

No. 894,235.

PATENTED JULY 28, 1908.

F. A. SATTER  
LANTERN.

APPLICATION FILED FEB. 7, 1907.

FIG. 1.

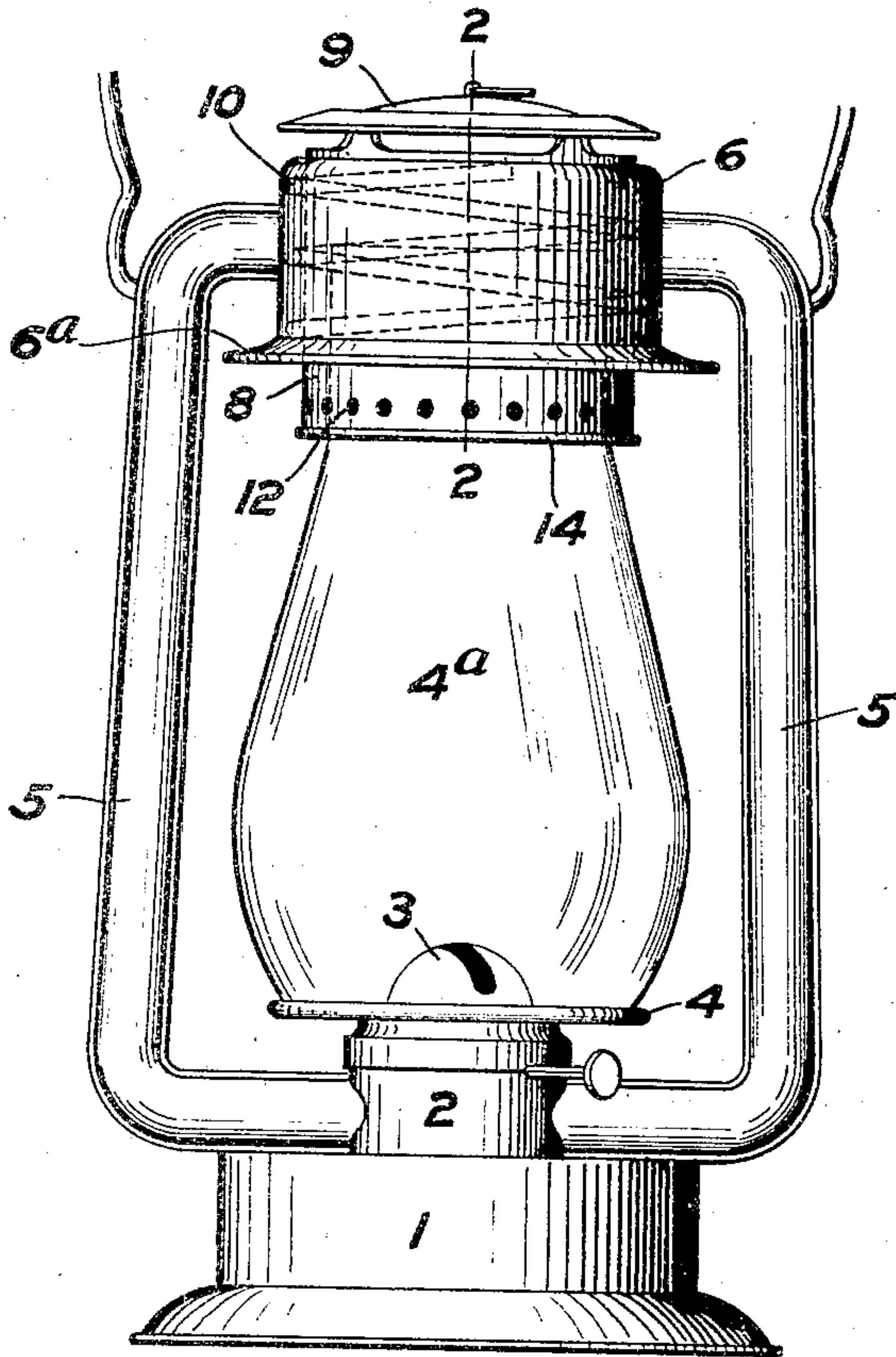
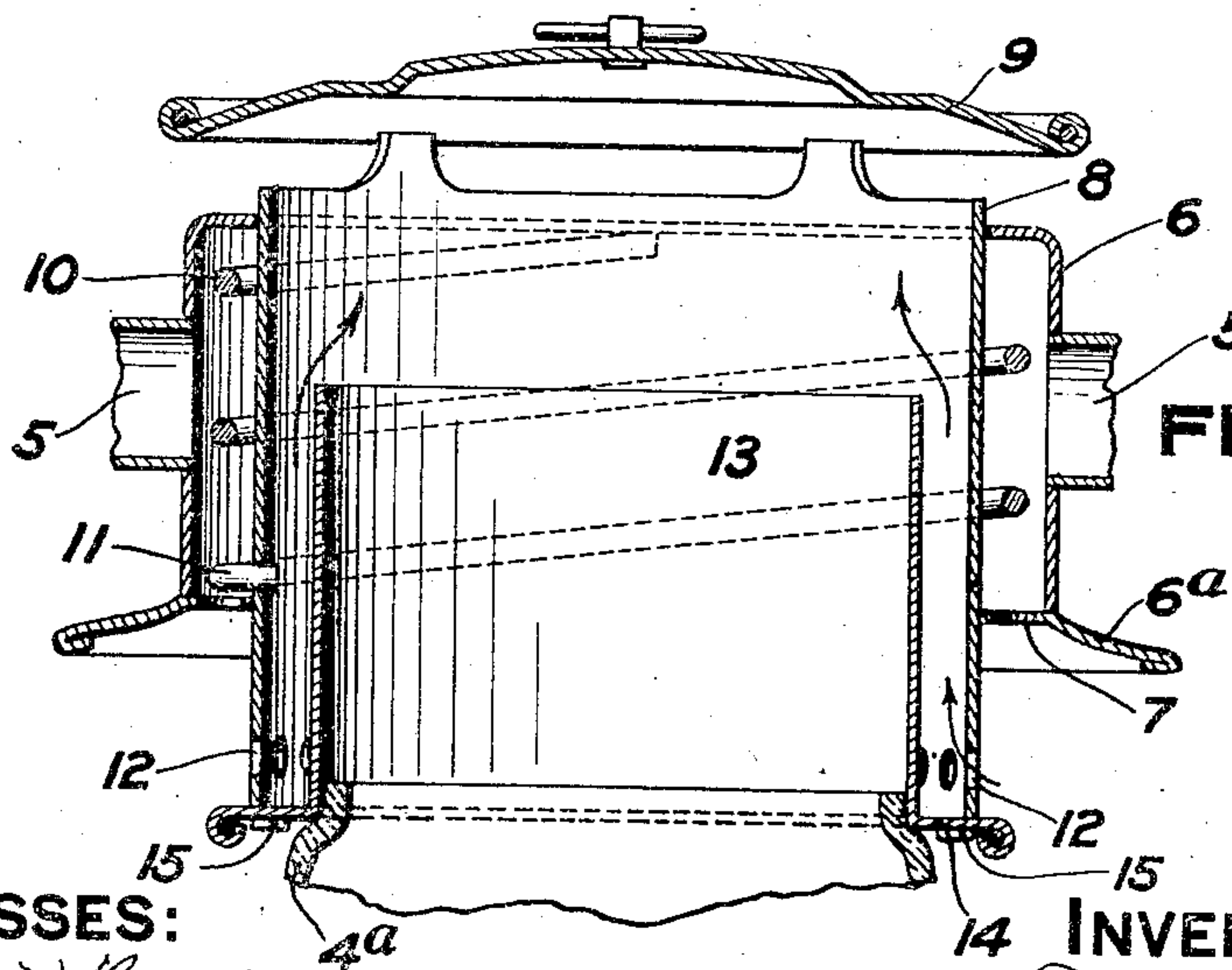


FIG. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## LANTERN.

No. 894,235.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed February 7, 1907. Serial No. 356,262.

*To all whom it may concern:*

Be it known that I, FRANK A. SATTER, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Lanterns, of which the following is a specification.

This invention relates to lanterns and particularly to tubular lanterns of the "cold blast" variety.

The invention consists in the combination of parts hereinafter described and claimed.

The object of the invention is to produce a lantern of good burning qualities and having power to resist the effect of drafts or currents of air.

In the drawings:—Figure 1 is an elevation of a lantern embodying this invention; and Fig. 2 is a vertical section on a plane at right angles to the plane of the line 2—2 of Fig. 1.

The invention in this lantern consists in the improved construction whereby currents of air blowing upon the lantern are caused to improve and not to decrease the burning qualities.

In the drawings, 1 is the oil tank, 2 is the gallery, 3 is the burner cone, 4 is the globe plate resting upon the burner cone, 5, 5 are the air tubes connected at their lower ends with the gallery 2 and at their upper ends with the collar 6 forming part of the head of the lantern. The upper end of the collar 6 is composed of an inturned flange, and the bottom of the collar has attached to it a flange 6<sup>a</sup>. The perforations 7, which may be in the flange 6<sup>a</sup>, constitute an opening into the bottom of a chamber formed by the collar 6 and a tube 8 of cylindrical form, which is adapted to slide up and down in said collar. The top of the collar and the perforated bottom thereof form the guides for the movement of the tube 8. A cover or cap 9 is supported above the upper end of the tube 8 to protect it in the usual way. A spring 10 lies between the collar 6 and the tube 8, and so engages them as to press the tube 8 downward with reference to the collar. A convenient mode of connecting the spring is to insert one end 11 through an opening in the tube 8, to coil the spring around the said tube, and to allow the other end of said spring to rest against the top of the collar 6. The end 11 of said spring will act as a stop for the downward movement of the tube 8

when the parts are released from the globe 4<sup>a</sup>. Around the bottom edge of the tube 8 are a series of perforations 12, whereby air is admitted into said tube.

The parts thus far described have been known, and when they are employed without adjuncts, the lower edge of the tube 8 rests upon the upper end of the globe 4<sup>a</sup>, and the pressure of the spring 10 retains the globe in place upon the globe plate 4. In this case a cross draft of air entering the holes 12 tends to distribute itself inside the tube 8 and the globe 4<sup>a</sup>, and will have a depressing effect upon the flame. This invention resides in means for preventing this effect of a cross draft or blast of air.

To the bottom of the outer tube 8 is fixed an inner tube 13 shorter than the tube 8 and having the outwardly turned bottom flange 14. A convenient way of fastening the parts together is to provide on the bottom edge of the tube 8 a series of tongues 15 which may pass through the slots in the flange 14, and when the tongues are bent will hold the two parts together. This particular construction is not essential, and any construction or connection of the parts, whereby an air chamber or channel is formed between the tubes 13 and 8, so that air passing into the holes 12 will be directed upward through the tube 8, is in accordance with this invention.

In this example of this invention the tube 13 is cylindrical and with a bottom flange, but it is not intended to limit my claims to these constructions.

In the form of the device shown in the drawings the lower end of the tube 13 where it joins its flange 14 is adapted to press upon the shoulder, or upon the upper edge, of the globe 4<sup>a</sup>, and the pressure of the spring 10 communicated through the tube 8 holds the globe upon the globe plate 4.

When the lantern is burning in quiet air, a column of heated air rises from the flame and passes up through the tubes 13 and 8 out through the openings under the cover 9; this sucks the air in through the openings 7 and down through the air tubes 5 to the gallery and burner cone. When the lantern is swung in the hand or a high wind blows against it, the air that passes under the cover into the tube 8 will be partly discharged through the openings 12 and will partly descend through the tube 13 on the flame.



But some air will enter by the openings 7, pass down the air tubes and balance the pressure at the flame. The tube 13 shields the interior from the incoming drafts common to all lanterns of the cold blast type that have a row of perforations in the globe tube 8 immediately above the globe, and the air entering said perforations is directed upwardly so that the draft of the lamp is not diminished but  
10 aided.

What I claim is:—

1. In a tubular lantern, air tubes, a collar having an inturned top and having perforations through its sides connecting with the  
15 upper ends of said air tubes, an outer tube inside said collar and passing through the top thereof and having perforations below said collar, and an inner tube inside the first mentioned tube, the bottom of the space between  
20 the two tubes being closed and being below said perforations in the outer tube.

2. In a tubular lantern, air tubes, a collar having perforations through its sides connecting with the upper ends of said air tubes,  
25 an outer tube inside said collar having perforations below said collar and with said collar inclosing a space closed at the top and open at the bottom, an inner tube inside said  
30 first mentioned tube, the bottom of the space between the two tubes being closed and being below said perforations in the outer tube.

3. In a tubular lantern, air tubes, a collar having an inturned top and having perforations through its sides connecting with the upper ends of said air tubes, a flange extending from the bottom of said collar, an outer tube inside said collar and passing through the top thereof and having perforations below said collar, whereby the collar and said tube form an air chamber closed at the top  
40 and open at the bottom, an inner tube inside said first mentioned tube, the bottom of the space between the two tubes being closed and being below the said perforations in the outer tube.

4. In a tubular lantern air tubes, a collar having perforations through its sides connecting with the upper ends of said air tubes, an outer tube inside said collar having perforations below said collar and with said collar  
50 forming an air space closed at the top and open at the bottom, and an imperforate inner tube inside said first mentioned tube and attached thereto below the perforations in the latter, the bottom of the space between  
55 the two tubes being closed and being below the said perforations in the outer tube.

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Witnesses:

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