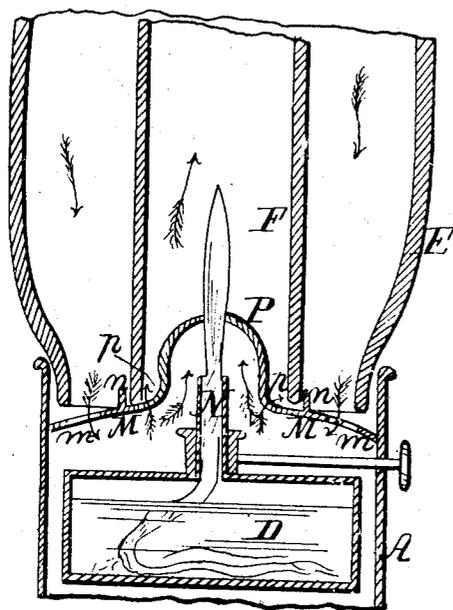


J. H. Irwin. Sheet 1, 2 Sheets.

Lantern.

N^o 65,229. Patented May 28, 1867.

Fig. 2.



Witnesses;
W. E. Mann
J. Myers

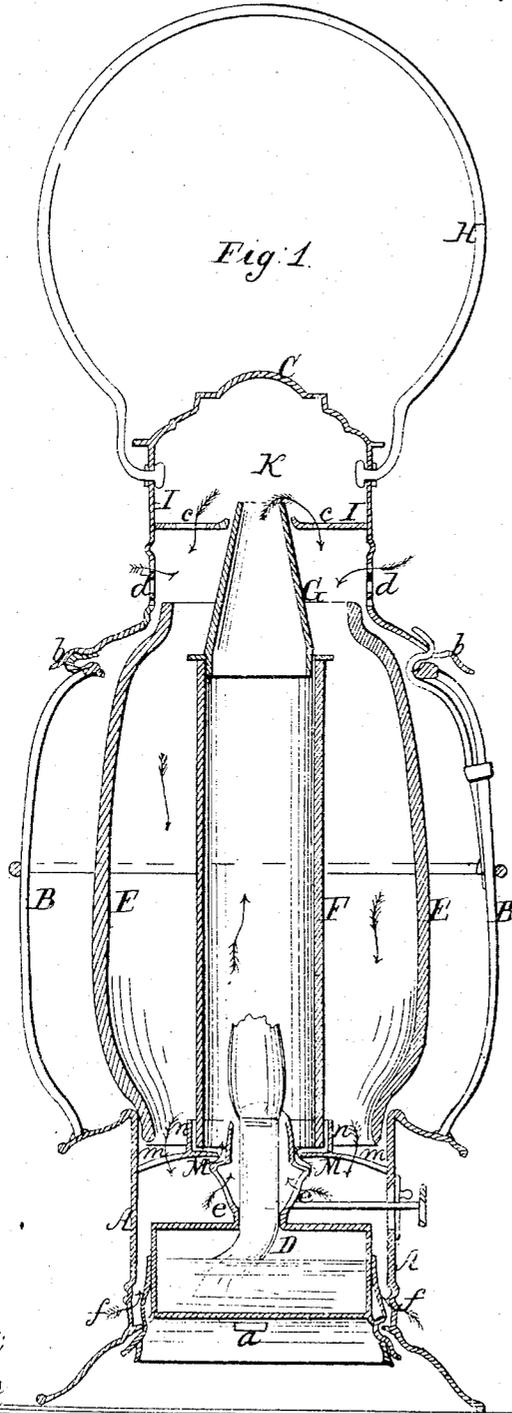
Inventor;
J. H. Irwin.

J. H. Irwin. Sheet 2, 2 Sheets.

Lantern.

N^o 65,229

Patented May 28, 1867.



Witnesses;
W. E. Mann
D. Myers

Inventor;
J. H. Irwin

UNITED STATES PATENT OFFICE.

JOHN H. IRWIN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. 65,229, dated May 28, 1867.

To all whom it may concern:

Be it known that I, JOHN H. IRWIN, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Lanters; and I do hereby declare and make known that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

My said invention relates to that class of lanterns in which two globes are used, one within the other; and it consists in so constructing the lantern that under no circumstances can a downward draft occur within the interior globe; and also in so constructing said lantern that the said interior globe may be removed from the lantern and the exterior globe thereof either by separating the guard or any portion of the lantern, or at the bottom after the oil-cup is removed, substantially as hereinafter specified.

To enable those skilled in the art to understand how to construct and use my invention, I will proceed to describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 represents a vertical central section of my invention; and Fig. 2 is a similar view, showing a different construction of the interior-globe support.

Similar letters of reference in the different figures denote the same parts of my invention.

A represents the lantern-base, in which a removable oil-cup, D, is secured in any suitable manner; B, the lantern-guard, attached in any desired manner to the upper part of said base A; and C, the lantern-top, hinged at *h*, or secured in any other suitable manner, to the top of the guard B, as shown. E represents the ordinary lantern-globe, secured in the lantern-guard so as to be removed therefrom in any of the known modes; and F represents the interior globe, surrounding the burner, as shown, the said interior globe resting in a suitable socket, *n*, upon an annular plate or diaphragm, M, which is secured either permanently or removably to the case A, as shown, and is provided with perforations *m*, through which air may pass into or from the space between the globes, as hereinafter described, *e e* representing apertures for the admission of air into the

cone of the burner to the flame, the air passing freely into said inner globe exterior to the cone, between the said cone and the inner edge of the diaphragm M, as shown. The upper end of the said inner globe may be provided with a metallic top, G, passing up through a central orifice in the horizontal partition L, which thus forms a support to keep said globe in the proper position. The said plate L is provided with holes *c*, connecting the chamber K in the lantern-top with the space between the globes, said chamber having no openings to admit the external air, receiving only the upward current through the inner globe, which descends through the apertures *c* in the partition L, and out through the openings *d* in the lantern-top below said partition L, when the lantern is stationary, or down through the space between the globes and out through the openings *m* and *f*, as shown at the lower part of the lantern in Fig. 1, when the lantern is swinging from side to side or moved suddenly upward.

In Fig. 2 the plate which supports the inner globe is formed at the center in such manner as to constitute the cone for the burner, as shown at P, *p p*, at the base of said cone, being apertures to admit air into said inner globe, serving the same purpose as the space between the cone and the plate M in Fig. 1. The burner also represents, in Fig. 2, a round wick, instead of a flat one, thus rendering the inner globe much less liable to break, as all parts of the flame are equidistant from the perimeter of the globe.

Having described the construction of my invention, I will now proceed to describe the operation of the same.

When the lantern is stationary, the inner globe acting as a draft-inducer, a current of air passes up through the apertures *e e* beneath the cone and the space immediately exterior to the cone, into the inner globe, and thence into the chamber K, whence it passes down through the openings *c* in the plate L, and out at the openings *d d*, thus securing a uniform and continuous current of fresh air to the burner, as desired. When the lantern is moved suddenly downward, the air-current is induced through the holes *f* at the sides of the base and the holes *a* in the bottom of the lantern, especially the latter, most of it passing into and through the inner globe, on account

of the rising of the heated air within, and some into the space between the globes, both currents passing upward and out at the top through the openings *d*. When the lantern is moved suddenly upward, the top of the inner globe extending up above the orifices *d* in the top of the lantern, the air entering said orifices passes down between the globes, and not into the inner globe, and goes out at the bottom through the openings *m*. This current downward, from a point below the top of the inner globe, tends to create a vacuum in the chamber *K*, which thus induces a current upward through the inner globe, thus creating a vacuum below the lower end of said inner globe, which causes the air, or a portion thereof, descending to that point between the globes, to pass into said inner globe, thus keeping a constant upward current of fresh air through the said inner globe, as desired. When the lantern is oscillated or swung from side to side, the ascending current in the inner globe and the downward current between the globes are maintained in the same manner.

The essential feature of my invention, so far as the regulation of the air-currents above described is concerned, consists in passing the top of the inner globe far enough above all the openings in the top of the lantern to admit external air to prevent the downward currents aforesaid from passing into the top of the inner globe. The same result would be secured

by placing a dome or cap over the top of the inner globe, extending its sides below the top of said globe, even though the lantern-top should be perforated above the top of the inner globe, as the practical effect of such arrangement would be to bring the openings below the top of the globe, so far as their effect thereupon is concerned.

It will be observed, from the foregoing description of the construction of the lantern, that the oil-cup may be removed from the same without disturbing the interior globe.

Having described the construction and operation of my invention, I will proceed to specify what I claim and desire to secure by Letters Patent.

1. I claim extending the top of the inner globe, *F*, above the holes *d* in the lantern-top, substantially in the manner and for the purposes specified.

2. I claim supporting the said inner globe in such a manner that the oil-cup can be removed from the lantern without disturbing said globe, substantially as specified.

3. I claim so constructing a lantern that the interior globe can be removed from the lantern independently of the oil-cup, substantially as described.

J. H. IRWIN.

Witnesses:

W. E. MARRS,
D. MYERS.