No. 764,731. PATENTED JULY 12, 1904.

R. W. LAMBERT.

OIL CAN PUMP.

APPLICATION FILED MAR. 11, 1904.

NO MODEL.

Fig. 1.

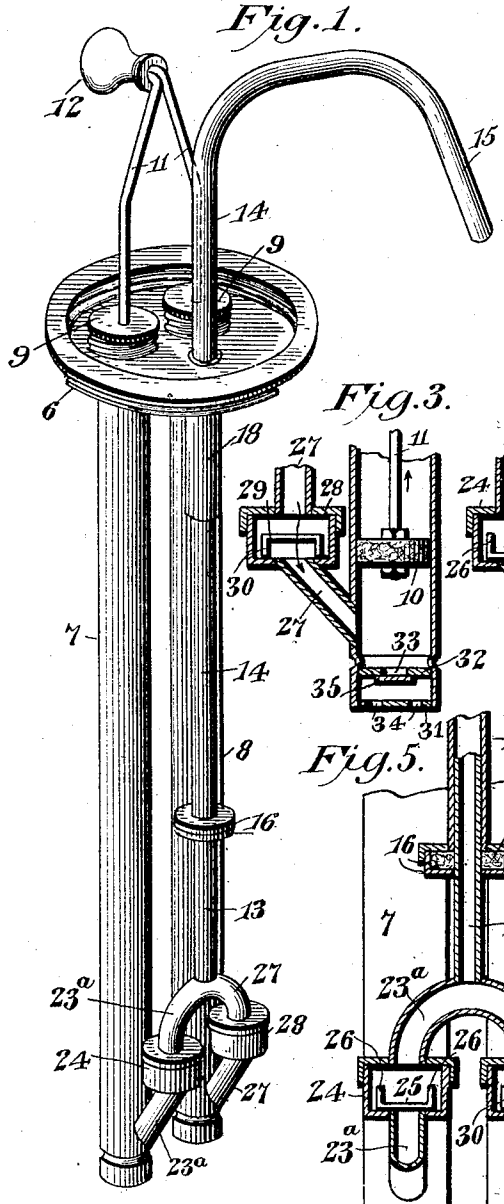


Fig. 2.

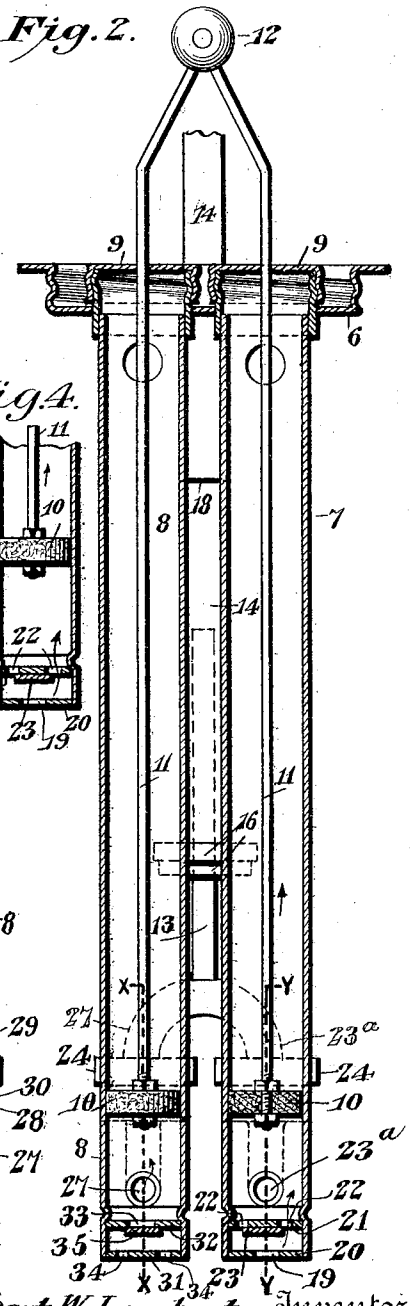


Fig. 3.

Fig. 4.

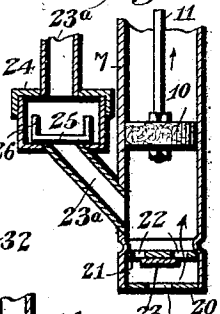


Fig. 5.

Robert W. Lambert, Inventor

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No. 764,731. Patented July 12, 1904.

UNITED STATES PATENT OFFICE.

ROBERT WARREN LAMBERT, OF TOLEDO, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE DELPHOS CAN COMPANY, OF DELPHOS, OHIO, A CORPORATION OF OHIO.

OIL-CAN PUMP.

SPECIFICATION forming part of Letters Patent No. 764,731, dated July 12, 1904.

Application filed March 11, 1904. Serial No. 197,665. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WARREN LAMBERT, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Oil-Can Pump, (Case A,) of which the following is a specification.

My invention relates to pumping apparatus, primarily intended for use in connection with oil-tanks, for the purpose of pumping oil from the latter into lamp-fonts, of that type intended to automatically prevent the overflow of the latter. Its object is to provide a pump structure wherein the necessity for separate discharge and return pipes is obviated, the construction is greatly simplified, so that the pump can be manufactured at small cost, and the action thereof is entirely reliable.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of a pump constructed in accordance with the present invention. Fig. 2 is a vertical sectional view through the two barrels. Fig. 3 is a vertical sectional view taken on the line *x x* of Fig. 2 or, in other words, through the lower portion of the return-pump. Fig. 4 is a similar view on the line *y y* of Fig. 2 or through the lower portion of the supply or discharge pump. Fig. 5 is a vertical sectional view through the lower end of the supply-pipe and its connections with the barrels.

Similar reference-numerals indicate corresponding parts in all the figures of the drawings.

In the embodiment illustrated the usual screw-cap 6 is shown, from which are suspended two pump-barrels 7 and 8, each having open upper ends, which, however, are normally closed by screw-caps 9. Operating in the barrels 7 and 8 are solid pistons 10, disposed in horizontal alinement and detachably mounted on the lower ends of piston-rods 11, said rods extending through the caps 9 and having their upper ends connected by a handle-knob 12. A single discharge and return pipe is employed, comprising telescoped sections 13 and 14, the upper section 14 receiving the lower section, passing through the cap 6, and having its upper end bent into the form of a siphon-tube or discharge-nozzle 15. The lower end of the upper section 14 is preferably provided with a packing-box, comprising telescoped sections 16, inclosing therein suitable packing material 17, that frictionally engages the lower section 13 to prevent leakage between the sections. A depending collar 18, secured to the cap 6 and surrounding the section 14, serves to prevent the splash of liquid through the opening through which the pipe passes and also acts as a stop against which the boxing 16 abuts to limit the upward movement of the upper section 14 of said pipe. One of the pumps thus formed—as, for instance, 7—constitutes the discharge-pump, and its lower end is provided with an oil-inlet opening 19, formed in the bottom 20. Above this bottom is located a partition 21, having a series of openings 22 therethrough. A valve 23, loosely mounted in the compartment formed between the bottom 20 and partition 21, is arranged to close the opening 19, but not the openings 22. From the lower end of the discharge-pump barrel leads a discharge-conduit 23^a, which connects with the lower section 13 of the discharge and return pipe. In this conduit is formed a valve-casing 24, containing an outwardly-opening valve 25. In other words, this valve is adapted to rest flat upon the bottom of the casing 24 and cover the inlet of the conduit thereto. It has upwardly-projecting legs 26, however, which hold said valve in spaced relation to the outlet from said casing, so that it cannot close the same. The other barrel 8 and its plunger constitute the return-pump, having a conduit 27 communicating with the lower end of the discharge and return pipe and leading to the bottom of said barrel 8. This conduit is also provided with a valve-casing 28, within which is located a valve 29, opening inwardly toward the pump. In other words, said valve 29 is adapted to close the inlet-orifice at the top of the casing and is held in spaced relation to the outlet from said casing by depending legs 30. The lower end of the pump-barrel 8 is provided with a bottom 31 and

above the same a partition 32. The partition 32 has a central opening 33 therein, while the bottom is provided with a series of openings 34. In the compartment formed by the said bottom and partition is arranged an outwardly-opening valve 35, adapted to close the partition-openings 33, but not the openings 34.

The operation of this pump is as follows: Assuming that it is in an oil-can with its lower end submerged, it will be apparent that when the handle 12 is elevated the pistons will be correspondingly moved. The result is that oil will be drawn into the barrel of the discharge-pump, as its bottom inlet-valve 23 will open, while its discharge-valve 25 will be closed. In the return-pump, however, the bottom valve 35, which constitutes the discharge-valve, will be closed, while the inlet-valve 29 will be open, and thus air will be drawn downwardly through the combined discharge and return pipe and into said pump-barrel. When the plungers are depressed, the oil within the discharge-pump barrel is forced through the discharge-conduit 23, past the valve 25, and into the main pipe, being delivered from the nozzle 15. It will of course be understood that the nozzle is inserted into the lamp or vessel being filled, and the above action is continued until the level of the oil within the lamp or vessel reaches the discharge end of the nozzle. Thereupon instead of air being returned through the single pipe oil will be drawn inwardly by the return-pump or discharge through the bottom of the barrel back into the vessel. The result is that with the pumping mechanism described there is an alternate positive discharge and return suction. In other words, said positive discharge is intermittent and the positive suction is produced in the interims between the discharges. Consequently the single pipe constitutes both the means for discharging the oil from the can and also the means for returning the same from a filled vessel thereto.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In an oil-can pump, the combination with a single discharge and return pipe, of pumping mechanism for alternately effecting the discharge and a positive return suction through said pipe.

2. In an oil-can pump, the combination with a single discharge and return pipe, of pumping mechanism for effecting intermittent positive discharges through said pipe, and a positive suction return through said pipe in the interims between said discharges.

3. In a pumping apparatus, and in combination, a combined discharge and return pipe, means for moving a medium in one direction through said pipe, and other mechanical means for moving a medium in a reverse direction through the pipe.

4. In an oil-can pump, the combination with a single discharge and return pipe, of pumping mechanism having separate connections with the lower end of said pipe for alternately effecting a positive discharge and a return suction therethrough.

5. In an oil-can pump, the combination with a single discharge and return pipe, of a discharge-pump and a return-pump connected with the pipe, and an automatic valve for alternately closing the connections between the pump and pipe to alternately effect the discharge and positive return suction.

6. In an oil-can pump, the combination with a single discharge and return pipe, of pump mechanism having separate passage-ways communicating with the pipe for alternately effecting a discharge and return suction therethrough, an outwardly-opening valve controlling one passage-way, and an inwardly-opening valve controlling the other passage-way.

7. In an oil-can pump, the combination with a single discharge and return pipe, of separate pump-barrels, one having an outlet communication with the pipe, the other having a return communication with the pipe, and oppositely-operating valves controlling said communication.

8. In an oil-can pump, the combination with a single discharge and return pipe, of separate pump-barrels, a valved inlet to one of the barrels, a valved outlet from said barrel having a communication with the pipe, a valved inlet connecting the pipe and the other barrel, and a valved outlet from said other barrel.

9. In an oil-can pump, the combination with separate pump-barrels, of a valved inlet to one of the barrels, a valved outlet from the other barrel, a single discharge and return pipe, valve-casings, oppositely-operating valves located in the casings, communications between the casings and barrels respectively, and an arched conduit connecting the casings and the lower end of the discharge and return pipe.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT WARREN LAMBERT.

Witnesses:

CLEM V. WAGNER,

L. M. WILLIAMSON.