J. W. ORPHY.
Lantern.

No. 211,040. **Patented Dec. 17, 1878.**

Fig. 1.

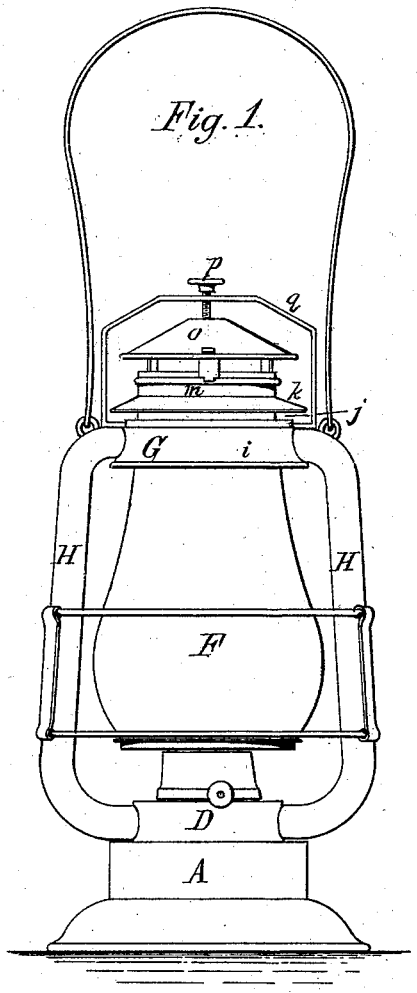


Fig. 2.

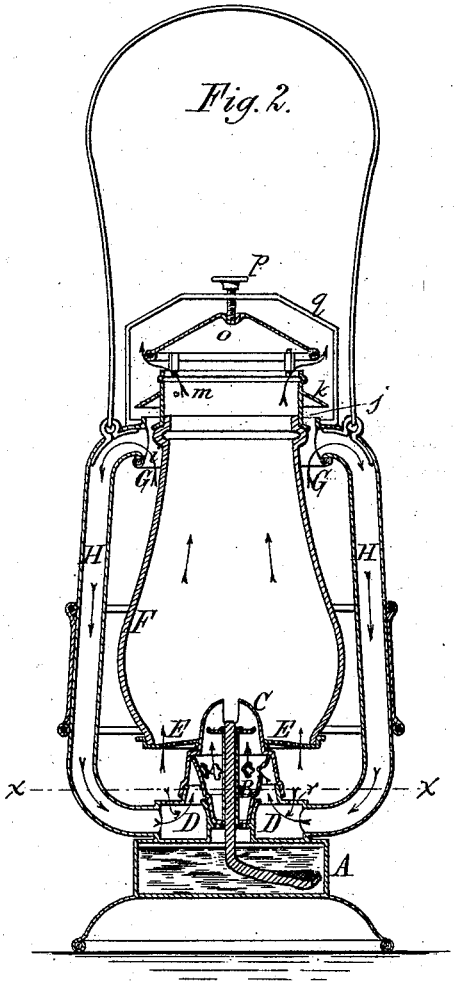
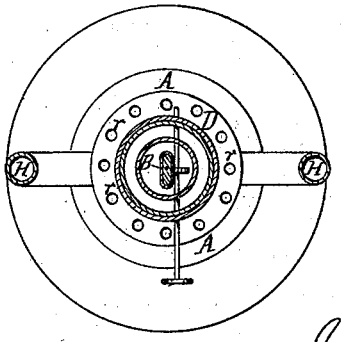


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **211,040**, dated December 17, 1878; application filed November 9, 1878.

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 drawing.

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 to produce a cheap, simple, and compact lantern, in which the flame is not affected when exposed to the wind, or extinguished when the lantern is subjected to violent agitation.

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

In the accompanying drawing, Figure 1 is an elevation, and Fig. 2 a vertical section, of my improved lantern. Fig. 3 is a horizontal section in line *x x*, Fig. 2.

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

A represents the oil-vessel; B, the wick-tube, and C the dome of the burner. D is an air-chamber, arranged upon the oil-vessel A below the burner, so as to communicate with the interior of the dome C, as shown in Fig. 2. E is a perforated plate or diaphragm resting upon the dome C, and F the globe supported upon the diaphragm E. G is an annular air-chamber, open at the top and bottom, and arranged at or below the upper end of the globe F, and H H are two tubes or pipes, connecting the chamber G with the air-chamber D, below the burner. As shown in the drawing, the chamber G is formed by a fixed annular plate or shield, *i*, to which the upper ends of the pipes H are secured, and a ring or annular top plate, *k*, arranged above the fixed ring *i*, so as to leave an annular opening, *j*, above the latter.

m is a short collar or sleeve secured within the ring *k*, so as to rest upon the upper end of the globe. *o* is a top plate or deflector, arranged above the sleeve *m*, to prevent the entrance of descending air-currents, and permit the escape of the heated air and products of combustion through the annular space below the deflector in a common manner. The top, composed of the collar *m*, ring *k*, and deflector *o*, is held against the upper end of the globe by a set-screw, *p*, passing through a bail, *q*, or by any other suitable means.

If desired, the air-chamber D may be provided with fine perforations *r* in its top, to admit a small quantity of air, if the supply through the tubes should be insufficient.

When the lantern is used in a quiet atmosphere, the air passes into the chamber G, and flows down through the pipes H to the air-chamber D, whence it ascends into the dome C, and supplies the flame with the oxygen necessary to support combustion. When the lantern is exposed to disturbing external air-currents—for instance, when it is exposed to high winds, or swung by the hand, or otherwise violently agitated—the external air-currents operate alike upon the air flowing to the burner through the tubes and the hot air and products of combustion escaping from the lantern, thereby maintaining a perfect equilibrium at the burner, and preventing the flame from being seriously affected or extinguished under these circumstances.

The air-chamber G being arranged at or below the top of the globe, the height of the lantern is considerably reduced, and the lantern is rendered very compact and convenient for use. The ring *i* may be cut away to a greater or less extent between the pipes without materially altering the operation of the device.

I claim as my invention—

1. In a lantern, the combination, with the burner-dome C, globe F, and perforated plate E, admitting the external air to the globe, of the air-chamber D, communicating solely with the interior of the dome C, and tubes H, connecting with an air-chamber, G, arranged at or below the top of the globe, substantially as and for the purpose set forth.

2. In a lantern, the combination, with the burner, globe, and pipes H H, of the air-cham-

ber G, composed of the ring *i* and top ring, *k*, arranged to leave an annular opening above the ring *i*, substantially as shown and described.

3. In a lantern, the combination, with the globe F and pipes H H, of the fixed ring *i*, secured to the upper ends of the pipes, and the ring *k*, sleeve *m*, and top plate, *o*, forming the removable top of the lantern, substantially as shown and described.

JOHN W. ORPHY.

Witnesses:
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