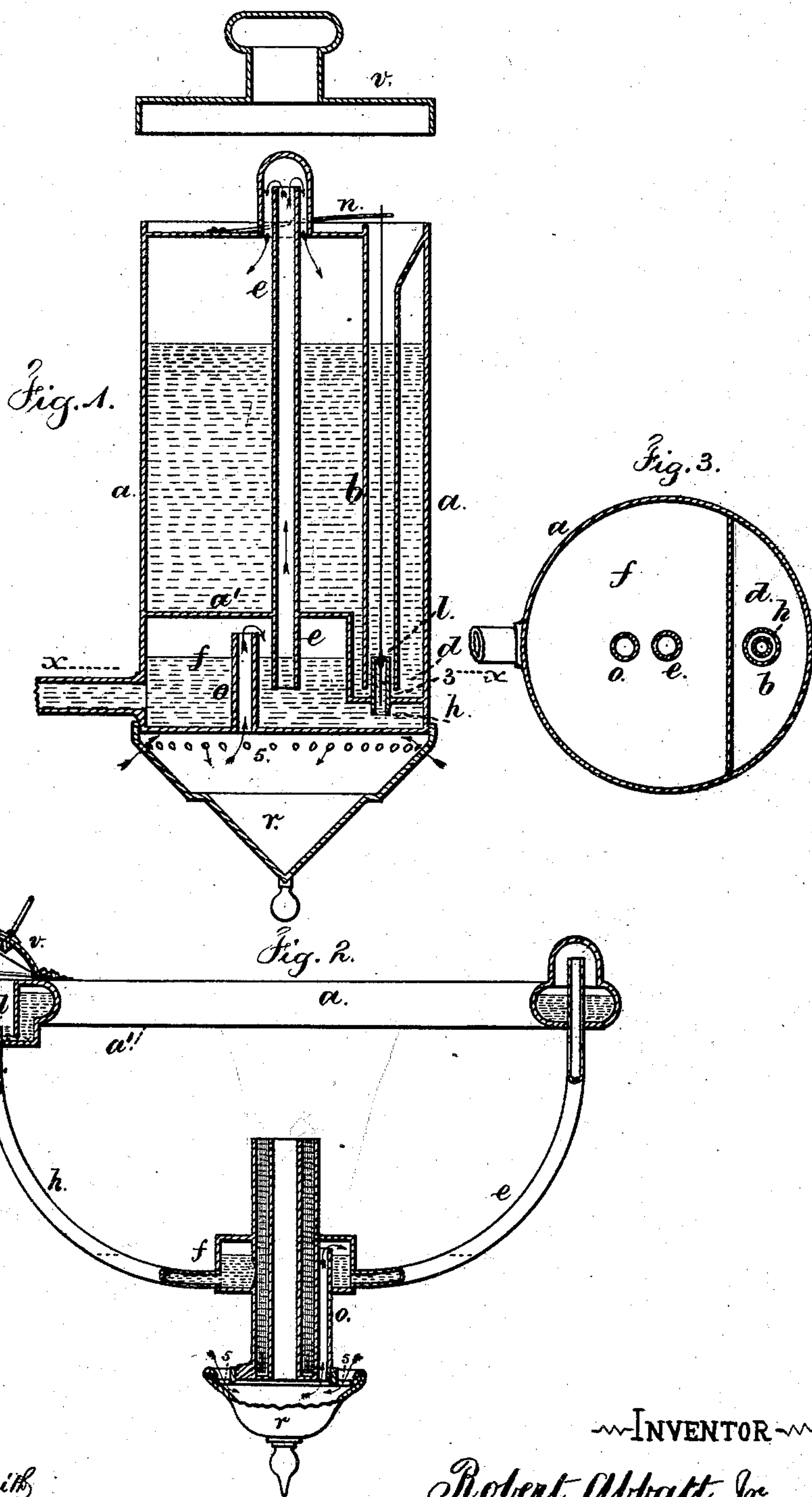


R. ABBATT, Jr.
Lamp.

No. 217,502.

Patented July 15, 1879.



WITNESSES.

Chas. H. Smith
Geo. T. Pinckney

INVENTOR.

Robert Abbatt Jr.
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attg

UNITED STATES PATENT OFFICE.

ROBERT ABBATT, JR., OF FLUSHING, NEW YORK.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **217,502**, dated July 15, 1879; application filed April 10, 1879.

To all whom it may concern:

Be it known that I, ROBERT ABBATT, Jr., of Flushing, in the county of Queens and State of New York, have invented an Improvement in Fountain-Lamps, of which the following is a specification.

A fountain-lamp has been made with a filling-tube open at top and having a valve at the bottom and an air-pipe passing up inside the fountain.

My improvement relates to this class of lamps; and consists in the combination, with the fountain and filling-tube, of a tube entering the reservoir to admit air, and also form an overflow in case the oil rises too high, and a drip-cup applied below the fountain to catch any overflow. I also provide a tube that rises within the filling-tube and serves to maintain the required level of the oil at the lower end of the filling-tube.

In the drawings, Figure 1 is a vertical section of a fountain adapted to a student-lamp. Fig. 2 is a vertical section of the improvement arranged with an elevated or ring-shaped fountain; and Fig. 3 is a section on the line *x x*, Fig. 1.

The fountain is composed of a suitable vessel, *a*. In Fig. 1 it is shown as cylindrical, and in Fig. 2 it is in the form of an elevated ring for a hanging lamp or for a lantern.

The filling-tube *b*, Fig. 1, passes vertically through the fountain *a*, and is made tight with the fountain at its upper end, and said upper end may be funnel-shaped, so as to receive the oil. The lower end of this filling-tube is open, and should be at a lower level than the bottom *a'* of the fountain and pass down into the overflow-cup *d*, which is a portion of or connected with the bottom *a'* of the fountain, so that the oil in the fountain flows into the cup *d*.

The air-tube *e* extends up through the fountain above the top of the oil, and it is open at the upper end. The lower end of the said tube *e* is in the oil-well *f* of the lamp, at the low-oil level, so that when the oil is consumed from said well *f* to the low level the air passes up through the tube *e* into the top of the fountain, and allows the oil therein to descend, so as to pass into the cup *d*, and thence into the oil-well *f*, and, rising therein, the oil covers

the lower end of the air-tube *e* and closes the same, so that air cannot enter the fountain.

If the opening from the cup *d* into the well *f* were large, the flow of the oil from *d* into *f* would be sudden, and the rise of oil in *f* would interfere with the steadiness of the light. To prevent this I make use of a tube, *h*, passing from the cup *d* to the oil-well *f*. This tube *h* should be comparatively small, and its upper end should be above the opening 3, which passes from the fountain *a* into the filling-tube *b* and cup *d*. Thereby the oil cannot all run out of the cup *d*, but its level will always be higher than the top of the opening 3, so that air cannot enter the fountain by said opening. The oil from the cup *d* will run gradually into the well *f*, in consequence of the small size of the tube *h*; and it is to be understood that when the lamp is being filled this tube *h* should be closed, and for that purpose the valve *l* is made use of. I prefer to have this valve *l* on a spring-arm, *n*, so that it can be moved when the lamp is being filled to close the said tube; but if this tube *h* is so small that the quantity of oil flowing through the same into the well is not objectionable during the small space of time occupied in filling the fountain, then this valve may be dispensed with.

It is furthermore to be understood that the oil in the filling-tube *b* will stand at the same level as that in the fountain, or nearly so, while the fountain is being filled, and that the air in the fountain will be forced down through the air-tube and bubble up through the oil in the well. Furthermore, when air enters the fountain through this tube *e* the oil will generally rise in the filling-tube to the same level as it is in the fountain, and it will run from that filling-tube into the well after the lower end of the air-tube has been closed by the rising of the oil; but the size of this filling-tube must not be sufficient to cause any overflow by the contents thereof running out into the oil-well *f*.

The tube *o* is above the ordinary oil-level, but it will act as an overflow-pipe should the oil accidentally rise too high in moving the lamp from place to place or otherwise; and below this overflow-pipe is the drip-cup *r*, which is removable for cleaning or emptying. The same is to have air-holes at 5.

The lamp shown in Fig. 2 corresponds in every particular to the lamp shown in Fig. 1, so far as the operation is concerned; but in said Fig. 2 the tube *h* is elongated, and the oil-well is removed from the bottom of the fountain to the Argand burner, and the air-tube *e* is also extended so as to be below the level of the oil in the well *f*, and the overflow-pipe *o* is adjacent to the wick-tube, and opens at its lower end into the drip-cup, which also forms a drip-cup for the burner.

The movable cap *v* is adapted to form an ornamental cover to the fountain, and also to open the valve *l* when the cover is put into place, so that the oil may flow into the tube *h*. It will be evident that the spring *n*, raising the valve as the cover is removed, closes the orifice into the tube *h*, and the motion thus given to the valve and its stem will prevent the orifice from becoming clogged with any particles of foreign matter.

I am aware that a fountain, air-tube, and filling-tube have been combined with a cock that is employed to close the outlet to the burner while the reservoir is being filled, and to open the outlet to the burner when the filling-tube is shut off from the fountain. This cock is not easily cleaned or repaired, and

should the same leak the oil-level of the lamp will become higher. By the use of the tube *h* the aforesaid difficulty is avoided and the cock dispensed with.

I claim as my invention—

1. The combination, with the fountain *a*, filling-tube *b*, and air-tube *e*, of the tube *h* and cup *d*, substantially as set forth.

2. The oil-well *f* and overflow-tube *o*, in combination with the oil-fountain *a*, filling-tube *b*, and cup *d*, substantially as set forth.

3. The combination, with the fountain and cup *d*, of the oil-well *f*, drip-cup *r*, and overflow-pipe *o*, substantially as set forth.

4. The combination, in a student-lamp, of the fountain *a*, filling-tube *b*, passing down to nearly the bottom of the fountain, the supply-tube *h*, rising to the level of the oil in the filling-tube, the valve *l*, cover *v*, and spring *n*, to actuate the said valve, substantially as specified.

Signed by me this 31st day of March, A. D. 1879.

ROBERT ABBATT, JR.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.