valve lever, all arranged and operating as customary.

15 The auxiliary steam-supply pipe E is provided with a longitudinally movable or sliding piston-valve F', by which it may be opened and closed, and the stem of this valve engages a downwardly-extending yoke H, having in its
 20 bottom a slot h , which is entered and engaged by a pin i in the throttle-valve-lever stem g^2 . The arrangement is such that when stem g^2 moves in a direction to open the throttle-valve the yoke H will be moved in a direction
 25 to open valve F, and movement of said stem in the opposite direction to close the throttle-valve will cause a corresponding closing of the valve F'. The yoke at its upper end is forked to straddle the stem of valve F', and
 30 the latter is caused to engage the yoke by nuts h' , which screw upon the stem from opposite sides of the yoke.

The auxiliary steam-supply pipe E may at its end next to the lubricator separate into two
 35 branches, one branch opening into each oil-pipe D at a point beyond or on the outer side of the nozzle N; but for various reasons I prefer to connect that pipe directly to the lubricator, as seen in Fig. 3, where it leads into
 40 a chamber I, cored out in the body of the lubricator and wholly separate and distinct from the steam-spaces with which the ordinary equalizing-appliance pipes p connect.

From this steam-chamber a passage m leads directly into each oil-pipe D at a point on the
 45 outer side of the nozzle n . I am thus enabled to obtain a compact organization of parts and to supply the additional steam to both oil-pipes from one and the same steam-chamber in the body of the lubricator. 50

Having described my improvements and the best way now known to me of carrying the same into effect, what I claim herein as new and of my own invention is—

1. In combination with a locomotive-lubricator provided with suitable inlet and outlet
 55 pipes, whereby the contents of the oil-cup are balanced, a throttle-lever, an auxiliary pipe leading from the source of steam-supply to the lubricator-outlet pipe, a valve in said
 60 auxiliary pipe and connections engaging the valve and the throttle-lever whereby the throttle and the valve are actuated simultaneously, substantially as described.

2. In a lubricating apparatus for the valves
 65 and cylinders of locomotive-engines, a lubricator provided, in addition to the usual equalizing appliances, with an auxiliary steam-supply pipe leading from the boiler into the
 70 lubricator end of the oil-pipe at a point on the outer side of the lubricator oil-discharge nozzle, and a controlling-valve for said auxiliary steam-supply pipe, in combination with the
 75 throttle-valve, actuating mechanism therefor, and connections between said actuating mechanism and the said controlling-valve, whereby the latter is operated to open and
 close simultaneously with the opening and closing of the throttle-valve, substantially as
 80 and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 28th day of March, 1896.

LEOPOLD KACZANDER.

Witnesses:

MORRIS STETTMEIER,
 JAMES E. MURPHY.