J. F. LAUTH.

OIL LAMPS OR CHANDELIERS.

No. 189,110. Patented April 3, 1877.

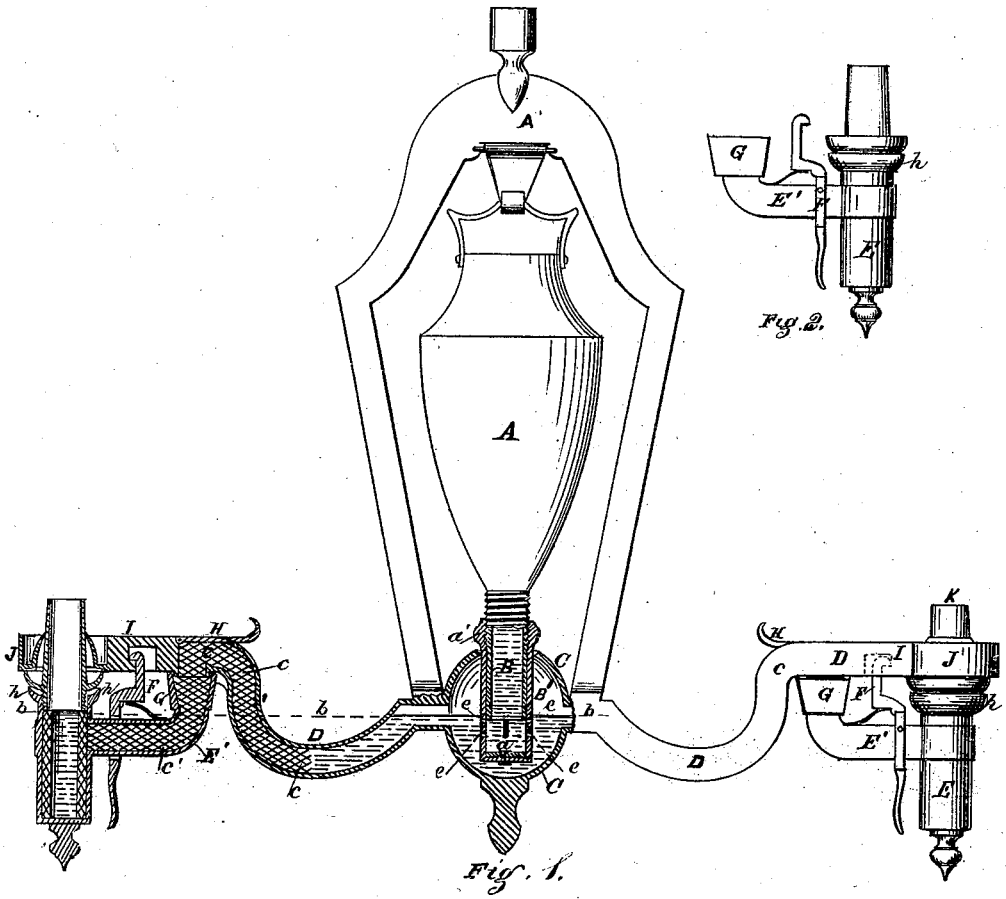

Fig. 1.

Fig. 2.

Witnesses

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IMPROVEMENT IN OIL LAMPS OR CHANDELIERS.

Specification forming part of Letters Patent No. **189,110**, dated April 3, 1877; application filed February 12, 1877.

To all whom it may concern:

Be it known that I, JOHN F. LAUTH, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new, useful, and Improved Lamp, Chandelier, or Apparatus for Burning Petroleum or other Illuminating-Fluids, which invention is fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a longitudinal vertical section in part. Fig. 2 is a front view of the lamp portion, which is detachable.

The object of my invention is to insure greater safety and convenience in the burning of illuminating oil or fluids, to wit: a lamp or chandelier having its base of supply at a distance from the flame, the reservoir of which can be removed and filled when the lamp is burning, without interfering with the light or incurring any risk of explosion, the lamp portion being also removable at any time for lighting, or use as a hand-lamp.

This I accomplish by the combination of certain devices with a reservoir which contains the oil, and is held in position by a suitable frame or stand, and emptying itself into a receptacle, in which the oil or fluid is kept at a fixed level by the pressure of the atmosphere, and from whence it is conveyed any desired distance by a tube or tubes which, at some point in their course, turn down below the fluid-level, and also at another point (preferably at their extreme end) turn up above the fluid-level, the oil being raised in the elevated portion by capillary attraction, and delivered to the usual wick which supplies the flame, or conducted into a small lamp-body below the fluid-level by a material capable of capillary attraction, and then delivered to the flame-wick.

In the drawing, A is the reservoir, suspended in a frame, A′, and having a short tube, B, at its lower end. B′ is a short tube, closed at its lower end, its internal diameter being such that it fits on and covers B as a cap. It has a gasket, *a*, in its bottom, and an internal screw-thread, by which it screws on a corresponding thread on B. It is perforated on its lower end with small openings *e e e e*, so that when cap B′ is screwed up tight on B the lower end or mouth of B will be closed by the gasket *a*, and when screwed down the mouth of B will be open, as also the ducts or openings *e e e e*.

C is a receptacle attached to the lower end of frame A′, and immediately under the reservoir A, and in such connection therewith that the tubes B B′ will freely enter an opening in its upper surface, the dimensions of the receptacle having relation to the length of the tubes B B′, so that B′ can be screwed down to open the mouth of B. Extending from C horizontally are one or more tubes, D D, which turn down (preferably just after leaving C) below the level of the fluid in C, and which again turn up (preferably at the extreme end) above the fluid-level. The dotted line *b b b b* represents said level. In the under surface of the end said tube or tubes have the mouth *g* surrounded by the lips *f*. The mouth *g*, however, may be at the side or top of the tube end.

Extending from these tubes are short arms I, which swell out and form supports to the lamp portion E, the burner-tube K passing up through an aperture in the support J.

E is the lamp portion, having the main portion of its body below the fluid-level. At its upper end it widens out into a cup or lip projection, *h*. Internally it has a screw-thread, into which screws the wick or burner tube K.

Extending from lamp-body E is the tube E′, which, turning upward, terminates in a cup, G, the length and course of this tube E′ having reference to the distance apart of the aperture in support J and the mouth *g* in tube D, that when the burner-tube K is passed up through J, the cup G of tube E′ will receive and cover the lips *f*, and, closing on them, a continuous passage-way is formed from receptacle C to lamp E.

H is a small hinged lid immediately above the mouth *g*, and covering an aperture, through which a wick, or material capable of what is termed "capillary attraction," is inserted in the end of tube D, extending from the mouth *g* down the elevated portion of the tube to and below the fluid-level in tube D, as shown by *c c*, Fig. 1. *c′* is a similar wick, extending down from cup G, through tube E′, and into

the lamp-body. F is a spring catch or hook, attached to lamp E, and hooking into the arm I, as shown.

The operation of the invention is as follows:

The chandelier being suspended, or, if made as a lamp, properly supported, wicks *c*, *c*, and *c'* are placed in the tubes D and E', as before mentioned. The reservoir A is then removed and opened by unscrewing tube or cap B' and filled with an illuminating-fluid. Tube B' is then screwed on tight, and closes the mouth of B by the gasket *a'*. The tubes are then inserted into the receptacle C, and the reservoir attached. Then, by unscrewing B' off, or down on, B, the mouth of B is opened, and, as B' descends, the ducts or openings *e e e e* are uncovered, and the fluid flows out into and fills the receptacle and that portion of tube D below dotted lines *b b b b* to a point a little above said line or fluid-level, covering the openings *e e e e* in B', when, the air being excluded from the reservoir, or shut off from further admission, the flow ceases. The oil or fluid, being now in contact with wick *c*, is raised up the elevated part of tube D by capillary attraction, and being thereby put in contact with wick *c'*, which connects with *c* in mouth *g* and cup G. The capillary attraction is continued through tube E', and the oil is conveyed into lamp E, from which it is taken up into the burner, as usual. As the oil is used and falls below the openings *e e e e* air is admitted to the reservoir, and the oil flows out, as required.

When it becomes necessary to fill the reservoir at any time, B' is screwed up, corking the mouth, and the reservoir is removed, the lamp continuing to burn, as there is sufficient oil in the lamp and tubes to last a short time. The lamp portion can also be removed at any time by pressing on the spring-catch F, and withdrawing it from the support J without interfering with the chimney, which is attached to the upper surface of J.

When the lamp is removed the flow of oil ceases through wick *c*, so that no fluid will drop from the then open mouth *g*.

It will be seen that the principles on which my invention acts are atmospheric pressure and capillary attraction, and through the application of these natural laws my invention is self regulating and supplying; that by having some part of the conducting-tube D higher than the base of supply the lamp cannot overflow; that a portion of the tube or tubes, being below the base of supply or fluid-level, are always full of oil or the fluid used, unless the reservoir has been exhausted some time; also, that the upright portion of the tube being filled with the wick *c c*, or its equivalent, it is impossible for the flame to ever be reflected on the receptacle C or reservoir A.

I do not wish to be considered as confining myself to the particular design shown in the drawing, as my invention can be applied in various forms, either as a lamp, chandelier, or by locating a reservoir in some central place in a building, and conveying the fluid to lamps in different rooms or parts of a room by means of small pipes with the same facility and safety as gas is now conducted.

Having, therefore, described my invention and its operation, what I claim, and desire Letters Patent for, is—

1. The combination, in a lamp or chandelier, of the receptacle C, tubes D E', wicks *c c c'*, lamp E, and the reservoir A, provided with screw-cap B', all arranged substantially as described, and for the purposes set forth.

2. In combination with receptacle C, one or more tubes, D, provided with an ascending portion filled with a material having the power of capillary attraction, all arranged and operating in manner as described, for the object set forth.

3. The lamp E, detachable from the oil-supply, and provided with the tube E', having the wick *c'*, all combined, constructed, and operating as described, and for the object set forth.

4. The combination of the tubes D and E' and the wicks *c c c'*, or their equivalents, conveying illuminating-fluid over an elevation between and higher than the lamp E and its base of supply, all constructed and operating in manner as described, and for the object specified.

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Witnesses:
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