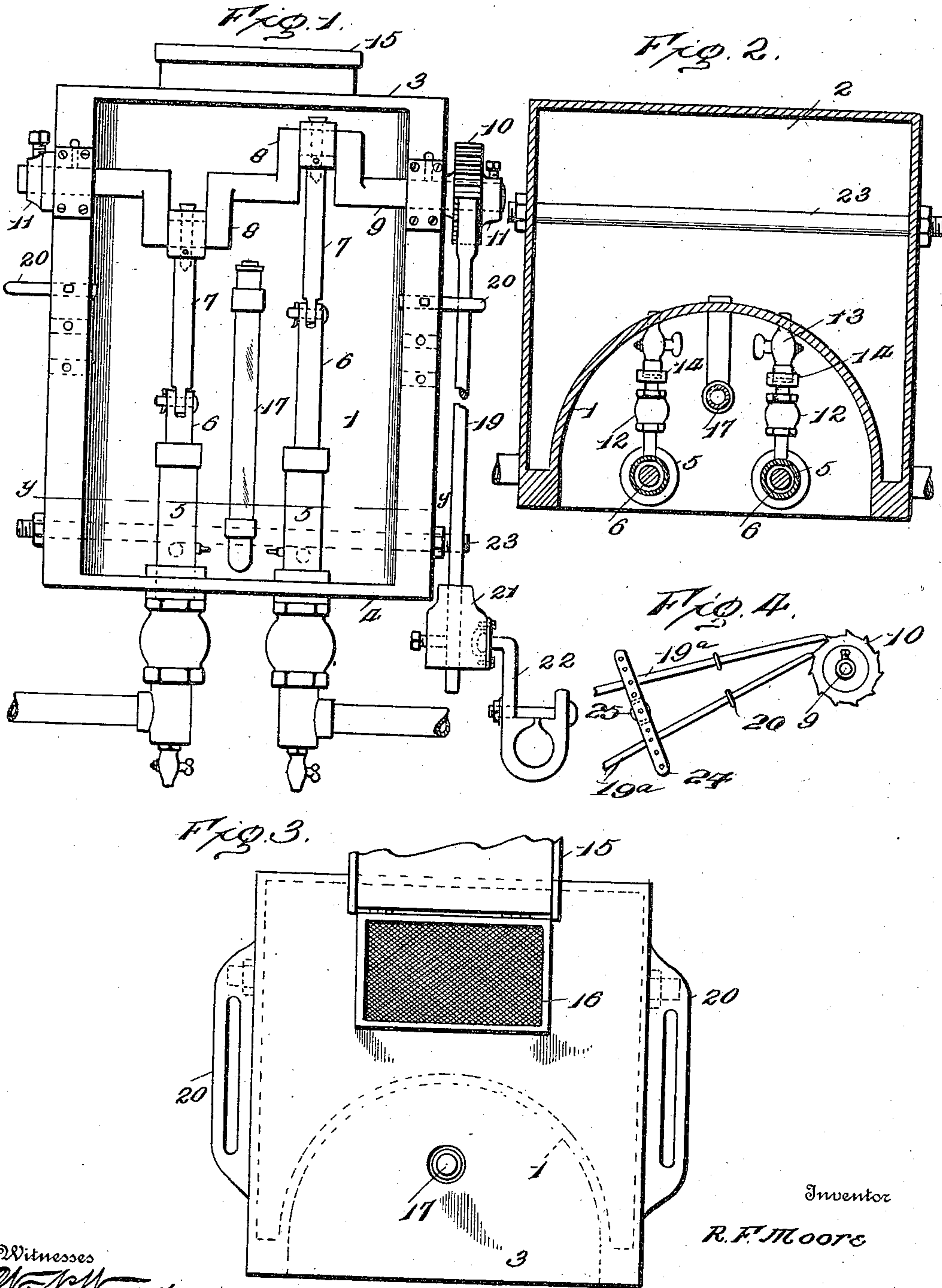


No. 886,062.

PATENTED APR. 28, 1908.

R. F. MOORE.
LUBRICATOR.

APPLICATION FILED AUG. 12, 1907.



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UNITED STATES PATENT OFFICE.

ROBERT F. MOORE, OF WILLISTON, NORTH DAKOTA.

LUBRICATOR.

No. 886,062.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed August 12, 1907. Serial No. 388,204.

To all whom it may concern:

Be it known that I, ROBERT F. MOORE, citizen of the United States, residing at Williston, in the county of Williams and State of North Dakota, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

This invention has for its object to devise a force feed lubricator designed chiefly for use on all traction engines single or compound and which admits of access being had at all times to the working parts, and which insures a positive supply of the lubricant to the part or parts to be oiled.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a view in elevation of a lubricator embodying the invention. Fig. 2 is a horizontal section on the line $y-y$ of Fig. 1. Fig. 3 is a top plan view of the lubricator body, the cover to the feed opening being thrown open and having a portion broken away. Fig. 4 is a modification, showing two actuators coöperating with the ratchet wheel fast to the crank shaft.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The body of the lubricator is provided in one side with a hollow or depression 1 in which is arranged force feed mechanism, sight gage and actuating means. The said body may have any outline and be of any size or capacity, and as illustrated is of rectangular formation and formed with a chamber 2 in which is placed a quantity of oil to be fed in a positive manner when the lubricator is in operation. The depression or hollow 1 is half round in horizontal section and is closed at its top and bottom by plates 3 and 4. Oil pumps 5 are secured to the bottom plate 4 and are passed through openings formed therein and are clamped to said plate

between upper and lower shoulders or securing means. The plungers 6 are connected by pitmen 7 to crank portions 8 of a crank shaft 9, the latter being mounted in bearings at opposite sides of the depression or hollow 1. A ratchet wheel 10 is secured to an end portion of the crank shaft 9 and is adapted to engage with the outer side of the body and limit the movement of the crank shaft in one direction. A collar 11 is secured to the opposite end portion of the crank shaft 9 and engages with the opposite side of the body and in conjunction with the ratchet wheel 10 prevents longitudinal movement or play of the crank shaft. The pump cylinders or barrels are connected with the body of the lubricator by means of fittings, the same comprising a check valve 12, cut off 13 and a coupling or union 14. The pump barrels are connected with the lower portion of the body so as to draw off all or nearly all the oil or lubricant contained therein. An opening is formed in the top of the body and is adapted to be closed by means of a cover 15. A screen 16 is fitted in the opening so as to remove impurities from the oil when supplying the same to the body. The gage 17 for determining the height of the oil in the body of the lubricator, may be of any construction and is connected to said body in the usual manner. An opening is formed in the upper flange 3 to admit of the glass of the gage 17 being placed in position in the metal fittings or connections by means of which the gage is held in place.

An actuator 19 coöperates with the ratchet wheel 10 to turn the crank shaft 9 by means of which the pumps 5 are operated. The actuator 19 consists of a rod having its upper end shaped to coöperate with the teeth of the ratchet wheel 10, said rod being directed in its movements by a suitable guide 20 detachably connected to the body of the lubricator so as to be replaced by a guide of any size according to the degree of movement to be imparted to the actuator 19. A clip 21 is adjustably connected to the lower end of the rod or actuator 19 and a coöperating clip 22, having swivel connection to the clip 21, is adapted to be connected to the valve stem or other moving part of the engine to which the lubricator is applied.

In operation, oscillatory movement is imparted to the rod or actuator 19 which in turn coöperates with the teeth of the ratchet

wheel 10 to turn the crank shaft 9, with the result that the plungers 6 are reciprocated in the cylinders or barrels of the pumps 5, thereby drawing a supply of oil from the reservoir or chamber of the body and forcing the same to the part to be lubricated.

A pipe 23 passes through the chamber 2 and is located near the bottom thereof, and a heating medium is adapted to pass through said pipe for maintaining the lubricant in fluid condition in cold weather. The pipe 23 may be connected with the exhaust of the engine so as to utilize the spent steam, or may be coupled to any part to admit of either hot water, steam or other medium passing therethrough to warm the lubricant or prevent congealing thereof in extreme cold weather.

In the construction shown in Fig. 4 two actuators 19^a are provided to cooperate with the ratchet wheel 10, each operating through a guide 20 and having adjustable connection with an oscillatory bar 24 pivoted at 25. Movement may be imparted to the bar 24 in any manner and as the same turns, one of the actuators 19^a advances and the other returns to obtain a new grip upon the ratchet wheel 10 so that in the next oscillatory movement of the bar 24, the actuator previously advanced is withdrawn and the one before returned is advanced to move the ratchet wheel. It will thus be understood that the actuators 19^a alternately operate upon the ratchet wheel 10 to impart a continuous rotary movement thereto and to the shaft 9.

Having thus described the invention, what is claimed as new is:

1. In a force feed lubricator, the combination of a body chambered to contain a quantity of lubricant and having a hollow or depression in a side thereof, a pump located in said depression and having connection with the chamber, a shaft extended across the depression and journaled in bearings applied to the body at opposite sides of said depression, said shaft having a crank portion to operate in the depression and having connection with the pump, and means exterior to the

body for imparting an intermittent movement to the shaft.

2. In a force feed lubricator, the combination of a chambered body, having a depression in a side, a series of pumps located within said depression and secured to a wall closing the end thereof, each of said pumps having connection with the chamber, a sight gage also located in the depression and having connection with the chamber, a shaft extended across the opposite end portion of the depression and journaled bearings applied to the body at opposite sides of the depression thereof, said shaft having a series of cranks arranged at different relative angles and having connection with the respective pumps, and means exterior to the body and cooperating with said shaft to impart an intermittent movement thereto.

3. The herein described force feed lubricator, consisting of a chambered body having a half-round depression in a side, pumps secured to an end wall of said depression and arranged within the latter, a sight gage arranged between the pumps and located within the depression and having connection with the chamber of the body, a compound crank shaft extended across the depression and mounted in bearings of the body at opposite sides thereof, connecting means between the crank portions of said crank shaft and the pumps, a ratchet wheel fast to a projecting end of the crank shaft, an oscillatory actuator cooperating with said ratchet wheel, a guide secured to the body and holding said actuator in proper position, a clip having adjustable connection with said actuator, and a second clip having swivel connection with the first-mentioned clip and adapted to connect it with a moving part from which power is derived for operating the lubricator.

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

ROBERT F. MOORE. [L. s.]

Witnesses:

F. M. SCHAEFER,
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