

No. 803,296.

PATENTED OCT. 31, 1905

F. LOWRY.
GREASE LUBRICATOR.
APPLICATION FILED FEB. 18, 1905.

2 SHEETS—SHEET 1.

FIG. 1.

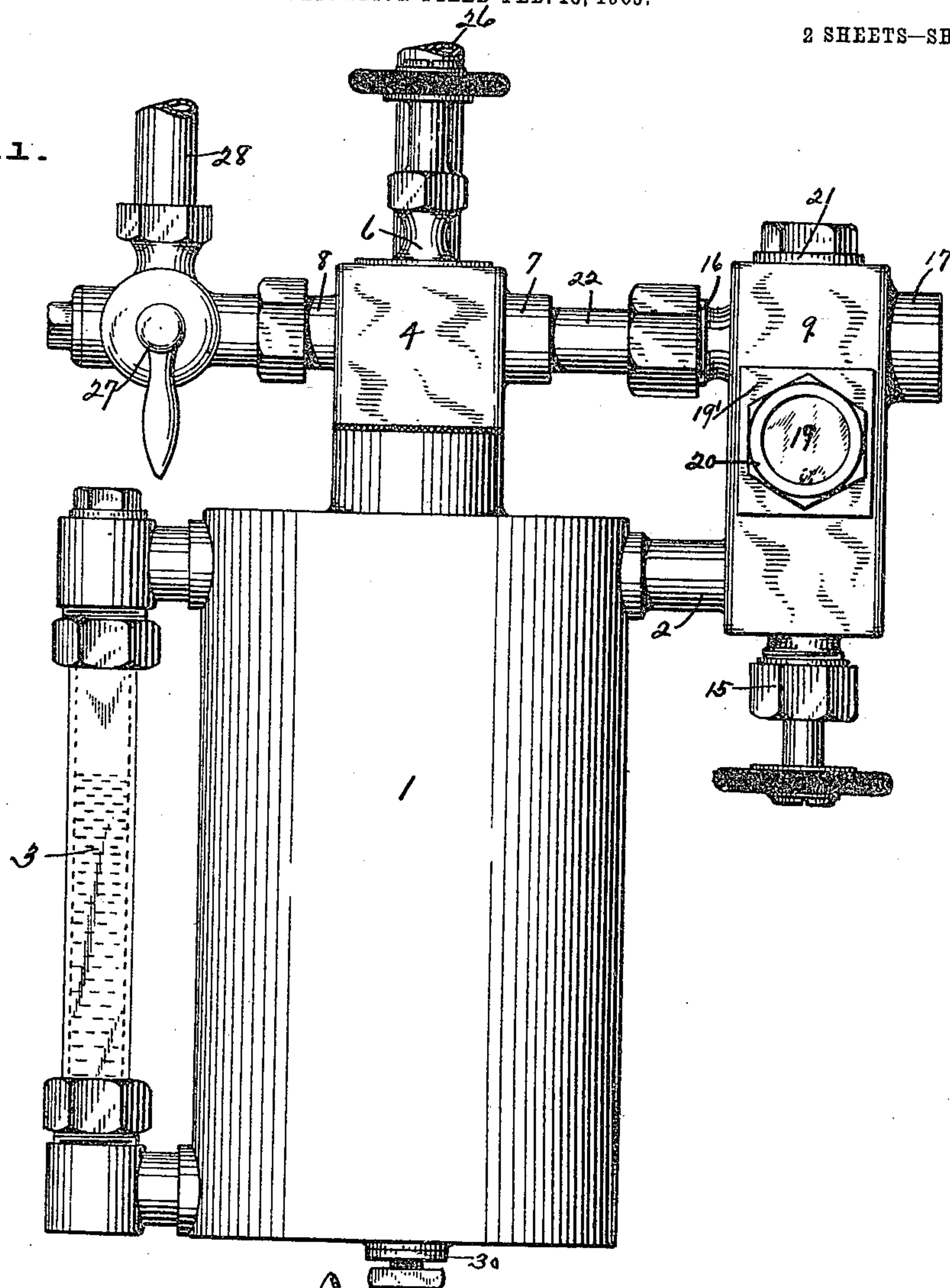
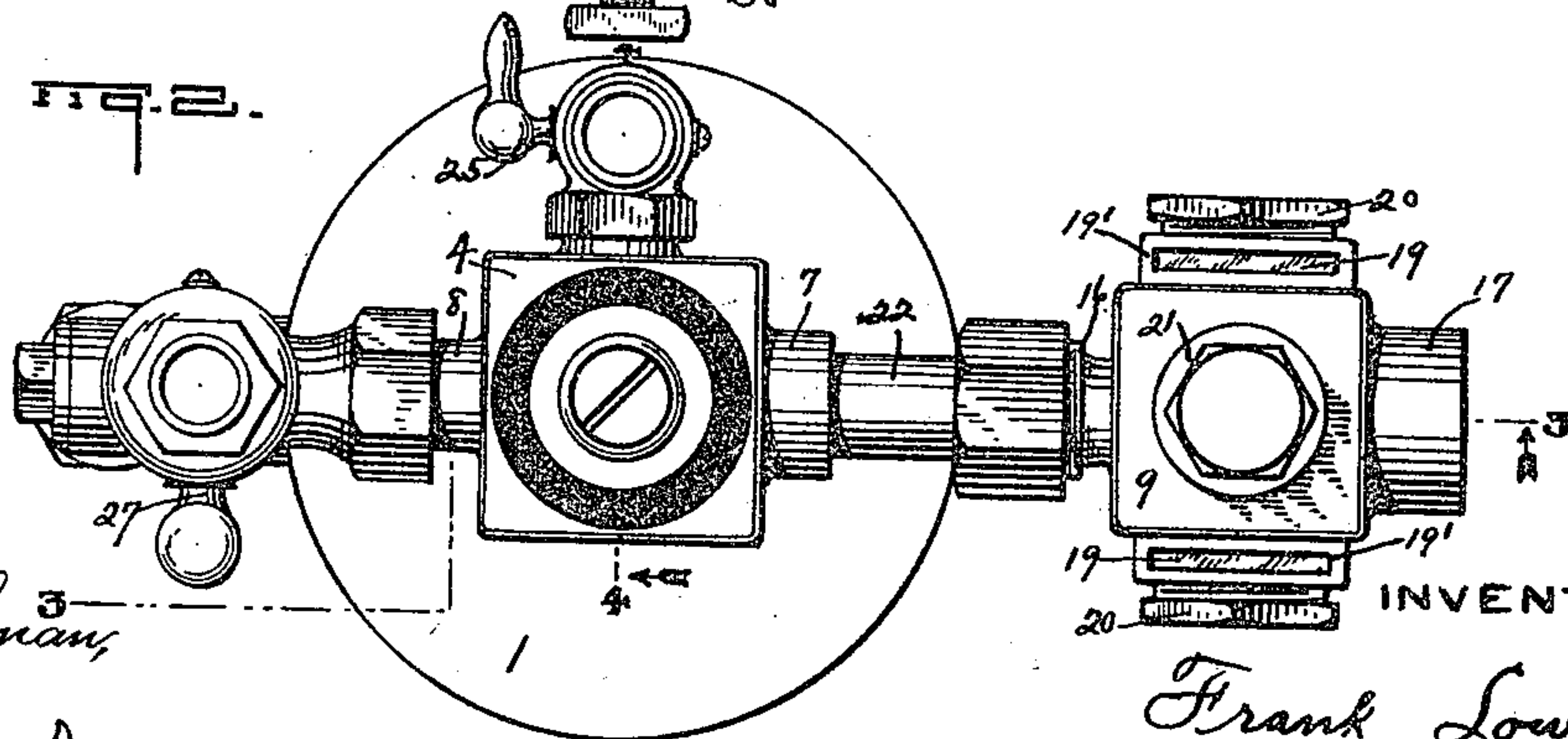


FIG. 2.



WITNESSES:

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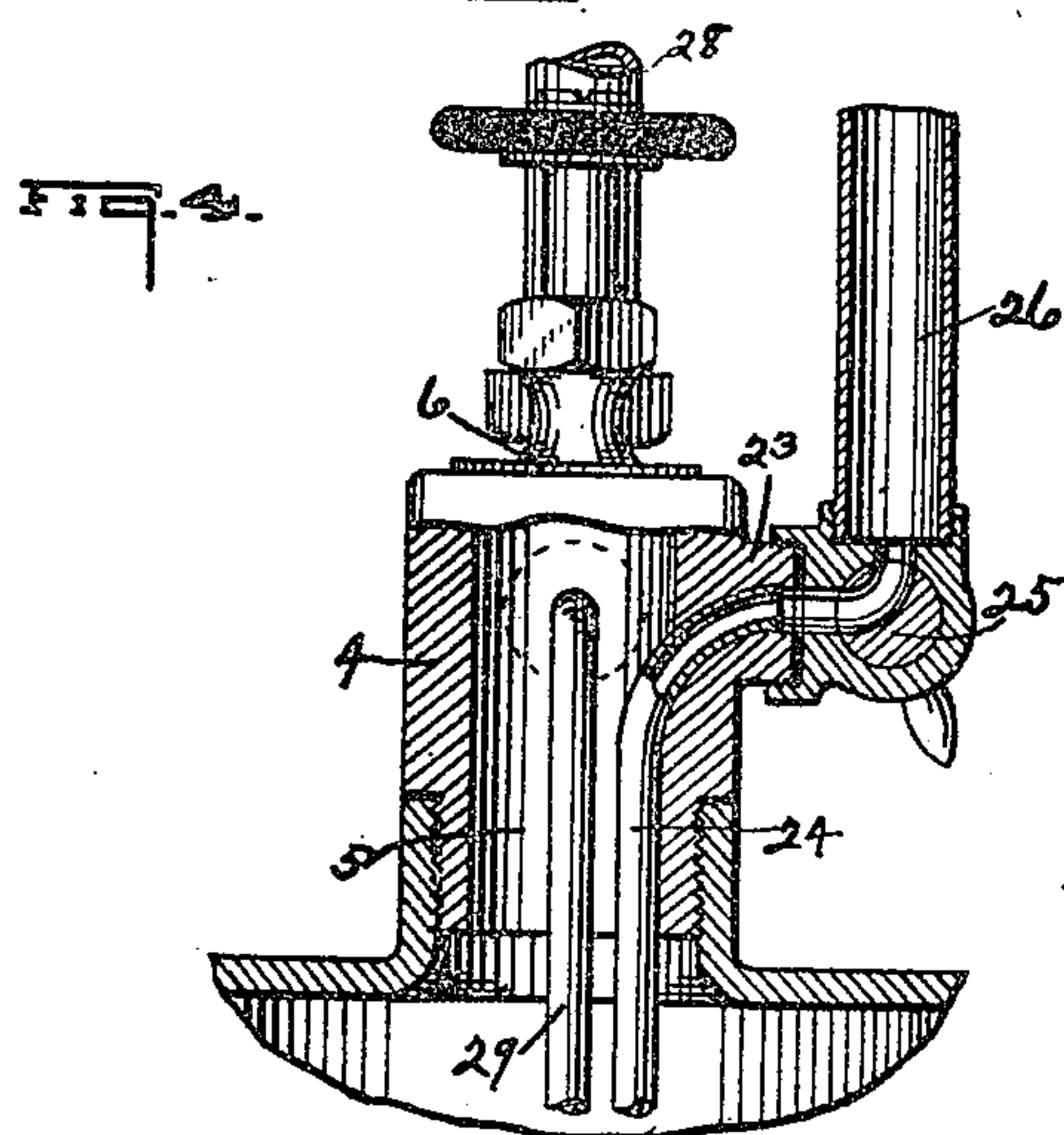
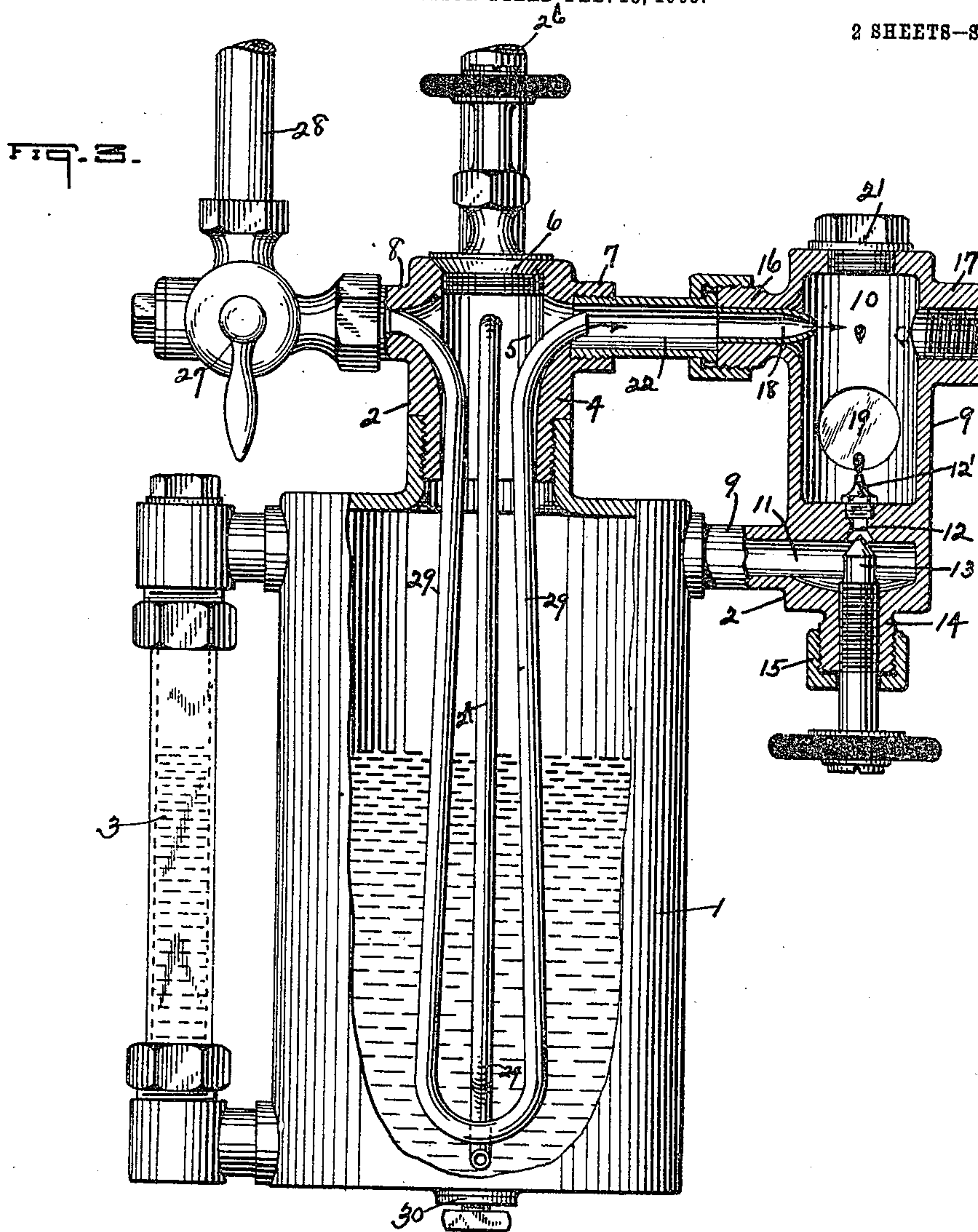
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UNITED STATES PATENT OFFICE.

FRANK LOWRY, OF STEUBENVILLE, OHIO, ASSIGNOR TO THE OHIO
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GREASE LUBRICATOR.

No. 803,296.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed February 18, 1905. Serial No. 246,233.

To all whom it may concern:

Be it known that I, FRANK LOWRY, a citizen of the United States, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Grease Lubricators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a new, novel, and useful improvement in that class of inventions known as "steam-actuated" lubricating-cups employing grease as a lubricant, being especially designed and intended to be connected with the steam-line supplying the steam chest and valves on an engine.

My device further has for its object the combination and arrangement of parts whereby the grease contained in the reservoir will be kept in a liquid or workable state at all times and prevented from freezing or thickening.

In the accompanying drawings in two sheets, forming a part of this specification, I have illustrated my invention by several views, in which—

Figure 1, Sheet 1, is a front elevation of the reservoir and head portion. Fig. 2 is a top plan view of the same. Fig. 3, Sheet 2, is a front elevation showing the head and reservoir in part section, being taken on line 3 3 of Fig. 2. Fig. 4 is a side sectional view of part of the head, taken on lines 4 4 of Fig. 2.

Numerals of reference designate like parts throughout the different views, in which the numeral 1 designates the reservoir portion of my device, 2 a removable head attached to the same, and 3 an index-glass arranged on the side of said reservoir.

Arranged in the centrally-disposed securing portion of the head 4 is a chamber 5, through the top of which is inserted a filling-plug 6. This chamber 5 has branch lines leading through the bosses 7 and 8, formed on both sides of the portion 4. Connected to the side of the reservoir near the top is a member 9, having a collecting-chamber 10 formed therein and a passage-way 11 communicating with the interior of the reservoir. Connecting said chamber 10 and the

passage-way 11 is a port 12, which affords a seat for the screw-valve stem 13, entering the member 9 through a boss 14, and a packing-nut 15. Over this port 12 is seated a nipple 12'.

Formed on both sides of the member 9 near the top are the bosses 16 and 17, the latter having a central opening therethrough which communicates with the chamber 10 and a pipe leading to the supply-line. Inserted through the boss 16 is a nipple 18, the inner end extending a slight distance into the chamber 10 and directly opposite the opening in the boss 17.

Arranged on both sides of this member 9 are sight-glasses 19 19, held in suitable pockets and secured in position by jam-nuts 20, through each of which is a central opening for the purpose of observing the action of the oil through the sight-feed line. A screw-plug 21 affords a means of getting at the interior of the chamber 10 for the purpose of removing the jet or cleaning the interior of said chamber.

Connecting the bosses 7 and 16 is a coupling 22, which communicates with the chamber 5 and nipple 18, one end thereof being a male connection which screws into the boss 7, while the opposite end is joined to the boss 16 by a union. Entering the chamber 5 through a boss 23, formed in the rear wall, is a condensing-tube 24, which passes on down through the head and reservoir portions nearly to the bottom of the latter. The upper end of this tube is in communication with an angle-valve 25, secured to the boss 23; and leading upward from this valve is a pipe 26, designed to be connected with the steam-line above.

Connected with the boss 8 is an angle-valve 27, from which extends a pipe 28, also leading to the steam-line above.

Internally arranged within the head and reservoir portions of my device is a radiating-tube 29, which passes down through the reservoir nearly to the bottom, one end being in communication through the boss 8 with the angle-valve 27, while the other end connects with the nipple 22.

A drain-valve 30 is provided in the bottom of the reservoir.

In the operation of my lubricating device the cup is placed at any suitable location near the engine, the boss 17 being connected with the steam-line supplying the steam-chest and

valves on the engine, and the angle-valves 25 and 27 connected by the pipes 26 and 28 with the steam-line at any convenient point above. The reservoir is then filled with grease through the plug 6, and the cup is ready for use. By first opening the valve 25, regulating the condensing-line, the steam from the steam-line will begin to condense in the pipe 24 and deposit in the bottom of the cup under the body of grease. Then by opening the valve 27 steam will pass down through the radiating-pipe 29, which can be constructed as shown in Fig. 3 or made in a coil form, and the condensation be deposited in the collecting-chamber 10. At the same time this radiating-pipe is reducing the grease contained in the reservoir to a liquid or workable state. By opening the valve 13 the liquid grease will appear at the nipple 12', where it will take form and by its own buoyancy and the hydrostatic pressure in the reservoir keeping the passage-way 11 filled, will pass upward through the body of water contained in the chamber 10 until it comes in line with the overflow from the radiator-discharge line 29, which will force the drop of grease directly into the supply-line leading to the engine. This drop of grease is not only forced into the supply-line by the hot discharge through the nipple 18, but it is expanded by coming in contact with the same, thus at the start deriving a benefit from each drop of grease before it is conveyed to the engine and giving more perfect lubrication.

It being essential that the chamber 10 be kept filled with water, so as to insure the proper working of the cup should any vacuum be produced from various causes arising—*i. e.*, an engine running after the steam is shut off—which may have a tendency to draw off the condensation, it will be prevented from so doing by the action of the overflow from the radiator-line 29 keeping said chamber 10 supplied.

The action of the grease can readily be seen through the sight-glasses 19, arranged at each side of the member 9. These glasses are flat, of a suitable thickness for convenience and cheapness, are cut square in order to fit into the pockets 19', formed at each side of the member 9, and are held in position by the hollow jam-nuts 20. The drain 30 affords a means of drawing off the contents of the cup when necessary.

Having thus fully shown and described the construction and workings of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grease lubricating device of the character described, having a reservoir portion to which is attached a removable head, a chamber formed in the centrally-disposed securing portions of said head; a condensing-tube adapted to communicate with the steam-line and entering said chamber and passing down through the reservoir portion nearly to

the bottom of the same; means for regulating the amount of condensation of steam through this tube; a heating-pipe passing through said reservoir and adapted to communicate with the steam-line and a sight-feed line communicating with the reservoir and supply-line leading to the engine; as, and for the purpose set forth.

2. In a grease lubricating device of the character described, having a reservoir portion to which is attached a removable head, a chamber formed in the centrally-disposed securing portion of said head, a condensing-tube adapted to communicate with the steam-line and entering said chamber and passing down through the reservoir portion nearly to the bottom of the same; means for regulating the amount of condensation of steam through this tube; a hollow member communicating with the reservoir and supply-line leading to the engine in which is formed a valve-regulated oil-channel having a passage-way connecting said passage with the collecting-chamber formed in said member; a nipple seated in said passage-way and means for heating the contents of the reservoir.

3. In a grease lubricating device of the character described having a reservoir portion to which is attached a removable head, a chamber formed in the centrally-disposed securing portion of said head; a condensing-tube adapted to communicate with the steam-line and entering said chamber and passing down through the reservoir portion nearly to the bottom thereof; means for regulating the amount of condensation of steam through this tube; a hollow member communicating with the reservoir and supply-line leading to the engine in which is formed a valve-regulated oil-channel having a passage-way connecting said channel with the collecting-chamber formed in said member; a nipple seated in said passage-way; a heating-tube passing through the chamber formed in the centrally-disposed securing portion of the head and extending down to a point adjacent the bottom of the reservoir, one end being in communication with a valve-regulated pipe adapted to communicate with the steam-line and the other end entering a tube connecting the oil-chamber with the sight-feed line; a nipple communicating with said tube and extending into the collecting-chamber opposite the supply-line and means for filling the reservoir through the head portion as, and for the purpose set forth.

4. In a grease lubricating device of the character described, the combination with a reservoir having a head portion connected therewith and condensing means adapted to communicate with the steam-line and extending through the head and reservoir portions to a point adjacent the bottom of the latter, of a heating means passing through the chamber formed in the centrally-disposed securing portion and extending down nearly to the

bottom of the reservoir, one end being in communication with a valve-regulated pipe adapted to communicate with the steam-line, and the other end entering a tube connecting the oil-chamber with the sight-feed line; and a nipple communicating with said tube and extending into the collecting-chamber opposite the supply-line; as, and for the purpose set forth.

10 5. In a lubricator, the combination with a reservoir; of a heating-pipe extending through the reservoir; a sight-glass, said pipe communicating with the interior of the reservoir through the sight-glass; a condenser-pipe
15 opening into the reservoir and means within said pipes for controlling the passage of steam therethrough.

6. In a lubricator, the combination with a reservoir, of a tubular extension thereon and
20 communicating therewith; means for conducting a heating medium thereto; a heating-pipe extending through the reservoir from the extension; a sight-glass, said heating-pipe communicating with the reservoir through the
25 sight-glass, and a valved condenser opening into the reservoir.

7. In a lubricator, the combination with a reservoir, of an extension thereon and having

a passage communicating with the reservoir, said passage having an enlarged portion, 30 means for conducting a heating medium to the passage; a heating-pipe extending through the reservoir from the extension, the enlarged portion of the passage forming a chamber around said pipe; a sight-glass constituting 35 a means of communication between the heating-pipe and reservoir and a valved condenser-pipe opening into the reservoir.

8. In a lubricator, the combination with a reservoir, of an extension thereon and having 40 a passage of varying size therein, valved means for conducting a heating medium to the passage, a heating-pipe extending from the passage through the reservoir, the largest portion of the passage forming a chamber about 45 the heating-pipe; a sight-glass constituting a means of communication between the heating-pipe and reservoir and a valved condenser-pipe opening into the reservoir.

In testimony whereof I affix my signature in 50 presence of two witnesses.

FRANK LOWRY.

Witnesses:

E. L. MAXWELL,

BENJAMIN F. PRENTISS.