

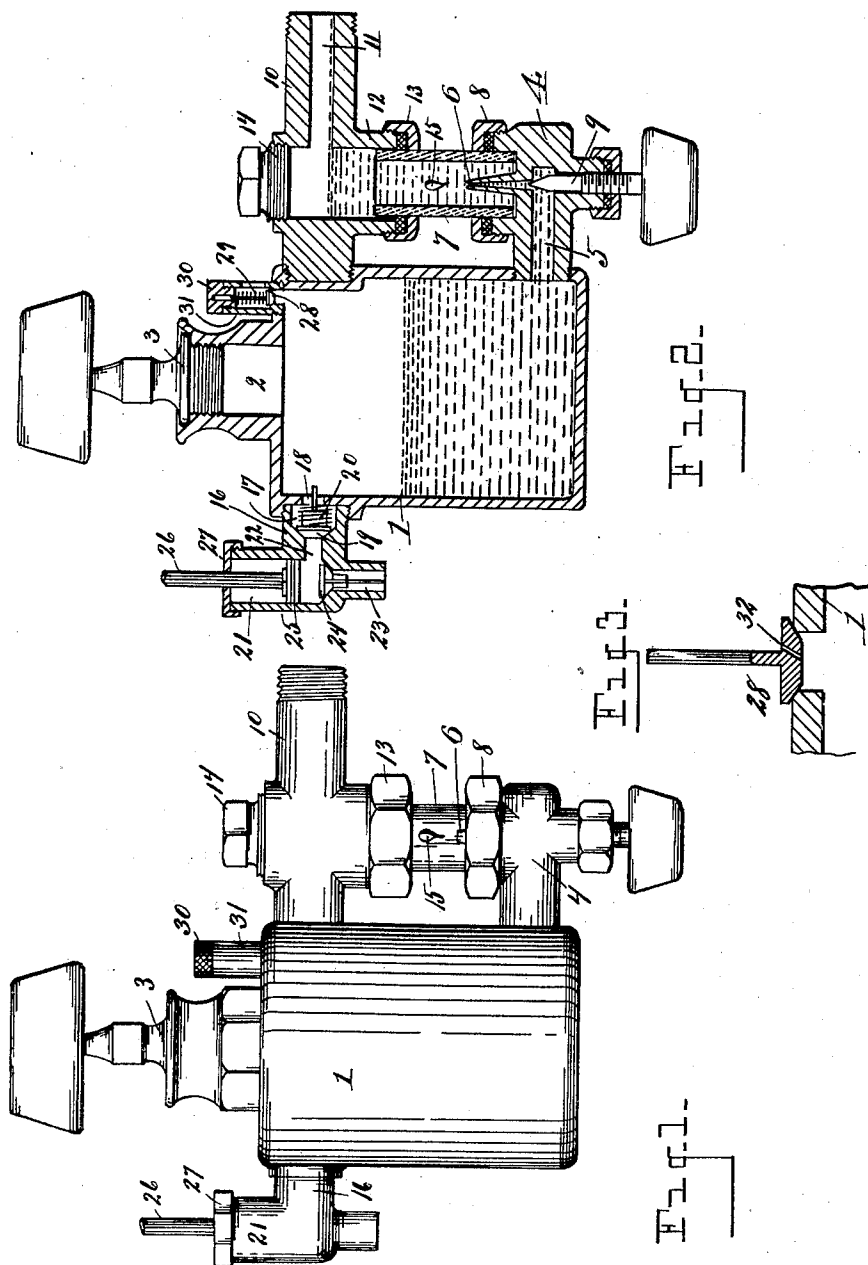
No. 756,286.

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D. H. ROBERTS.
PRESSURE SIGHT FEED LUBRICATOR.

APPLICATION FILED DEC. 30, 1901.

NO MODEL.



WITNESSES.

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PRESSURE SIGHT-FEED LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 756,286, dated April 5, 1904.

Application filed December 30, 1901. Serial No. 87,716. (No model.)

To all whom it may concern:

Be it known that I, DUGALD H. ROBERTS, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Pressure Sight-Feed 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.

This invention relates to pressure sight-feed lubricators; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide simple and efficient means for maintaining an air or fluid pressure within the oil-cup of the lubricator sufficient at all times to feed the oil to the steam chest or cylinder of the engine against boiler-pressure, the arrangement being such as to enable the operator to see the oil as it passes from the cup to the part to be lubricated.

The above object is attained by the device illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a lubricator embodying my invention. Fig. 2 is a vertical section through the cup of the lubricator, the air-pump, the sight-feed glass, and discharge-arm. Fig. 3 is an enlarged detail of the relief-valve, partly in section.

Referring to the characters of reference, 1 designates the body of the oil-cup, into which oil may be poured through the opening 2 in the top thereof, closed by the screw-plug 3. Screwed into the body of the cup at the bottom is a bracket 4, having a duct 5, which communicates with the interior of the cup and through which oil is adapted to pass to the nipple 6, standing vertically from said bracket within the lower end of the sight-feed glass 7,

which rests upon the bracket 4 and is secured by the gland 8. A needle-point valve 9 screws into the bracket 4 from the bottom and controls the passage of oil to the nipple 6. The discharge-arm 10 is screwed into a threaded socket in the body of the cup near its upper end and is provided with an oil-discharge port 11, through which the oil is adapted to pass to the part to be lubricated, said discharge-arm being suitably connected to the steam-pipe or steam-chest of the engine, (not shown,) as will be well understood in the art. The discharge-arm is provided with a depending coupling 12, adapted to receive the upper end of the feed-glass 7, which is secured in said coupling by a gland 13. A screw-plug 14 in said discharge-arm affords means for placing the feed-glass 7 in position. The discharge-arm being connected with the steam-pipe or steam-chest of the engine becomes filled with steam, so that the sight-feed glass and the opening in said arm accumulates water of condensation, through which the oil is adapted to rise as it is discharged in drops from the nipple 6.

Connected with the upper end of the oil-cup is a bracket-arm 16, having a valve-chamber 17 therein, which communicates through the opening 18 with the interior of the cup. Seated in said valve-chamber is a valve 19, opening inwardly and held normally to its seat by a spring 20. Mounted upon the bracket-arm 16 is a pump-cylinder 21, which communicates with the valve 19 through a port 22. Opening through the bottom of the cylinder to the atmosphere is a port 23, controlled by the check-valve 24, opening upward. Within the pump-cylinder is a piston-head 25, connected to a piston-rod 26, which passes through the head 27 of said cylinder and is connected to a moving part of the machine or engine. (Not shown.) It will now be understood that a reciprocation of the piston of the pump will draw air into the pump-cylinder past the valve 24 and force said air into the chamber of the oil-cup past the valve 19, by which means sufficient pressure is cre-

ated in the oil-cup to feed the oil therefrom through the nozzle 6 and out the discharge-arm 10 against the pressure of the boiler. The operation of the air-pump will be continuous, and to avoid creating an excessive pressure in the oil-cup a relief-valve 28 is employed, which is normally held to its seat by a spring 29, bearing against the upper end of a screw-plug 30 in the casing 31, that incloses said valve. The tension of the spring 29 is so regulated as to maintain within the oil-cup sufficient pressure to cause the oil to feed regularly to the engine, but will allow the valve 28 to unseat and the air to escape from the oil-cup when the pressure rises above what is required to properly feed the oil, whereby an excess of pressure within the oil-cup is obviated. To prevent the oil from continuing to flow after the engine has been stopped, by reason of the stored pressure contained in the oil-cup, a small vent-opening 32 is formed through the relief-valve 28, through which the air contained in the top of the oil-cup can escape to relieve the pressure and prevent the flow of oil from the discharge-arm of the lubricator when the engine is not running.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lubricator, the combination of an oil-cup, a sight-feed glass, an oil-discharge arm communicating therewith and with a source of steam-pressure, means for maintaining air-pressure within the oil-cup, a relief-valve connected with the oil-cup to prevent excess pressure therein and a small continuously-open vent communicating with the air-space for al-

lowing the air under pressure to escape from the oil-cup when at rest.

2. In a lubricator, the combination of an oil-cup having an oil-discharge port and a sight-feed glass communicating with said port and with a source of steam-pressure, an air-pump communicating with said oil-cup and adapted to force air into the same, a relief-valve adapted to prevent the accumulation of excess pressure within the oil-cup and an air-vent through said valve to relieve the oil-cup of its contained pressure when the engine is not in operation.

3. In a lubricator, a reservoir having a feed-outlet for the lubricant, a conduit adapted to connect said reservoir with a source of elastic fluid under pressure, a relief-valve in communication with the reservoir for preventing excess pressure therein, and a time-vent for the escape of elastic fluid from the reservoir to the outer air.

4. In a lubricator, a reservoir having a feed-outlet for the lubricant, a sight-feed glass connected therewith and with the part to be lubricated, a conduit adapted to connect said reservoir with a source of elastic fluid under pressure, a relief-valve in communication with the reservoir for preventing excess pressure therein, and a time-vent for the escape of elastic fluid from the reservoir to the outer air.

In testimony whereof I sign this specification in the presence of two witnesses.

DUGALD H. ROBERTS.

Witnesses:

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