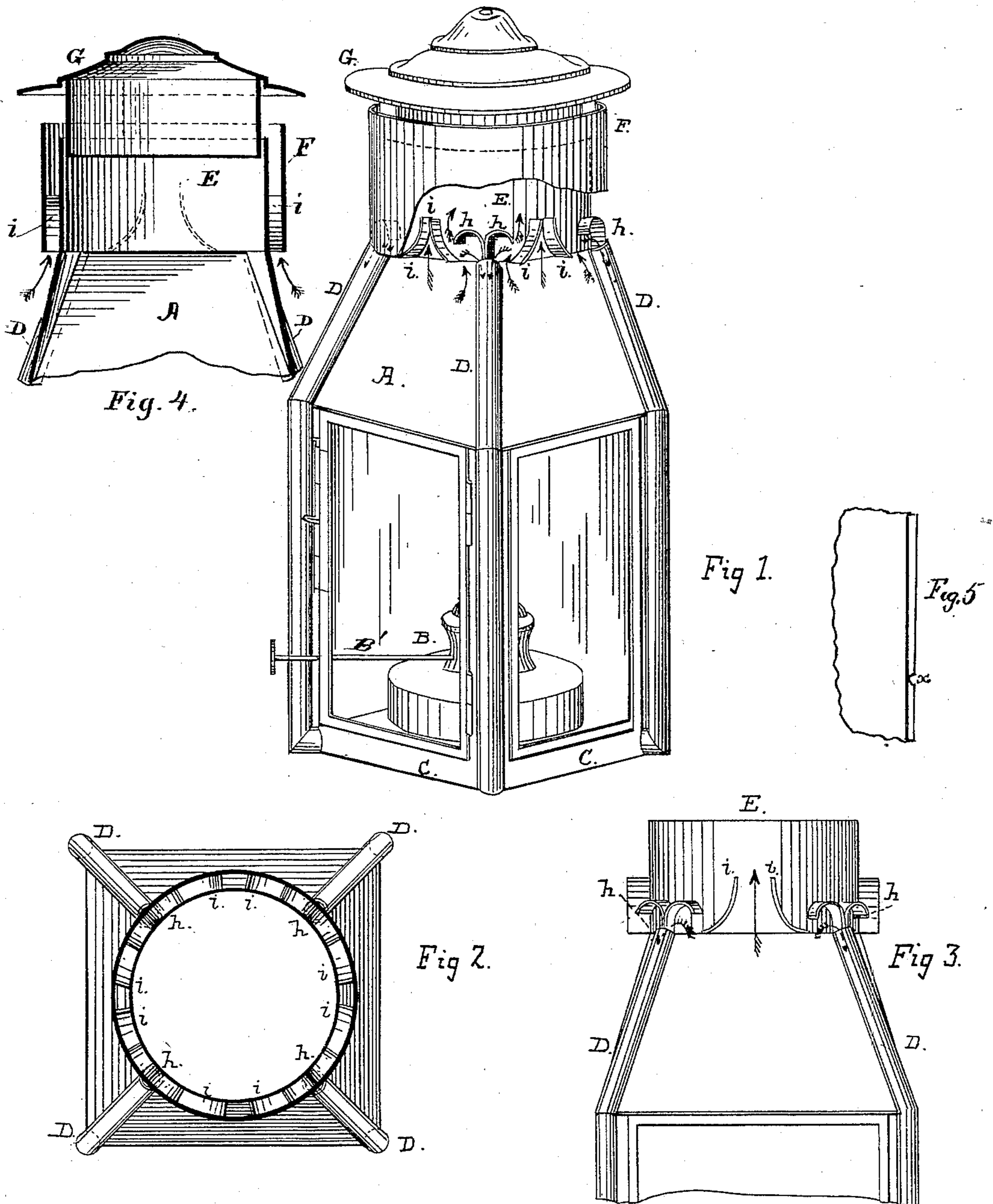


(No Model.)

E. BOESCH.  
TUBULAR LANTERN.

No. 277,444.

Patented May 15, 1883.



Witnesses:

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# UNITED STATES PATENT OFFICE.

EMILE BOESCH, OF SAN FRANCISCO, CALIFORNIA.

## TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 277,444, dated May 15, 1883.

Application filed July 20, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, EMILE BOESCH, of the city and county of San Francisco, in the State of California, have invented certain new and useful Improvements in Tubular Lanterns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention has reference to that class of lanterns known as "tubular lanterns," in which air is supplied to the flame through the burner by means of exterior tubes which take the air from the outside of the lantern and conduct it into a chamber or reservoir underneath the burner.

My invention relates to a novel arrangement of the exterior air-tubes, in combination with a peculiar construction and arrangement of the chimney or top of the lantern, and certain deflectors which serve to divide the exterior air into two currents, one of which is directed into the tubes, while the other passes into the chimney and mingles with the exhaust or draft current, thus producing one downward current through the tubes for supplying air to the burner, and two upward currents, one of which is internal and the other external. The upward external current serves to steady the draft or interior current and preserve a steady and uniform flame at the burner.

Referring to the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a top view with the cap or roof removed. Fig. 3 is a side view of my improved lantern. Fig. 4 is a vertical central section of the chimney. Fig. 5 is a detail showing the edge of the side of the lantern against which the door closes, with a notch in it for the passage of the shaft which is turned to raise and lower the wick.

Let A represent a lantern the body of which is air-tight.

B is the burner. Underneath it is an air chamber or reservoir, C, into which air is supplied through exterior air-tubes, D, one at each corner of the lantern.

The upper portion of the lantern slopes toward the top on its four sides, as shown.

The lantern I provide with a double top or chimney, the inner chimney, E, being smaller in

diameter than the outer chimney, F. The inner chimney, E, is attached to the top of the lantern, while the outer and larger chimney is independent and sets down outside the inner chimney, leaving an annular space between them. The upper end of the inner chimney is open, while the outer chimney has a roof or cover, G, attached to it at a short distance above its upper end. The air tubes or conductors D, I bend, so that they follow the curve of the corners of the lantern, and I terminate them just below the annular space between the inner and outer chimneys. In the lower part of the annular space between the two chimneys I secure a series of curved deflectors, on each side, by means of which the external air which attempts to pass up into the annular space is divided into two currents, one of which is directed into the upper open ends of the tubes, and the other passes up through the annular space and mingles with the draft or chimney current, which rises through the inner chimney from the lamp. A double curved or convex deflector-plate, *h*, is arranged to direct a portion of the outside current from each side into each tube. Between the curved plates *h*, I secure, at a short distance apart, two other curved plates, *i i*, which are placed back to back, with their upper ends separated a short distance, while their lower ends gradually diverge and extend below and close to the ends of the plate *h*. A set of curved deflector-plates, similar to the ones just described, is arranged between each two tubes on each side of the lantern. The heat of the draft-current, which rises through the inner chimney, will cause a current of air to be drawn into the annular space between the two chimneys. This current will be divided by the deflector-plates into two currents. The double plates *h h* will direct a portion down into each tube D, while the curved plates *i i* will direct another portion up into the annular space between the chimneys, so that the lamp produces three currents. The same result will be obtained if an outside current of wind should strike the outside of the lantern, the effect being to divide the current and send a portion of it through the tubes D into the reservoir below the burner, and the other portion up through the annular space to

assist the draft, thus equalizing the pressure above and below the flame and producing a steady light.

The outside chimney, F, is higher than the inner chimney, E, so that if a current of air should enter between the outside chimney and its top or cover G it will strike across against the projecting portion of the outside chimney on the opposite side and be thrown down into the annular space, thus preventing it from acting downward into the body of the lantern, and as the current which enters between the chimney and its top is less than equal in force to the current which passes up through the annular space, its effect is counteracted, and hot air is prevented from being forced into the tubes.

The important feature necessary in producing a steady and uniform flame of the highest quality in a lamp or lantern is to preserve a steady and uninterrupted draft up through the chimney. When this is done, and a sufficient quantity of fresh air is supplied to the burner, the result is a pure white flame of the best quality.

It will be noticed that I support the air-tubes D so as to leave a space between them and the corners of the lantern. This is to prevent the heat of the lantern from heating the tubes and air, as it is desirable that the air which is supplied underneath the burner be in as cool a condition as possible.

By dividing the supply-current into two currents and directing one current into the reservoir under the burner and the other into the exhaust or draft current in the chimney I provide a regulator which prevents a shock or puff of wind from affecting the flame in the lantern.

In this class of lanterns it is advisable that no air be admitted into the flame-chamber, un-

less it comes through the reservoir and burner. I therefore provide for raising and lowering the wick without opening the door by simply extending the rod that turns the wick-raisers out through the body of the lantern, so that the wheel on the end of the shaft or rod will be outside the lantern. I also provide for readily removing the lamp by making a notch in the edge of the side of the lantern, against which the door closes for the passage of the rod or shaft. This is shown in Fig. 5, where *x* represents the notch. The notch may be in the edge of the door.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The lantern A, provided with an inner and outer chimney-top, and having the air-tubes D, arranged to terminate at or near the lower end of the annular space between the two chimney-tops, in combination with the deflectors *h i*, arranged as described for separating the outside current and directing one portion into the feed-tubes and the other portion up into the annular space between the chimney-tops, substantially as described.

2. In a lantern, the combination, with the body thereof, having a door, and a notch between the door and the part of the body against which it closes, of a lamp having the wick-raising shaft extended out through the notch beyond the body of the lantern, whereby the wick can be manipulated without opening the door, and the lamp may be readily removed when the door is opened, as set forth.

In witness whereof I have hereunto set my hand and seal.

EMILE BOESCH. [L. S.]

Witnesses:

WM. T. CLARK,  
EDWARD E. OSBORN.