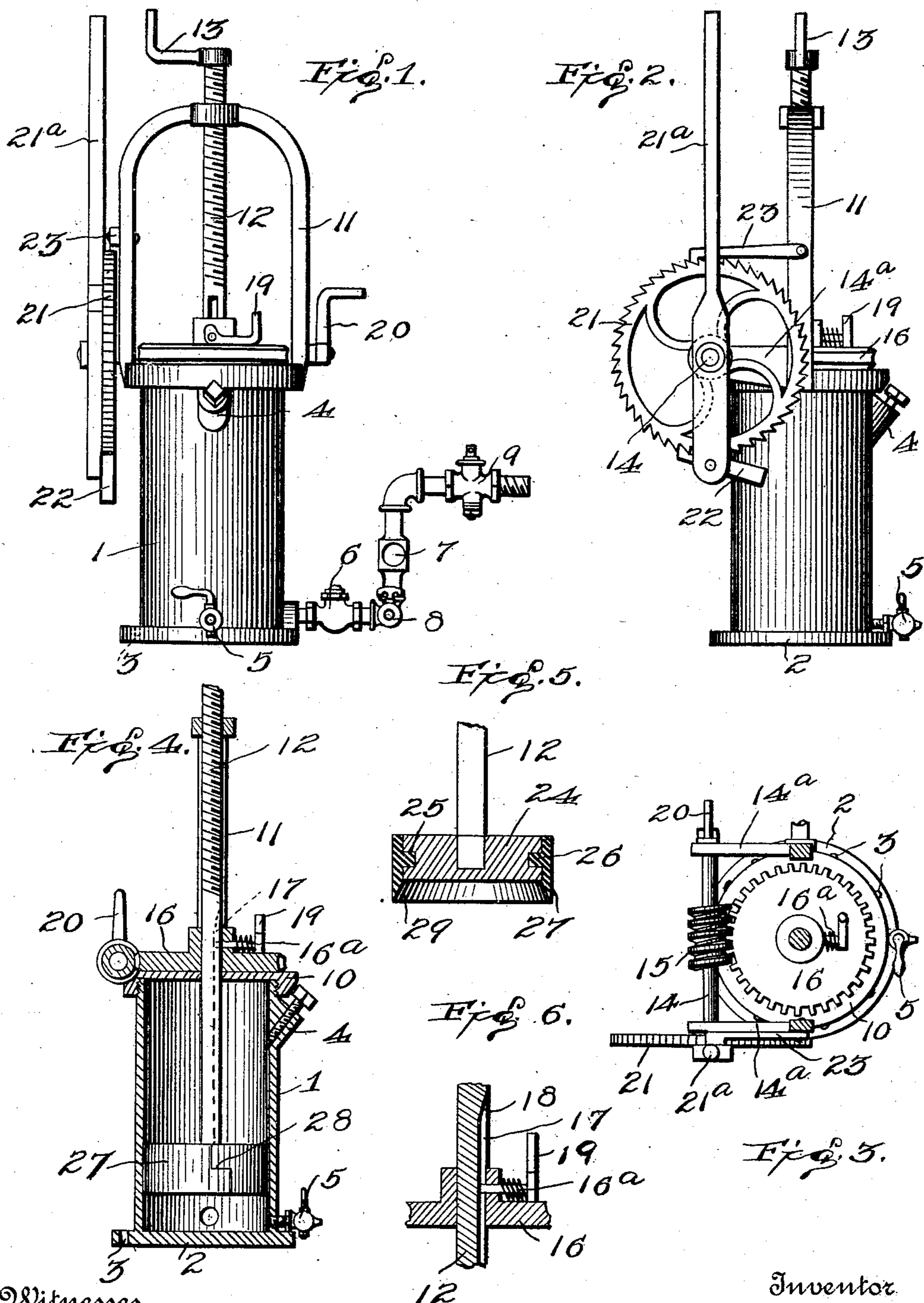


No. 842,710.

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O. SANDERS.
LUBRICATOR FOR STEAM ENGINES.
APPLICATION FILED APR. 25, 1906.



Witnesses
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UNITED STATES PATENT OFFICE.

OZRO SANDERS, OF WINCHESTER, INDIANA.

LUBRICATOR FOR STEAM-ENGINES.

No. 842,710.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed April 25, 1906. Serial No. 313,693.

To all whom it may concern:

Be it known that I, OZRO SANDERS, a citizen of the United States, residing at Winchester, in the county of Randolph and State of Indiana, have invented certain new and useful Improvements in Lubricators for Steam-Engines; and I do hereby 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.

My invention relates to improvements in lubricators for use particularly on steam-engines.

It has for its object to provide an improved lubricator of the class known as "oil-force-feed followers" having means to automatically throw the plunger-shaft out of connection with the driving-gears before the plunger strikes the bottom of the cylinder or cup.

Other objects of the invention will be apparent from the following description.

The invention consists in the features of construction and combinations of parts hereinafter described, and more particularly pointed out in the claims concluding this specification.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a front elevation of the device. Fig. 2 is a side elevation thereof. Fig. 3 is a plan view with the upper portions of the plunger-shaft and the arm forming a bearing for said shaft broken away. Fig. 4 is a broken vertical sectional view of the cylinder or cup and plunger, the latter being shown in elevation. Fig. 5 is an enlarged broken sectional view of the plunger; and Fig. 6 is an enlarged broken detailed view of a portion of the plunger-shaft, showing the bevel at the upper end of the groove therein.

Referring more particularly to the drawings, 1 is the cup or cylinder, which preferably has an extending bottom flange 2, with bolt-holes 3 for securing it to the machinery in connection with which it is to be used. Said cup is provided with a filling-opening 4 near its top and a drip-cock 5 near its bottom for drawing off the contents of the cup and for letting in air below the piston when it is being raised. The cup or cylinder has another opening near its bottom to which is connected a pipe carrying a check-valve 6 to hold back pressure from the boiler. The pipe from the oil-cup also carries a sight-gage 7, a drip-cock 8, arranged between said

check-valve and gage, and a cut-off valve 9. Said pipe is to be connected with the apparatus to be oiled—as, for instance, the steam-pipe from the boiler to the engine. By closing the cut-off valve and opening the drip-cock 8 water may be let out of the sight-gage in cold weather.

The top plate 10 is preferably screwed upon the cup or cylinder and carries upwardly-extending arms 11, forming a bearing at their meeting-point for the plunger-shaft 12. Said shaft is screw-threaded, as is also the bearing whereby said shaft will be raised or lowered by being turned in said bearing. A handle 13 may be applied to the upper end of said shaft for the purpose of turning the same. Said shaft may, however, also be revolved by means of a transverse shaft 14, having its bearings in arms 14^a on the top plate and carrying a worm 15, meshing with a worm-gear 16 on said shaft. Said worm-gear has a spring-pressed pin 16^a, normally engaging a longitudinal groove 17 in the plunger-shaft. The upper end of said groove is beveled, as at 18, whereby the pin riding up the incline is released from engagement with the shaft before the plunger strikes the bottom of the cylinder. The pin is provided with a handle 19, whereby the former may be withdrawn from the slot in the shaft by hand. The transverse shaft 14 may be operated by a handle 20 on one end or a ratchet-wheel 21 on the other end. Said ratchet-wheel may be driven by any suitable means and is preferably connected with the piston-rod of the engine whereby the upright rod 21^a, pivoted on the shaft 14, is reciprocated and the pawl 22, carried at the lower end of said rod, is operated to revolve said wheel. A stop-pawl 23 is pivoted on one of the arms 11, extending up from the top plate of the cylinder or cup.

Referring especially to Fig. 5, the plunger or piston-head 24 is formed with a circumferential groove 25 in its edge, into which groove a projecting bead 26 on the packing-ring 27 projects. Said packing-ring is made of spring-steel, having its ends lapping one another, as at 28. Said ring extends downward beyond the bottom of the plunger or piston head and is beveled outward at 29, whereby its tendency on the downward stroke of the plunger will be to spring out and always hug the sides of the cylinder. This piston-head and packing-ring will not let water pass it, much less thick or heavy oil.

It is obvious that my lubricator may be used on gas or gasoline engines, as well as on steam-engines.

I claim—

5 1. A lubricator comprising a cylinder, a plunger or piston in said cylinder, a screw-threaded piston-rod engaging a stationary screw-threaded bearing above the cylinder, a gear mounted on said rod, a spring-pressed
10 pin mounted on said gear and normally engaging a groove or way in said piston-rod and means to rotate said gear.

2. A lubricator comprising a cylinder, a plunger or piston in said cylinder, a screw-
15 threaded piston-rod engaging a stationary screw-threaded bearing above the cylinder, a gear mounted on said rod, a spring-pressed pin mounted on said gear and normally en-
20 gaging a groove or way in said piston-rod and means to rotate said gear, the upper end of said groove being beveled outward to the surface of said rod whereby said shaft is automatically thrown out of connection with said gear.

25 3. A lubricator comprising a cylinder, a plunger or piston in said cylinder, a screw-threaded piston-rod engaging a stationary screw-threaded bearing above the cylinder, a gear mounted on said rod, a spring-pressed
30 pin mounted on said gear and normally engaging a groove or way in said piston-rod, means to rotate said gear, the upper end of said groove being beveled outward to the surface of said rod whereby said shaft is au-
35 tomatically thrown out of connection with said gear, and a handle on said pin for withdrawing it from the groove by hand.

4. A lubricator comprising a cylinder, a plunger or piston in said cylinder, a screw-
40 threaded piston-rod engaging a stationary screw-threaded bearing above the cylinder, a worm-gear mounted on said rod, a spring-pressed pin mounted on said gear and nor-
mally engaging a groove or way in said pis-

ton-rod, a shaft carrying a worm meshing 45 with said worm-gear, and means to rotate said shaft, the upper end of said groove being beveled outward to the surface of the rod whereby said shaft is automatically thrown
50 out of connection with said gear for the purpose specified.

5. A lubricator comprising a cylinder, a plunger or piston in said cylinder, a screw-threaded piston-rod, a top plate, for the cyl-
55 inder, having upwardly-extending curved arms provided with a screw-threaded bearing for said piston-rod above the cylinder, and means to rotate said piston-rod to raise and lower said piston.

6. A lubricator comprising a cylinder, a 60 plunger or piston in said cylinder, a screw-threaded piston-rod, a top plate for the cylinder having upwardly-extending curved arms provided with a screw-threaded bear-
65 ing for said piston-rod, a gear mounted on said rod and having a spring-pressed pin normally engaging a groove or way in said piston-rod, and means to rotate said gear, the upper end of said groove being beveled
70 outward to the surface of said rod whereby said shaft is automatically thrown out of connection with said gear for the purpose specified.

7. A lubricator comprising a cylinder, a piston in said cylinder, means to raise and 75 lower said piston in said cylinder, the piston having a circumferential groove in its edge, and a packing-ring provided with a bead extending into said groove and its lower end beveled outward and projecting below the
80 bottom of the piston for the purpose specified.

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

OZRO SANDERS.

Witnesses:

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