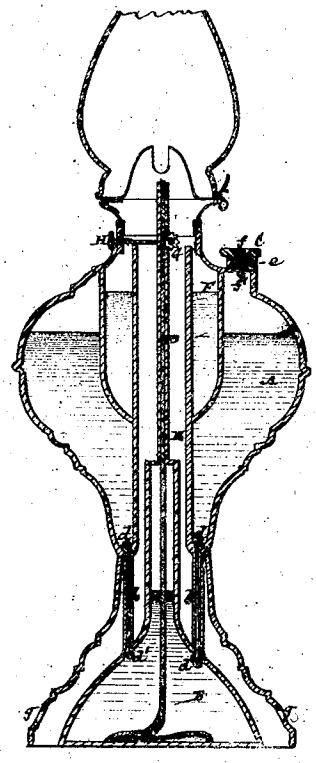
No. 111,531. PATENTED FEB. 7, 1871.

F. T. GRIMES.

LAMP.



Witnesses

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FRANKLIN T. GRIMES, OF LIBERTY, MISSOURI.

Letters Patent No. 111,531, dated February 7, 1871.

IMPROVEMENT IN LAMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FRANKLIN T. GRIMES, of Liberty, in the county of Clay and State of Missouri, have invented certain new and useful Improvements in Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and which represents a sectional elevation of a lamp constructed in accordance with my improvements.

My invention consists—

First, in a certain combination of a main oil or fluid-reservoir, arranged to form the outer portion of the body of the lamp, with a wick-chamber arranged in the base of the lamp, and supplied with oil or fluid from the main reservoir by a tubular connection or connections between the two, together with an air-chamber or passage extending from the base of the lamp to the burner within or through the main reservoir and outside of the wick-chamber, whereby not only the main body of oil or fluid is separated from the wick-chamber, but the weight of the oil or fluid in the wick-chamber is made to give steadiness to the lamp, and a current of cooling air is circulated up through the main reservoir and around the wick-chamber and its tube, which, in the use of certain oils or burning-fluids, contributes to safety.

The invention also includes the combination of an automatic valve or valves with the main reservoir and wick-chamber, for controlling the supply from the reservoir to said chamber, in such manner that when the lamp is burning or occupies an upright position ingress is kept open between said reservoir and chamber, but when the lamp is inverted or any explosion takes place in the wick-chamber communication is automatically closed between the reservoir and wick-chamber, and connection thus cut off with the main body of oil or fluid in the lamp.

The invention likewise embraces an automatic valve for opening and closing the air-orifice usually made in the cap or nozzle, through which the main reservoir is supplied with oil or fluid, in such manner that, in case of the lamp being upset, oil or fluid is prevented from escaping through said orifice.

The invention also includes a certain arrangement within the oil-reservoir, and between it and the air-tube or passage that supplies the flame, of a safety water-chamber for extinguishing the flame in case of the upsetting of the lamp.

Referring to the accompanying drawing—

A represents the oil-reservoir, which is made to form the body of the lamp or outer portion thereof, and which is in connection, by one or more tubes *b*, with the wick-chamber B, that is arranged in the base of the lamp, and forms a secondary reservoir or chamber for the oil, which by its weight is thus made to contribute to the stability of the lamp.

The tubes *b* are controlled above and below by connected spherical or other suitable valves *d d'* and *d d'*. The upper ones *d* of these valves are grooved or otherwise constructed, so that, when down on their seats, oil will trickle past them into the wick-chamber, but the lower valves *d'* are made close fitting, so that, when thrown or forced against their seats at the bottom ends of the tubes *b*, either by explosion within the wick-chamber or by the upsetting of the lamp, they shut off communication between the wick-chamber and main body of oil in the reservoir A.

A similar provision is made in the screw-cap or nozzle C, through which the oil is fed into the reservoir by fitting the air-orifice *e* therein, through which air to produce the necessary atmospheric pressure on the surface of the fluid in the reservoir to secure flow is secured, with a valve or double valve, *f f'*, that, when the lamp is in an upright position, allows of air entering through said orifice, but that closes from within to shut off escape of oil or fluid when the lamp is inverted or partially so.

D is the wick-tube, and E an air-tube or passage for supplying the flame with oxygen. This air-passage is supplied from below, as by side orifices *g* in the outer portion of the base, and surrounds the wick-chamber B; also passes up through the oil-reservoir, separating the wick-tube D from contact therewith, and serving to keep the oil in the reservoir cool.

Arranged within the reservoir A, and surrounding the air-tube E, is a safety water-chamber, F, open at its top, and that serves, in case of the upsetting of the lamp, to extinguish the flame.

By the arrangement of this water-chamber between the oil-reservoir A and wick-tube or passage E, the air is kept purer and cooler in its course to the flame, and the fluid in the reservoir correspondingly cooled.

The wick-tube D is of such construction, or so restricted as regards its support, as to be capable of springing toward or from the wick-operating wheel or lifter G, arranged in the upper portion of the lamp, on one side only of the wick-tube, into which it projects to establish hold on the wick.

On the opposite side of the wick-tube is an adjusting-screw, H, capable of operation from the exterior, and serving to spring the wick-tube toward the lifter G, to prevent slip of the latter on the wick, and thereby to regulate the action or grip of the wick-lifter.

Certain of these improvements are alike applicable to swinging or pendent lamps as to table ones, or those of a stationary character.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination and arrangement relatively to each other of the main reservoir A, the secondary reservoir or wick-chamber B in the base of the lamp, the tubular connection or connections *b*, and the air-tube or passage E, substantially as specified.

2. The combination of an automatic valve or valves, *d d'*, with the tube or tubes *b*, the reservoir A, and the wick-chamber B, for operation essentially as and for the purpose or purposes herein set forth.

3. The application of the automatic valve *f f'* to the reservoir of a lamp, so constructed that air is admitted to the reservoir A when the lamp is in use, and the orifice closed when it is inverted, substantially as specified.

4. The arrangement of the safety water-chamber F relatively to the air-tube or passage E and oil-reservoir A, essentially as shown and described.

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Witnesses:

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