

No. 786,637.

PATENTED APR. 4, 1905.

R. J. FLINN.
LUBRICATOR.

APPLICATION FILED AUG. 24, 1903.

Fig. 2.

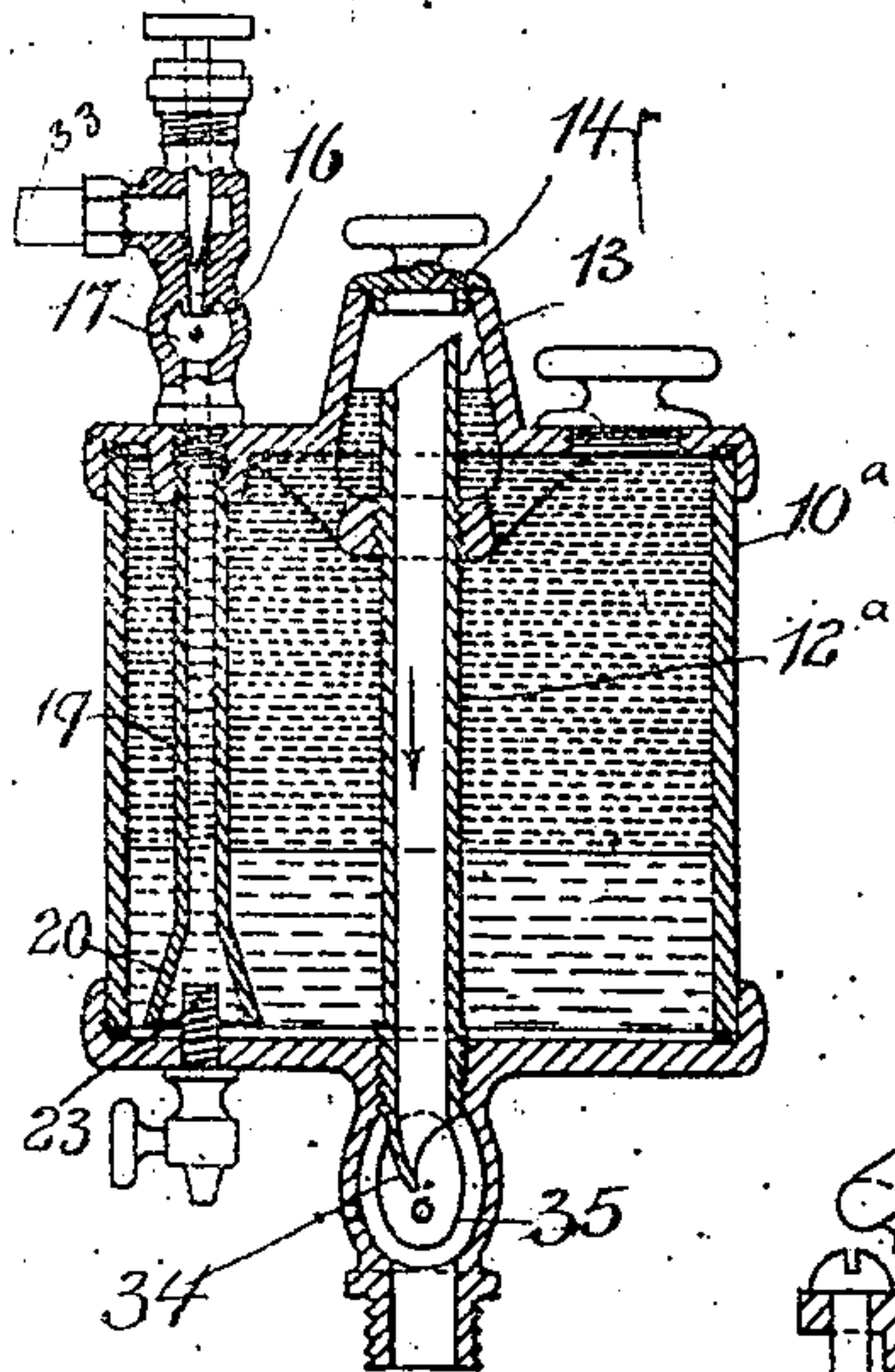


Fig. 1.

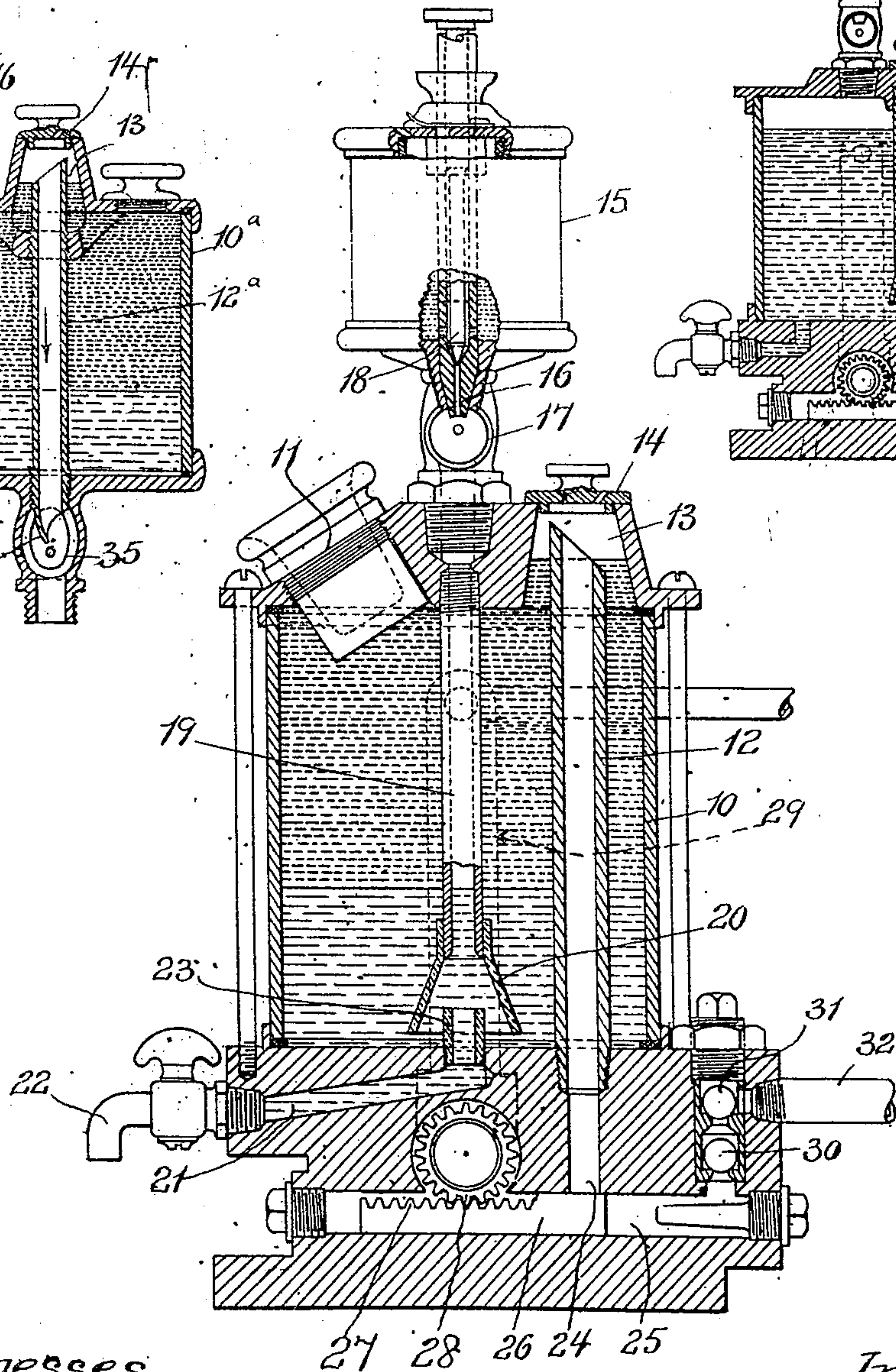
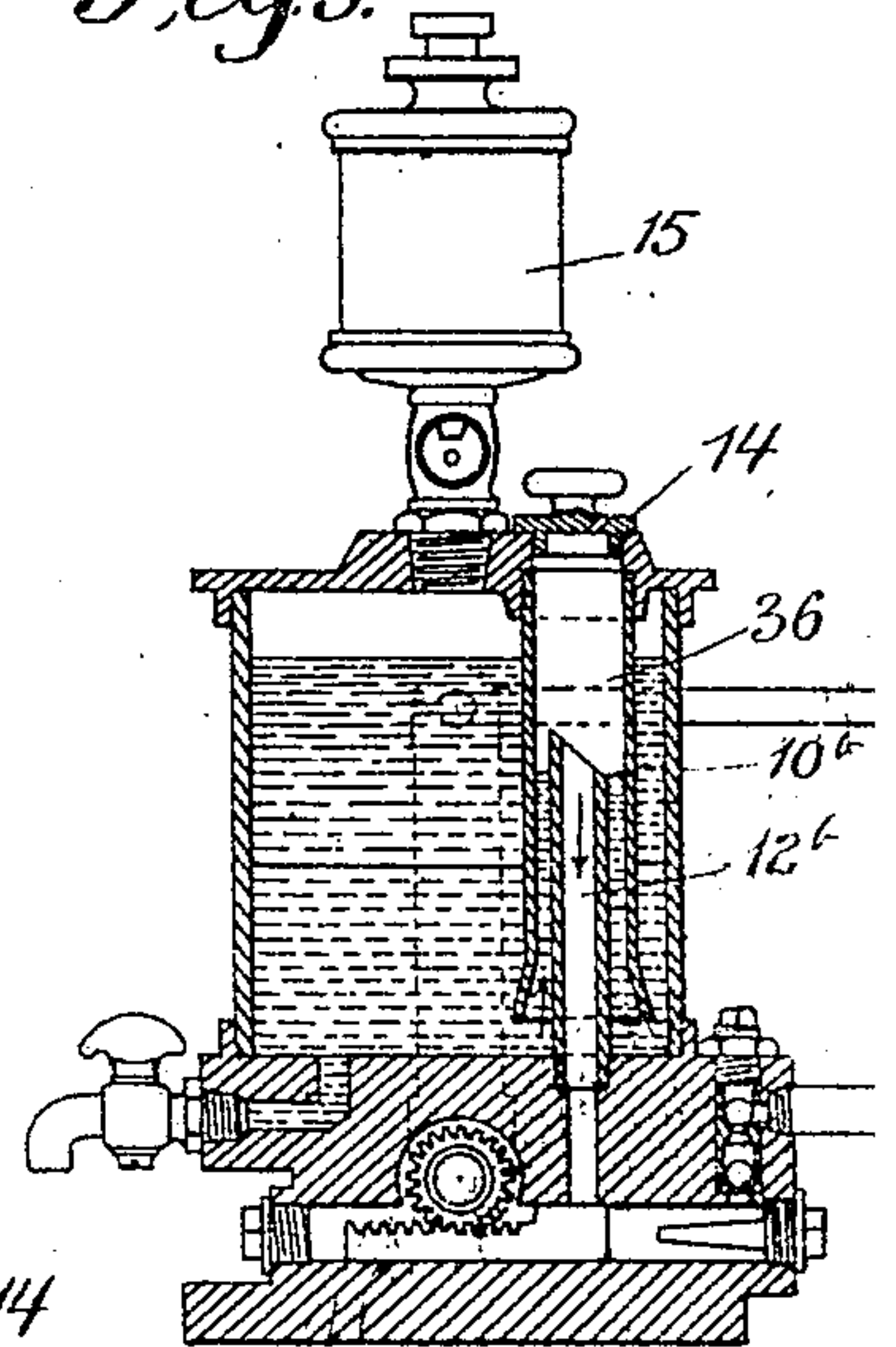


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

RICHARD J. FLINN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO GEORGE P. ABORN, OF BOSTON, MASSACHUSETTS.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 786,637, dated April 4, 1905.

Application filed August 24, 1903. Serial No. 170,511.

To all whom it may concern:

Be it known that I, RICHARD J. FLINN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful improvements in Lubricators, of which the following is a specification.

This invention relates to oil cups or lubricators in which the oil instead of being dropped direct into the bearing or eduction-conduit leading thereto or into a mechanical oil-forcing device is fed by the pressure of a liquid of different specific gravity from the oil and of a greater and more uniform degree of fluidity, the oil thus fed passing directly to the bearings or to a suitable forcing device.

The present invention comprises the novel features of construction and the novel method of feeding fluid lubricant hereinafter described and claimed.

Of the accompanying drawings, Figure 1 represents a vertical section of a lubricator constructed according to this invention. Fig. 2 represents a similar view, on a reduced scale, showing a modification. Fig. 3 represents a similar view showing a second modification.

The same reference characters indicate the same parts in all the figures.

In the drawings, 10 is an oil cup or reservoir, preferably having a transparent side and provided with a filling-opening occupied by a plug 11.

12 is an outlet tube or duct screwed into the base of the oil-cup and having an orifice at its upper end inclined to the axis of the tube and located in an extension or dome 13 of the main oil-cup chamber, said extension being open at the top and provided with a loose-fitting cap 14.

15 is a secondary cup or reservoir mounted on top of the oil-cup 10 and adapted to contain a liquid—such, for instance, as water—having a different specific gravity and a greater and more uniform degree of fluidity than oil. This secondary reservoir has a contracted outlet 16, with a transparent-sided (or open-sided) sight-chamber 17, and the dropping of the liquid from said outlet is controlled by an adjustable inlet-valve 18. A tube 19 is fitted in the cup of the oil-cup in line with the dropping outlet or nozzle 16 and has its outlet near the

bottom of the oil-cup in a flaring mouthpiece 50 or inverted funnel 20.

21 is a drain-duct formed in the base of the oil-cup and controlled by a stop-cock 22, said duct having its inlet 23 within the funnel 20 above the lower edge of the latter.

The outlet-tube 12 aligns with a duct 24 in the base of the oil-cup forming the induction-conduit of a pump-cylinder 25 in said base occupied by a piston 26. The latter is worked by a rack 27, pinion 28, and operating-lever 29, attached to the pinion-shaft and adapted to be connected with a suitable moving part on an engine or other machinery. The discharge is through a pair of check-valves 30 31 into an eduction conduit or outlet 32, connected with the bearings or part to be lubricated.

This form of lubricator is designed for use with a displacing liquid, such as water, heavier than the oil. The water is placed in the secondary reservoir 15, which is open to the atmosphere at the top and drops by gravity into the tube 19 from the dropping-nozzle 16 under control of the inlet-valve 18. The oil is placed in the cup or reservoir 10, and the water extruding from under the lower edge of the funnel 20 displaces the oil upwardly and causes it to overflow into the tube 12. The slanting orifice at the upper end of said tube aids the easy overflow of the oil into the tube, and the contracted dome or extension 13 gives a greater vertical rise at the upper surface of the oil for a predetermined quantity of water dropped into the tube 19 than would be the case were the inlet to the tube 12 within the greater diameter of the main body of the oil-cup. The liquids in both reservoirs 10 and 15 have atmospheric pressure on their surfaces, and the flow is controlled wholly by gravity.

This lubricator is not subject to clogging or intermittent flow as are those in which the oil is dropped direct and is independent of the condition of the oil due to differences in temperature. This displacing liquid is of uniform fluidity greater than that of the oil and may be successfully passed through a dropping-nozzle under all practical conditions. The outlet for the oil through the tube 12, on

the other hand, is much larger than the dropping-nozzle and is sufficient to carry off the oil under all conditions in which it will flow. The arrangement of funnel 20 and drain-inlet 5 23 prevents the withdrawal of the liquid in the oil-cup 10 below the inlet 23, and hence avoids getting oil into the tube 19.

Fig. 2 shows a modification in which 33 is a water-supply pipe leading from a tank or 10 reservoir or from a city water-supply system to supply the dropping device 16 and in which there is a dropping device 34 at the lower end of the overflow-tube 12^a contained in a sight-chamber 35.

15 Fig. 3 shows a second modification adapted for the use of a displacing liquid lighter than the oil—such, for instance, as kerosene. In this instance the secondary reservoir 15 has an outlet into the top of the oil-cup 10^b, and 20 the outlet-tube 12^b is surrounded by a tube 36, having an inlet near the bottom of the oil-cup and open at its upper end to the atmosphere through a loose-fitting cap 14, so as to avoid siphonic action. In this arrangement the dis- 25 placing liquid remains on top and forces the oil downwardly in the cup 10^b and up through the tube 36 into the overflow-tube 12^b.

It will be understood that various changes in the detailed construction may be made 30 without departing from the spirit of the invention.

I claim—

1. In a lubricator, an oil-reservoir open to the atmosphere and having an inlet in its top, 35 a gravity overflow-outlet leading from said reservoir, a chamber for the reception of a

liquid of a different specific gravity from the oil, said chamber having an outlet leading to the inlet in said reservoir, said outlet being provided with a dropping device, and means 40 for varying the size of said outlet.

2. In a lubricator, an oil-reservoir open to the atmosphere and having an inlet in its top, a gravity overflow-outlet leading from said reservoir, a chamber for the reception of a 45 liquid of a different specific gravity from the oil, said chamber being also open to the atmosphere at its upper portion, and an outlet leading from said chamber to the inlet of said reservoir, and valve mechanism controlling 50 said outlet.

3. In a lubricator, an oil-reservoir open to the atmosphere, a conduit leading to the lower part of the reservoir and having its inlet at the top of the latter, a chamber supported 55 upon said reservoir and also open to the atmosphere, an outlet leading from said chamber to the inlet of said conduit, and an adjustable dropping device connected to said outlet.

4. In a lubricator, an oil-reservoir open to 60 the atmosphere and having an overflow-outlet, a water-chamber having an outlet-conduit leading to the lower part of said reservoir, and a drain having an inlet from said conduit located within the discharge-mouth of the latter 65 and above the plane of the latter.

In testimony whereof I have affixed my signature in presence of two witnesses.

RICHARD J. FLINN.

Witnesses:

GEORGE P. ABORN,
C. F. BROWN.