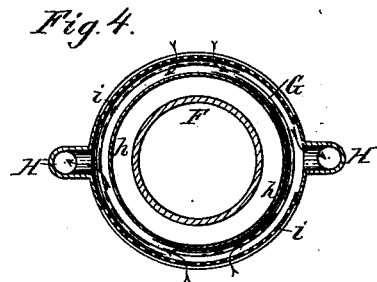
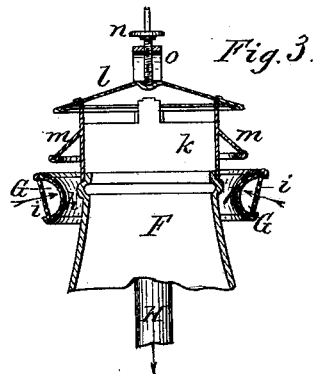
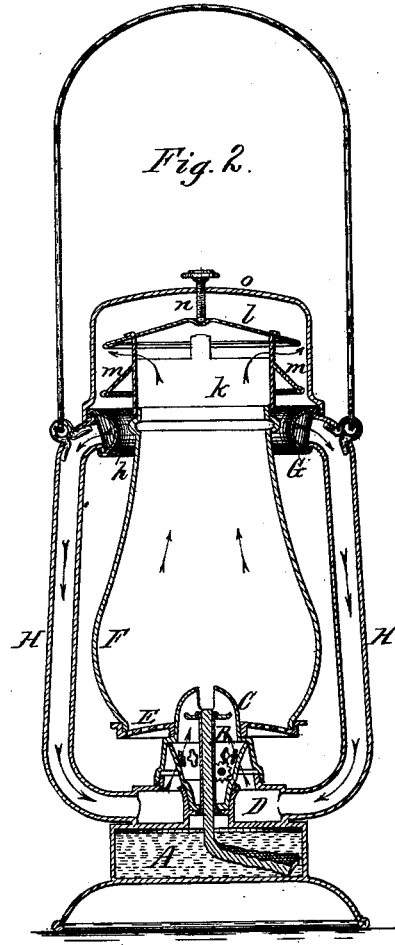
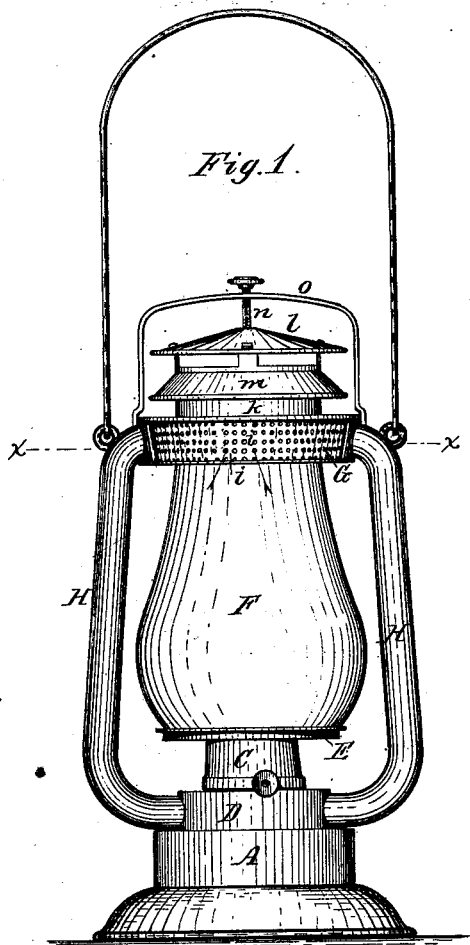


J. W. ORPHY.
Lantern.

No. 213,682.

Patented Mar. 25, 1879.



Chas. Duchhut
Edw. J. Brady WITNESSES

John W. Orphy INVENTOR.
By Nicholas P. Bonner ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN W. ORPHY, OF ROCHESTER, NEW YORK, ASSIGNOR TO CHARLES T. HAM AND F. D. W. CLARKE, OF SAME PLACE.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **213,682**, dated March 25, 1879; application filed February 21, 1879.

To all whom it may concern:

Be it known that I, JOHN W. ORPHY, of the city of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Lanterns, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of lanterns in which the air is supplied to the flame through tubes or pipes which communicate with an air-chamber below the burner, and extend upwardly on the outside of the globe to or near the level at which the heated air or products of combustion escape from the lantern.

The object of this invention is the construction of a cheap, simple, and compact lantern, in which the flame is supplied with pure cold air through said tubes, and in which the flame is not extinguished when the lantern is exposed to the wind or violently agitated.

My invention consists of the peculiar construction of the lantern, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is an elevation, and Fig. 2 a vertical section, of my improved lantern. Fig. 3 is a vertical section of the upper part of the lantern at right angles to Fig. 2. Fig. 4 is a horizontal section in line *x x* of Fig. 1.

Like letters of reference designate like parts in the several figures.

A represents the oil-vessel, B the wick-tube, and C the burner-cone. D is an air-chamber arranged upon the oil-vessel, A, below the burner, and communicating with the burner-cone C, as clearly shown in Fig. 2. E is a plate or diaphragm resting upon the offset or shoulder of the burner-cone, and preferably provided with perforations, and F is the globe supported upon the plate E. G is an annular air-chamber, arranged near or slightly below the level at which the hot air or products of combustion are discharged from the lantern.

As shown in the drawings, the air-chamber G surrounds the upper end of the globe, preferably in such manner as to leave an opening all around the globe between the latter and the air-chamber G, through which opening the air which may have become heated by contact with the globe will pass and escape upwardly,

and thereby be prevented from entering the air-chamber G. The air-chamber G is composed of an inner imperforate wall or plate, *h*, and an outer foraminous wall or plate, *i*, composed of perforated tin or any other suitable material, as clearly shown.

H H are two tubes or pipes arranged diametrically opposite each other on the outside of the globe, and connecting the annular air-chamber G with the air-chamber D below the burner-cone.

k is a short collar or sleeve fitting upon the top of the globe, and *l* is the top plate or cover, arranged above the sleeve *k*, so as to leave an annular opening between both, through which the heated air and products of combustion escape from the globe.

m is a flange surrounding the upper portion of the top sleeve, *k*, to prevent disturbing air-currents from entering the globe through the annular opening above the flange.

The flange *m* may be made straight or flaring, as may be preferred.

The top, composed of the sleeve *k*, top plate, *l*, and flange *m*, may be held against the upper end of the globe by a set-screw, *n*, working in a bail, *o*, which is attached to the air-chamber G or the tubes H, as shown in the drawings, or by any other suitable means.

When the lantern is burning the cold external air is drawn into the chamber G through the perforations in its outer wall, and flows down through the pipes H to the air-chamber D, whence it passes to the burner-cone and supplies the flame with the oxygen necessary for a complete combustion.

When the lantern is acted upon by external air-currents—for instance, when it is exposed to a high wind, or swung by the hand, or otherwise violently agitated—the external air-currents operate upon the air flowing to the flame through the tubes, and the hot air and products of combustion escape from the flame through the annular opening in the top in such manner as to completely neutralize the disturbing effects, thereby enabling the lantern to maintain a steady and uniform flame under all circumstances and in every condition of the surrounding atmosphere.

The air entering the chamber G through

the perforations of its outer wall is perfectly cool, and not mixed with any products of combustion, whereby a brighter flame is produced than in lanterns, in which the air is heated previous to supplying it to the flame, and the danger of heating the oil-receptacle is at the same time completely avoided.

I claim as my invention—

In a lantern, the combination, with the burn-

er-cone C, globe F, lower air-chamber, D, and tubes H, of the annular air-chamber, G, constructed with an inner imperforate wall, *h*, and outer foraminous wall *i*, substantially as set forth.

JOHN W. ORPHY.

Witnesses:

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