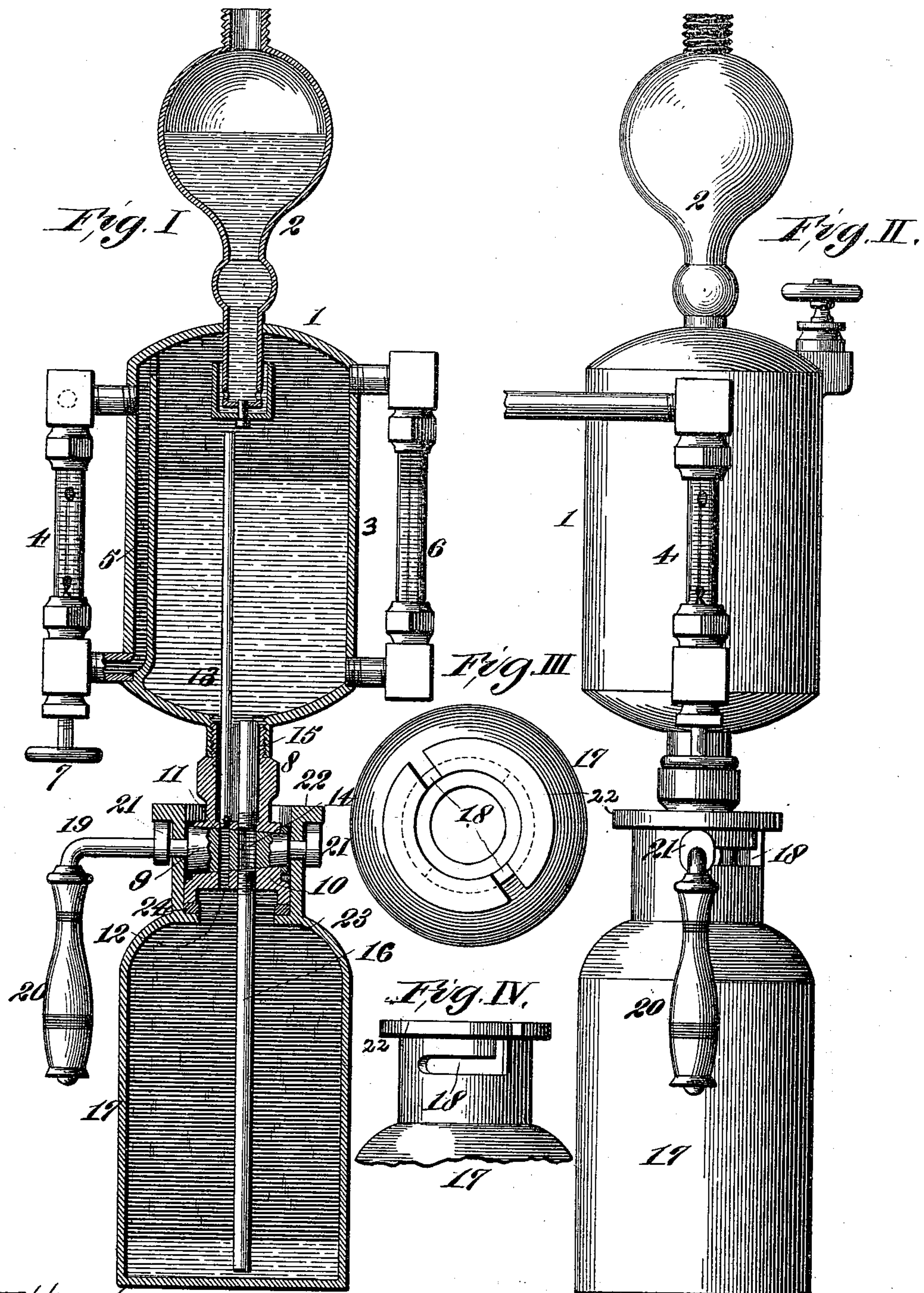


(No Model.)

W. J. RUFF.
LUBRICATOR.

No. 542,946.

Patented July 16, 1895.



Attest:
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UNITED STATES PATENT OFFICE.

WILLIAM J. RUFF, OF QUINCY, ILLINOIS.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 542,946, dated July 16, 1895.

Application filed July 25, 1894. Serial No. 518,538. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. RUFF, of Quincy, in the county of Adams and State of Illinois, have invented a certain new and useful Improvement in Apparatus for Lubricating, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 The object of my invention is to provide a lubricator which will be continuous in its operation, both while replenished and while being replenished with oil; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

15 Figure I is a vertical section illustrative of my invention. Fig. II is a side elevation. Fig. III is a top view of the supply-cup, and Fig. IV is a detail view showing the upper end of the supply-cup.

20 1 represents an ordinary Powell lubricator, having the condensed-steam cup 2, a body 3, and oil-passage 5, a sight-tube 4, through which the oil passes from the cup, a sight-feed 25 6 by which the amount of oil in the cup is indicated, and having the usual valve 7 for regulating the flow of oil. No invention is claimed by me in this Powell lubricator, and any other form of lubricator might be used in connection with my invention.

30 On the lower end of the lubricator is a tube or hollow nipple 8, which is traversed by a valve 9, the valve fitting in a barrel 10 on the lower end of the tube 8. The valve 9 is preferably in the form of a tubular cone, and it has a perforation 11 adapted to register with a perforation 12 in the barrel 10.

35 13 represents a pipe tapped into the upper part of the hole 12, and which extends upwardly through a passage in the tube into the lubricator 3. The valve 9 is also provided with a perforation 14, adapted to register with an opening passing transversely through the barrel 10, from which extends through another 45 passage in the tube an upwardly-projecting tube 15 and a downwardly-projecting tube 16.

50 17 represents an oil supply-cup, which, when in place, receives the lower end of the tube 8, the neck of the cup being provided with bayonet-slots 18, which receive the shaft 19 of the valve 9. The cup is applied by bringing the vertical parts of the slots 18 op-

posite the shaft 19 and then moving the cup toward the lubricator 3 and then turning it so that the shaft 19 will enter the horizontal parts of the slots 18. The shaft 19 is provided with a handle 20, and it is also provided with eccentrics 21. On the upper end of the neck of the cup 17 is an out-turned flange 22 and at the lower end of the neck is an internal flange 23.

24 represents a packing-ring between the flange 23 and the lower part of the barrel 10. Before the cup is put in place the valve 9 is turned with the salient part of the eccentrics 21 down. At this time the openings 11 and 14 of the valve do not register with the openings 12 and the pipes 15 and 16, so that the lubricator is closed by the valve. When the cup is slipped into position, the valve 9 is turned by the handle 20 to cause the perforations or openings 11 and 14 to register, respectively, with the opening 12 and pipe 13 and with the pipes 15 and 16, and the eccentrics 21 are, by the turning of the shaft, caused to press upwardly against the flange 22 on the upper end of the neck of the cup 17 and thus press the cup upwardly, forming a tight joint at the packing-ring 24, and thus forming a tight joint between the lubricator and the cup.

The operation of the device is as follows: Before the oil is entirely exhausted from the lubricator 3, the valve 9 is turned until the handle 20 is brought into a horizontal position, thus closing the lower end of the lubricator and rendering it possible to remove the cup 17 by turning it so as to bring the vertical parts of the slots 18 opposite the shaft 19. There is still sufficient oil in the lubricator to last for a time, and the condensed steam or water still passing into the lubricator from the chamber 2, the lubricating process continues, while the operator takes the cup 17 and, emptying the water therefrom, refills it with oil, and when refilled he applies it again in position on the tube 8 of the lubricator and turns the valve 9, with its handle, to a vertical or to a substantially vertical position, causing the opening 11 in the valve 9 to register with the pipe 13 and the perforation 12, and causing the opening 14 to register with the pipes 15 and 16, and tightening the cup to the lubricator by virtue of the eccentrics 21, as

explained. The water in the lubricator now passes through the pipe 15, the valve 9, and the pipe 16, to the bottom of the cup 17, displacing the oil through the openings 12 and 11, and through the pipe 13 into the lubricator, the oil taking the place of the water in the lubricator. All this time the lubricator continues to feed, and will continue as long as there is any oil in the cup 17 or the lubricator. Before the oil is entirely exhausted again, and after it has all passed from the cup into the lubricator, the cup is again removed and replenished, and replaced in the same manner as explained. With this improved device the process of lubrication is continuous, the lubricator always receiving oil from the cup, and the cup being removed, replenished, and attached before the oil is entirely exhausted.

In Fig. 1 the light shade lines represent water, and the dark shade lines represent oil, and the drawings illustrate the device as it would appear just after the cup had been refilled and replaced, and while the water is passing from beneath the oil in the lubricator to the bottom of the cup, and causing the oil in the cup to pass into the lubricator through the pipe 13.

The removal of the cup 17 does not affect the steam-pressure or the water-pressure in the lubricator 3, so that the lubricator continues to feed when the cup is removed, and when the cup is refilled and replaced this pressure is transferred to the cup and moves the oil from the cup into the lubricator, and of course continues to cause the oil to pass from the lubricator to the part to be lubricated, and this pressure is thus utilized to replenish the lubricator with oil from the cup, so that the operation of the lubricator is continuous and the feeding of the oil never ceases, thus differing from the ordinary form of lubricator, where the feed of the oil is interrupted while the lubricator is being replenished with oil.

The supply-cup may be of any desired size or form, and may be in the form of a large tank or reservoir, and I do not wish to be limited to the manner I have shown for connecting the supply cup or reservoir to the lubricator, as these features may be varied without departing from the essential features of my invention.

I claim as my invention—

1. The combination of a lubricator having

a nipple at its lower end formed with water and oil passages, a tube connected with the oil passage and extending upward into the lubricator, a tube connected with the water passage and extending downward, and an oil supply cup having means for removably connecting it with the lubricator, and a valve located in the nipple having water and oil perforations and adapted to shut off communication between the supply cup and the lubricator; substantially as described.

2. The combination of a lubricator, a valve located at the lower end thereof, a removable supply cup located beneath the valve, means for forcing the oil, and suitable passages between the cup and the lubricator, whereby the oil is caused to pass from the lubricator to the part to be lubricated, and from the cup into the lubricator, and means whereby the cup can be removed and replenished without interfering with the passing of the oil from the lubricator; substantially as set forth.

3. The combination of a lubricator, having a tube at its lower end, a valve in said tube, a cup removably applied to said tube operating in connection with said valve, means for forcing the oil, and suitable pipe connections, between the cup and the lubricator, whereby oil is caused to pass from the cup into the lubricator and from the lubricator to the part to be lubricated; substantially as set forth.

4. The combination of a lubricator having a tube at its lower end formed with water and oil passages, a valve fitted in said tube, having passages adapted to register with passages in the tube, pipes extending from the passages in the tube, eccentrics on the stem of said valve, and a cup adapted to fit over said tube, and to be tightened by said eccentrics; substantially as set forth.

5. The combination of a lubricator, having a tube at its lower end formed with a perforated barrel, a valve fitting in said barrel, eccentrics on the stem of said valve, pipes extending from the perforations in the barrel, and a cup provided with bayonet slots and adapted to fit over said tube with the valve stem fitting in said slots; substantially as and for the purpose set forth.

WILLIAM J. RUFF.

In presence of—

GERHARD G. ARENDS, Jr.,
CASPAR RUFF.