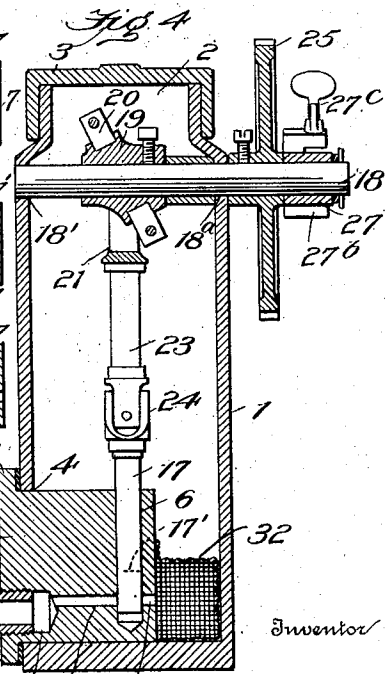
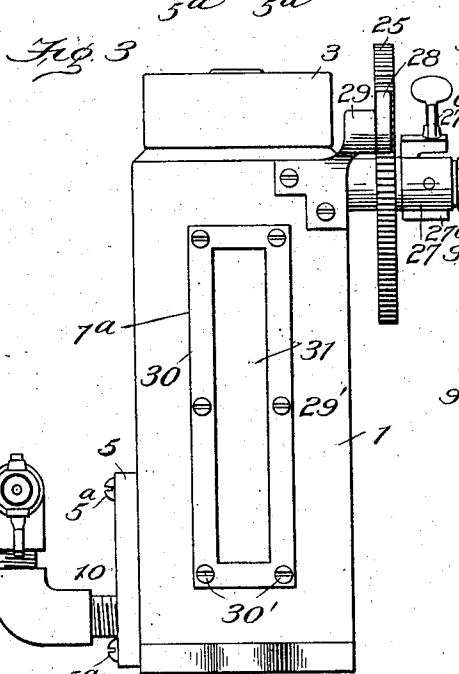
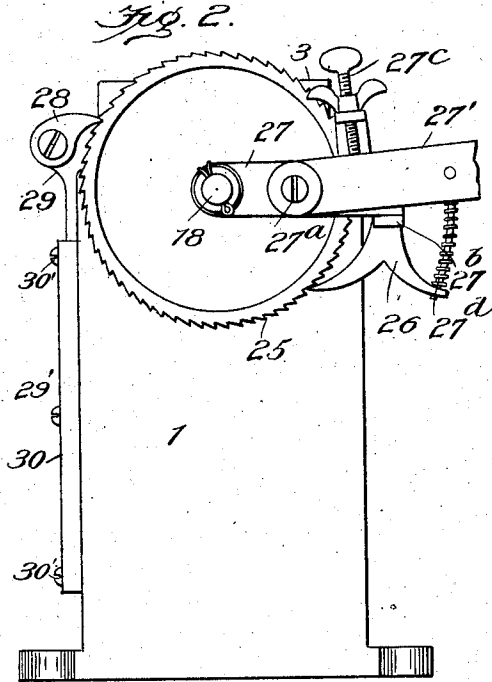
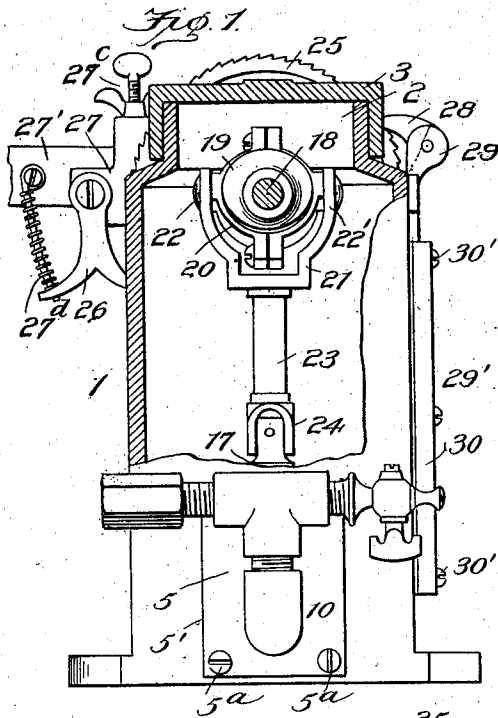


No. 827,402.

PATENTED JULY 31, 1906.

A. A. STELTING.
LUBRICATOR.

APPLICATION FILED SEPT. 15, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT A. STELTING, OF MADISON, WISCONSIN, ASSIGNOR TO THE
MADISON KIPP LUBRICATOR COMPANY, OF MADISON, WISCONSIN,
A CORPORATION.

LUBRICATOR.

No. 827,402.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed September 15, 1904. Serial No. 224,605.

To all whom it may concern:

Be it known that I, ALBERT A. STELTING, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in force-feed lubricators, particularly of the type adapted to feed heavy lubricants under high pressures to the cylinders of steam-engines and for similar purposes.

15 Figure 1 is a view, partly in side elevation and partly in section, of a lubricator embodying my improvements. Fig. 2 is a side elevation of the lubricator looking from the opposite side to that in Fig. 1. Fig. 3 is an end elevation of the lubricator. Fig. 4 is a vertical central section of the same. Figs. 5, 6, and 7 are sectional views through the lubricant-delivery duct, showing different positions of the plunger relative thereto.

25 In the drawings, 1 represents as an entirety the oil-reservoir. It may be of any desired shape or size. 2 indicates an opening at the top thereof, and 3 indicates a cover for the same.

30 4 is an opening in one of the walls of the reservoir and preferably near the bottom thereof. 5 indicates a block adapted to fit into said opening and provided with a flange 5'. 5^a represents screws for securing the said flange to the wall of the oil-reservoir.

35 6 is a vertically-arranged hole in the block 5, preferably cylindrical in form and arranged so as to be approximately in the center of the oil-reservoir when the block 5 is fitted into place.

40 7 is a horizontally-arranged duct in the block 5, communicating with the hole 6 therein and also adapted to communicate with the interior of the oil-reservoir. 8 is a horizontal duct communicating at its inner end with the hole 6 and at its outer end with an enlarged passage-way 9 in the said block 5, the duct 8 being arranged eccentrically of the passage-way 9.

50 10 is a nipple or connection fitted detachably into the hole 9.

The hole 6 in the block 5 serves as a cylinder for the oscillating reciprocating plunger 17. This plunger is longitudinally slotted in

its lower end, as indicated at 17', the slot 55 being arranged at one side of the axis of the plunger.

18 is a shaft extending horizontally through the oil-reservoir near the top thereof and having bearings 18' 18^a in the walls of said 60 reservoir. 19 is an eccentric secured to said shaft and arranged diagonally thereon, so that the periphery of the eccentric travels in planes diagonal to the axis of the shaft.

20 indicates the eccentric-straps and 21, a 65 yoke, the arms of which are connected to the said eccentric-straps at opposite sides of the eccentric, as indicated at 22 22'. 23 is a connecting-rod secured to said yoke and extending downwardly therefrom.

24 indicates a universal coupling or joint 70 connecting the plunger 17 with the connecting-rod 23.

The mechanism for operating the shaft 18 may be of any well-known form and may be 75 adapted either to impart continuous or intermittent motion to the said shaft. In the drawings I have shown a train of devices for imparting intermittent motion to the said shaft. This train consists of the ratchet-wheel 80 25, secured to the shaft, the pawl 26, adapted to engage with the teeth on the said ratchet, the pawl-carrier 27, mounted on the said shaft, and the carrier-actuating rod 27', pivoted to the carrier at 27^a and adapted to have its 85 outer end connected with a moving part of the engine, so as to receive oscillating motion therefrom. The rod 27' is arranged to engage with the lug 27^b on said carrier to advance the pawl.

27^c is an adjustable thumb-screw on the 90 pawl-carrier adapted to regulate the play of the actuating-rod 27' in order to control the number of teeth which the pawl advances at each reciprocation.

27^d is a spring interposed between the pawl 95 and the actuating-rod 27' and adapted to hold the pawl normally in engagement with the ratchet-wheel teeth.

28 is a locking-pawl pivotally mounted on 100 the bracket 29, secured to the reservoir.

In order to enable the operator to tell the height of the lubricant in the oil-reservoir, I have provided a window 29' in one of the walls thereof. This window may be made in 105 any well-known way. In the drawings it is shown as consisting of a metallic frame 30, having secured therein a piece of glass or other

transparent material 31, the frame being secured by screws 30' to the reservoir-wall and arranged to surround the aperture 1^a therein, so as to prevent the escape of oil through said aperture.

32 is a strainer of wire mesh surrounding the opening between the oil-duct 7 and the interior of the oil-reservoir.

It will be noted that the principal operative parts of my mechanism are located within the oil-reservoir, where they are well lubricated and are protected from dirt, dust, and the elements and from injury due to the rough handling to which many of the engines, such as traction-engines upon which these lubricators are placed, are subjected.

The operation of the oil pumping and forcing devices will be readily understood. The eccentric 19 causes both a reciprocatory and oscillatory motion to be simultaneously imparted to the plunger 17. On the upstroke of the said plunger the slot 17' therein is so turned as to establish communication between it and the interior of the oil-reservoir through the duct 7 and to cut off communication between the slot and the oil-delivery duct 8. During this stroke oil is therefore drawn into the cylinder 6. On the downstroke of the plunger it is turned so as to cut off communication between the slot therein and the reservoir and to establish communication between the cylinder 6 and the oil-delivery duct 8 and to force the oil under pressure out through said duct.

What I claim is—

1. In a lubricator, the combination of an oil-reservoir having side, end, and bottom walls, a block having a vertically-arranged oil-cylinder therein, said block resting against the bottom wall of said oil-reservoir and detachably secured to one of the side walls of the oil-reservoir, a vertically-arranged plun-

ger in said oil-cylinder, there being an oil-inlet duct leading from the interior of said oil-cylinder to the interior of said reservoir and an oil-outlet duct leading outward from the interior of said oil-cylinder, and power-transmitting means arranged within said oil-reservoir for actuating said plunger.

2. In a lubricator, the combination of an oil-reservoir, a block having a vertically-arranged oil-cylinder therein, said block being detachably connected to one of the vertical walls of said oil-reservoir, a plunger in said oil-cylinder, power-transmitting means within the oil-reservoir for actuating the plunger, there being an oil-inlet duct leading from the interior of said oil-cylinder to the interior of said reservoir, and an oil-outlet duct leading from the interior of said oil-cylinder to the exterior of the said oil-reservoir.

3. In a lubricator, the combination of an oil-reservoir, having a lateral opening through one of its vertical walls near the bottom thereof, a block extending through said opening into the interior of said oil-reservoir and detachably secured to said oil-reservoir with a fluid-tight joint, and having a hole therein arranged parallel to the axis of the reservoir and an outlet extending from said hole to the exterior of the said block, a plunger fitted to and adapted to operate in said hole, the power-shaft extending through said oil-reservoir and mounted in bearings in the walls thereof, and means arranged between said bearings and connecting said shaft with said plunger adapted to impart a reciprocating motion to the latter.

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

ALBERT A. STELTING.

Witnesses:

JOSEPH M. BOYD,
FRANK W. HOYT.