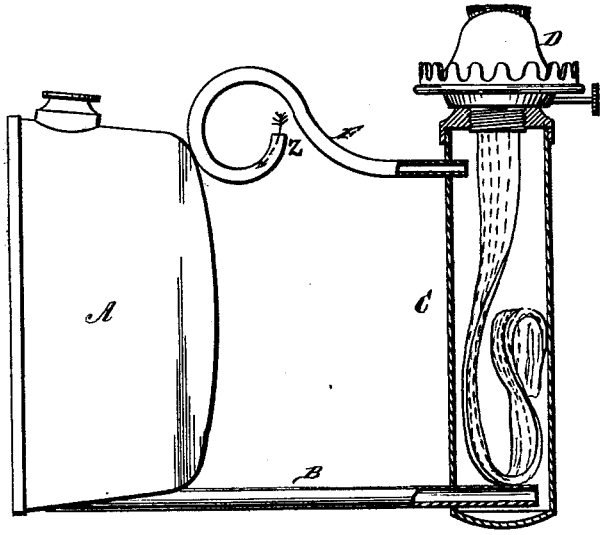
F. G. PALMER.

Lamp.

No. 204,364. Patented May 28, 1878.



WITNESSES

Robt Everett

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INVENTOR.

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UNITED STATES PATENT OFFICE.

FRANKLIN G. PALMER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JASON J. PALMER, OF SAME PLACE.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **204,364**, dated May 28, 1878; application filed February 9, 1878.

To all whom it may concern:

Be it known that I, FRANKLIN G. PALMER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and valuable Improvement in Lamps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a longitudinal vertical section of my lamp.

I provide a reservoir without a burner, and in which no gas can be generated, which reservoir feeds a separate wick-tube with oil, and upon this wick-tube, situated at considerable distance from the oil-reservoir, I place the burner. From the limited chamber beneath the burner, where the explosive gas is generated, I lead an ornamental hollow tube, which serves the double function of carrying off the generated gas to the outside atmosphere, and also acts as an efficient ornamental brace between the wick-tube and the body of the reservoir. It is thus obvious that I avoid the dangers arising from either generating gas in the reservoir, or allowing it to enter there if generated elsewhere; and that I eliminate from the wick-tube beneath the burner all gases therein generated, allowing any burner to be used, and light volatile oils to be employed without danger, and at the same time employ the gas-escape tube as an ornamental brace.

I am aware that eliminating generated gas from beneath the burner when the said gas is generated in the reservoir has been before known; but in such case, if from any cause ignition of such gas should occur, the entire volume of oil is endangered.

I am also aware that the reservoir has been used as a receptacle for gas generated elsewhere, and such arrangement is liable to the same great danger—*i. e*, in case of ignition the gas and volume of oil are in contact.

I am also aware of the "German students' lamp," in which neither is gas generated in the reservoir, nor allowed access thereto if generated elsewhere; but in such case the gas which is generated beneath the burner is liable to ignite from its proximity to the flame.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents the oil-reservoir, provided, near its bottom, with a tube, B, for conveying oil to the wick-tube C, at the upper end of which is the burner D.

From the base of the burner, at the upper end of the wick-tube C, extends a safety-tube, F, which opens into the wick-tube, and its outer or free end is left open at *z* for the escape of gas, and thus prevents any contact whatever with the surface of the oil in the reservoir.

It being well known that no small vent would accommodate the exodus of gas in case of ignition in the reservoir, and an explosion would result, I have placed the vent in the small wick-tube, where, owing to the limited volume of the gas, it will escape, even if ignited, through the tube F *z*.

The wick-tube C is supplied with oil from the reservoir through the feed-tube B.

Heretofore, in the construction of lamps in which the burner was placed on the top of the reservoir and auxiliary burners at the side, the air has been admitted in such manner as to pass over the surface of the oil in the reservoir. This is objectionable when light oils, or those heavily charged with carbon, are used; for, when the burner becomes heated, gas is rapidly generated, and, if ignited, the combustion of the vapor in the reservoir follows, and a consequent explosion.

It is well known that when a burner becomes old it is heated by the flame with greater rapidity, and when connected in any manner with the surface of the oil in the reservoir it becomes dangerous.

The construction shown secures the following advantages: First, gas can only be generated within small limits, and that is vented to a point remote from the flame; second, the generated gas has no way of communicating with the volume of oil; and, third, the tube F *z* serves the double function of releasing the

gas to the outside air, and also acts as an ornamental brace to strengthen the small wick-tube.

I claim—

The hollow tube F, serving the double function of conveying generated gas from the base of the burner in the wick-tube C to the outside atmosphere, and also as an ornamental brace between the said tube and the body of the reservoir A, constructed, arranged, and combined to operate in relation to said reservoir, wick-tube, and feed-tube B, as herein specified, for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

FRANKLIN G. PALMER.

Witnesses:

CHAS. RICE,

J. J. PALMER.