

(No Model.)

R. O. GRAHAM.
OIL PUMP.

No. 527,422.

Patented Oct. 16, 1894.

Fig. 1.

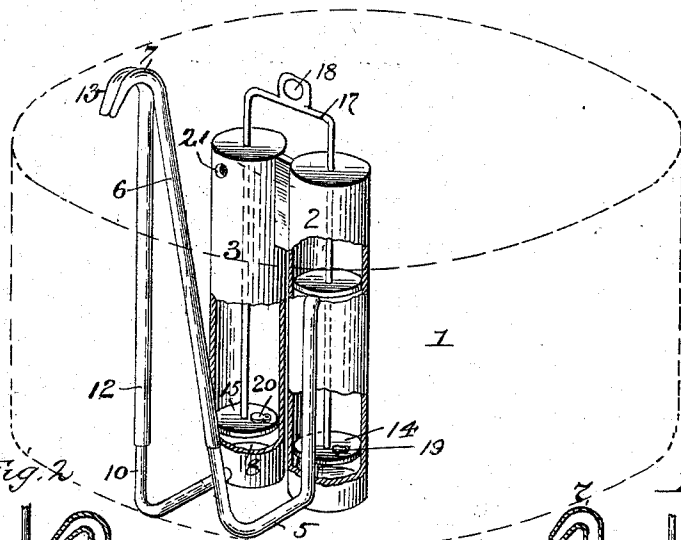


Fig. 2.

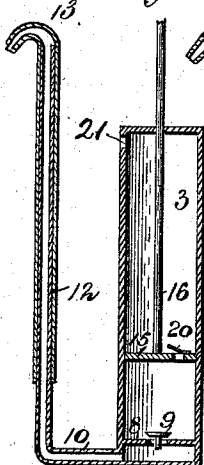


Fig. 3.

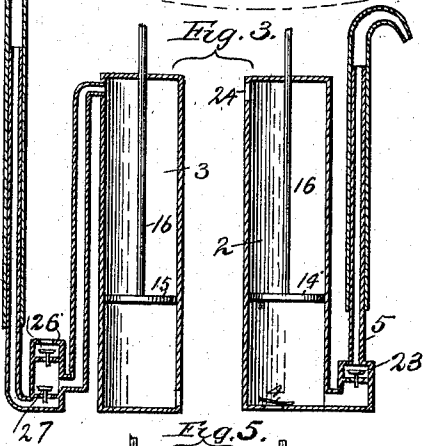


Fig. 4.

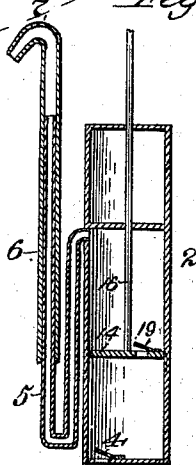
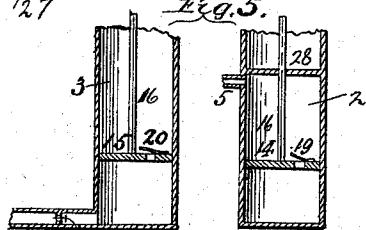


Fig. 5.



WITNESSES:

J. L. Ourand.
J. M. H. Jones

INVENTOR:

Robert O. Graham,
Lawson Rogers & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT O. GRAHAM, OF BLOOMINGTON, ILLINOIS.

OIL-PUMP.

SPECIFICATION forming part of Letters Patent No. 527,422, dated October 16, 1894.

Application filed April 30, 1894. Serial No. 509,543. (No model.)

To all whom it may concern:

Be it known that I, ROBERT O. GRAHAM, a citizen of the United States, and a resident of Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Oil-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to pumps designed more particularly for filling lamps and other vessels from cans or other receptacles, and its object is to provide an improved pump of this character in which any surplus or excess of oil fed to the lamp, after the proper level has been reached will be sucked back into the can as fast as fed to the lamp, whereby overflowing of the latter is prevented.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings: Figure 1 is a perspective view partly broken away of a pump constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view. Figs. 3 and 4 are similar views of a modified construction. Fig. 5 shows detail sectional views.

In the said drawings, referring now to Fig. 1, the reference numeral 1 designates a can or other receptacle for containing oil or other liquid.

The numerals 2 and 3 designate two cylinders, preferably rigidly connected together, which constitute, respectively, the forcing barrel or cylinder and the suction barrel or cylinder. In the lower part of cylinder 2 is located an upwardly opening valve 4, and connected with said cylinder near the upper end is a downwardly and upwardly extending supply or filling pipe 5. Telescoping on this pipe 5 is a pipe 6, formed with a goose-neck 7. Located in cylinder 3 near the lower end thereof, is a diaphragm 8, provided with an upwardly opening valve 9, and communicating with the cylinder below said diaphragm is an upwardly extending suction pipe 10, provided with a telescoping pipe 12,

formed with a goose-neck 13. The ends of these goose-necks are brought together and secured to each other, forming a double nozzle which can be inserted in the filling opening of a lamp or other object. Located in said forcing and suction cylinders 2 and 3, are pistons or plungers 14 and 15, provided with rods 16, connected together at their upper ends by a cross-bar 17, so that they will move in unison, said cross-piece being provided with a hand-hole 18. Said plungers are provided with upwardly opening valves 19 and 20.

In the construction just described, the lamp or other object is filled and the surplus oil sucked back upon the up-stroke of the plungers, and the operation is as follows: The connected cylinders are placed in the can or other receptacle containing oil or other fluid or liquid, and the lamp or other object to be filled is placed on top thereof, with the nozzles of the goose-necks projecting into the filling orifice of the lamp, the pipes of which the goosenecks form part, being adjustable vertically on the pipes connected with the cylinders, so as to accommodate the nozzles to different heights of lamps to be filled. While it is preferred to have the pipes telescope on each other, as just described, it is obvious that they may be made in one piece with the goose-necks, if desired or found convenient, without departing from the invention. By now reciprocating the plungers or pistons up and down, oil will be drawn into the cylinder 2, through valve 4 upon the up-stroke of the plunger 14. Upon the down-stroke of said plunger valve 4 will close and valve 19 will open, causing the oil to be forced up above the piston, and upon the next up-stroke valve 19 will close and the oil be forced through pipes 5 and 6 to the lamp. It will thus be seen that oil is drawn into the cylinder on the up-stroke of the plunger and forced into the lamp on the down-stroke. During this operation of plunger 14, plunger 15 will be reciprocated in unison therewith. As soon as the oil in the lamp reaches the double nozzle, the surplus oil forced therein by the up-stroke of the plunger 14, will be sucked back into the can by the plunger 15, the oil entering cylinder 3, through valve 9 and escaping above the plunger through

valve 20 on the next down-stroke and out through an opening 21 in the cylinder on the next down-stroke. It will thus be seen that the oil is simultaneously forced into the lamp and sucked back into the suction cylinder on the up-strokes of the plunger, when the lamp is full, thus preventing overflowing of the latter.

In the modification shown in Fig. 2 the oil is simultaneously forced into the lamp and sucked back when it has reached the proper level, on the down-stroke of the pistons or plungers. In this case the cylinder 2 is provided with the valve 4 and pipe 5 which communicates with the cylinder at the bottom, instead of at the top, as in Fig. 1, and is provided with a valve 23, which opens on the down-stroke of the plunger and closes on the up-stroke. The cylinder is also provided with an opening 24, for the passage into the can of any oil which may escape above the plunger. In cylinder 3, the suction pipe communicates therewith at the top and extends downward and then upward being provided with a valve-box 25, at the bend, having a valve 26 opening on the down-stroke and closing on the up-stroke, and with a reversely operating valve 27, through which oil sucked from the lamp is forced into the can on the up-stroke of the plunger. In this modification there are no valves in the plungers, the valves 23 and 27, serving the same purpose. The operation of this construction will be

readily understood, and a detailed description thereof is not necessary.

The construction shown in Fig. 3 is the same as that of Fig. 1, except that the diaphragm 8 is dispensed with, and valve 9 located in the suction pipe, and the forcing cylinder is provided with a diaphragm 28, which takes the place of the top of the cylinder in said Fig. 1.

Having thus described my invention, what I claim is—

In a pump of the character described, the combination with the suction cylinder provided with a valve at its lower end and a downwardly and upwardly extending filling pipe connected with the upper end thereof, and the suction cylinder having a valve and a suction pipe at its lower end and an opening at its upper end, of the plungers, provided with valves, located in said cylinders and connected together so as to move in unison, the construction being such that liquid is forced out of the filling pipe and sucked into the suction pipe, upon the upstroke of said plungers; substantially as specified.

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

ROBERT O. GRAHAM.

Witnesses:

KATE W. HAMILTON,
MARY A. CAMPBELL.