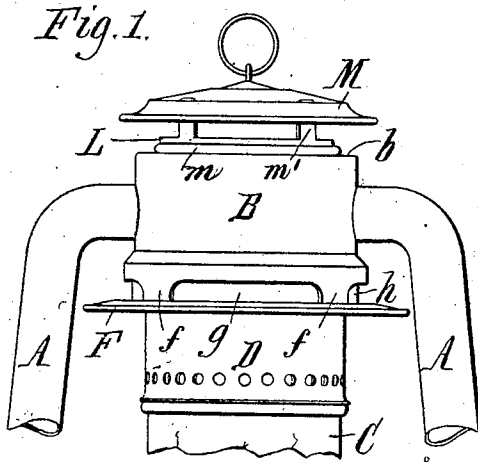
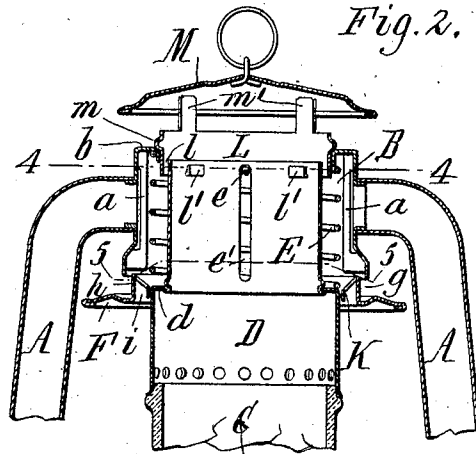
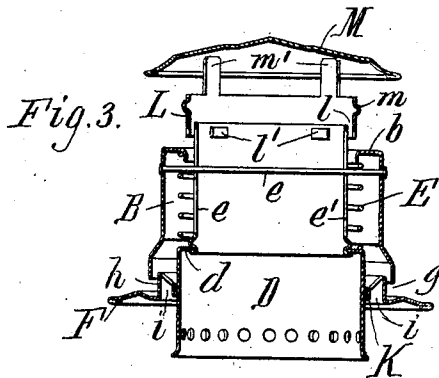
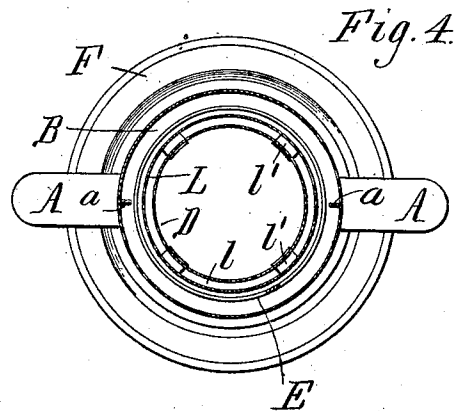
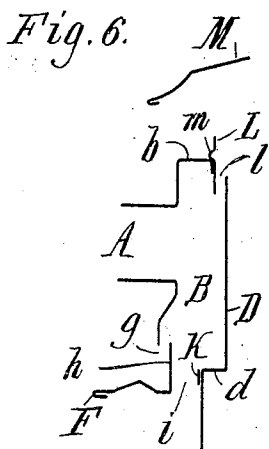
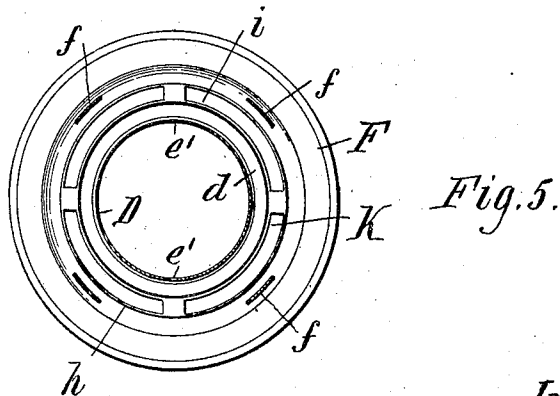


No. 835,806.

PATENTED NOV. 13, 1906.

C. BERGENER.
TUBULAR LANTERN.
APPLICATION FILED SEPT. 27, 1904.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES BERGENER, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE C. T. HAM MANUFACTURING COMPANY, OF ROCHESTER, NEW YORK.

TUBULAR LANTERN.

No. 835,806.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed September 27, 1904. Serial No. 226,188.

To all whom it may concern:

Be it known that I, CHARLES BERGENER, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Tubular Lanterns, of which the following is a specification.

This invention relates to that class of tubular lamps and lanterns in which the tubes are supplied mainly with fresh or external air and only to a limited extent with air which is more or less contaminated by products of combustion, and has special reference to a lantern of this general character in which the chimney is surrounded by an air-chamber which receives the air for the supply of the flame from below and in which the chimney is vertically movable toward and from the globe for holding or releasing the latter. A lantern of that kind is disclosed, for instance, in my Letters Patent No. 378,648, dated February 28, 1888.

The object of this invention is to improve the devices whereby air is supplied to the air-chamber with a view of avoiding the injection of an excessive quantity of air into the chamber and also preventing excessive downward blasts in the chimney.

In the accompanying drawings, Figure 1 is a side elevation of the upper portion of a tubular lamp or lantern provided with my improvements, showing the chimney resting on the globe. Fig. 2 is a sectional elevation of the same parts. Fig. 3 is a similar sectional elevation at right angles to Fig. 2, but showing the chimney raised from the globe. Figs. 4 and 5 are horizontal sections in lines 4-4 and 5-5, Fig. 2, respectively. Fig. 6 is a fragmentary diagrammatic vertical section of the lamp-top on an enlarged scale.

Like letters of reference refer to like parts in the several figures.

A represents the side tubes of a tubular lamp or lantern, and B the air-chamber, to the side of which the upper ends of the tubes are secured. Upright deflecting-plates *a* may be arranged in the air-chamber across the mouth of each air-tube. The lower portion of the lamp or lantern may be constructed in any suitable or well-known manner.

C represents the globe, and D the chimney, which rests upon the globe and holds the latter in place in the lantern.

E represents the usual spiral spring, which

surrounds the chimney and holds the latter yieldingly upon the globe, so that by raising the chimney against the pressure of this spring the globe is released. This spring bears with its lower portion against an annular shoulder *d* or some other suitable stop on the chimney and with its upper portion against the top *b* of the air-chamber or some other suitable stop on the same. A cross-wire *e* extends through vertical slots *e'* in the chimney, which slots guide the chimney and also establish communication between the interior of the chimney and the air-chamber.

The air-chamber is closed at the top by its inturned top portion or wall and is open at the bottom for the injection of air for the support of the flame. F represents a horizontal injecting-flange arranged below the open lower end of the air-chamber and secured thereto by depending arms *f*, formed on the air-chamber, or other suitable means, so as to form air-inlets *g* between the flange and the air-chamber. The flange is provided at its inner edge with an upturned collar *h*, which projects upwardly on the inner side of the lower portion of the air-chamber and is separated from the chimney by an air-passage *i*. The flange is further provided with a guide-ring or perforated gallery K, in which the lower portion of the chimney is guided.

L represents an upright air-deflecting collar or cylindrical wall which is arranged around the upper portion of the chimney and extends a short distance above and below the upper edge of the chimney. This injecting-collar is separated from the chimney by an annular air-passage *l* and may be secured to the chimney by legs *l'* or by other suitable means. This collar fits snugly in the inturned top portion *b* of the air-chamber, so as to slide therein in raising or lowering the chimney, and may be provided with an external stop or bead *m*, which limits the downward movement of the chimney.

M represents the cap or top plate, which is arranged at a suitable height above the chimney and injecting-collar and which is preferably supported by legs *m'* from the collar. The chimney and its surrounding deflecting-collar are open at the top, so that under ordinary conditions the products of combustion escape freely from the chimney and collar in an upward direction.

The upright deflecting collar or cylinder L

does not extend downward to the mouths of the air-tubes and does not obstruct the air-chamber B between the tubes and the chimney. Air-currents which tend to move upwardly or downwardly in the air-chamber between the mouths of the tubes and the chimney are not intercepted or deflected by this collar. When an air-current blowing obliquely into the space between the cap and the injecting-collar strikes the latter, it is in part deflected downwardly through the passage *l* between the collar and the chimney and passes downwardly through said passage into the air-chamber. Such deflected currents are by this means prevented from blowing down the chimney with full force, which is objectionable, because such blasts cause the flame to smoke and sometimes extinguish the same. The part of the current which is deflected downwardly through the annular passage *l* into the air-chamber flows downwardly through said chamber and diffuses itself therein more or less, according to the strength of the current. If the downwardly-deflected current has considerable strength, a considerable part of the current will pass directly downwardly through the air-chamber and escape therefrom through the passages at the lower end of the chamber. This avoids an excessive injection of air into the tubes and the depression of the flame resulting therefrom. On the other hand, when a blast strikes the air-chamber in an upward direction and enters the lower portion of the chamber with great force it will vent itself by escaping in part upwardly through the air-passage between the injecting-collar and the chimney, thus avoiding an excessive injection of air into the tubes from that cause. This injecting-collar modifies in these and other ways the action of downward as well as upward air-currents and prevents excessive action in either case, but does not obstruct

the air-chamber or interfere with the diffusion of the air therein, thereby rendering the flame steadier and brighter.

I claim as my invention—

1. In a lamp or lantern, the combination of an air-chamber having a closed top, which resists the escape of the air from the chamber in an upward direction, and having at its bottom a passage for the ingress and egress of air, an air-tube connected with said chamber, a chimney arranged within said chamber, an upright deflecting-collar which surrounds the upper portion of the chimney and extends above and below the top edge of the same, said collar being separated from the chimney by an annular air-passage and having its lower edge arranged above the mouth of the air-tube, and a cap which surmounts the chimney and collar, substantially as set forth.

2. In a lamp or lantern, the combination of an air-chamber having a closed top, which resists the escape of the air from the chamber in an upward direction, and having at its bottom a passage for the ingress and egress of air, an air-tube connected with the outer wall of said chamber, a chimney arranged within said chamber, an upright deflecting-cylinder which surrounds the upper edge of the chimney and extends a short distance above and below the same but leaves the air-chamber at the mouth of the tube and below the same unobstructed, said cylinder being separated from the chimney by an air-passage which opens into the upper portion of the air-chamber, and a cap which surmounts the chimney and cylinder, substantially as set forth.

Witness my hand this 17th day of September, 1904.

CHARLES BERGENER.

Witnesses:

EDWARD WILHELM,
C. B. HORNBECK.