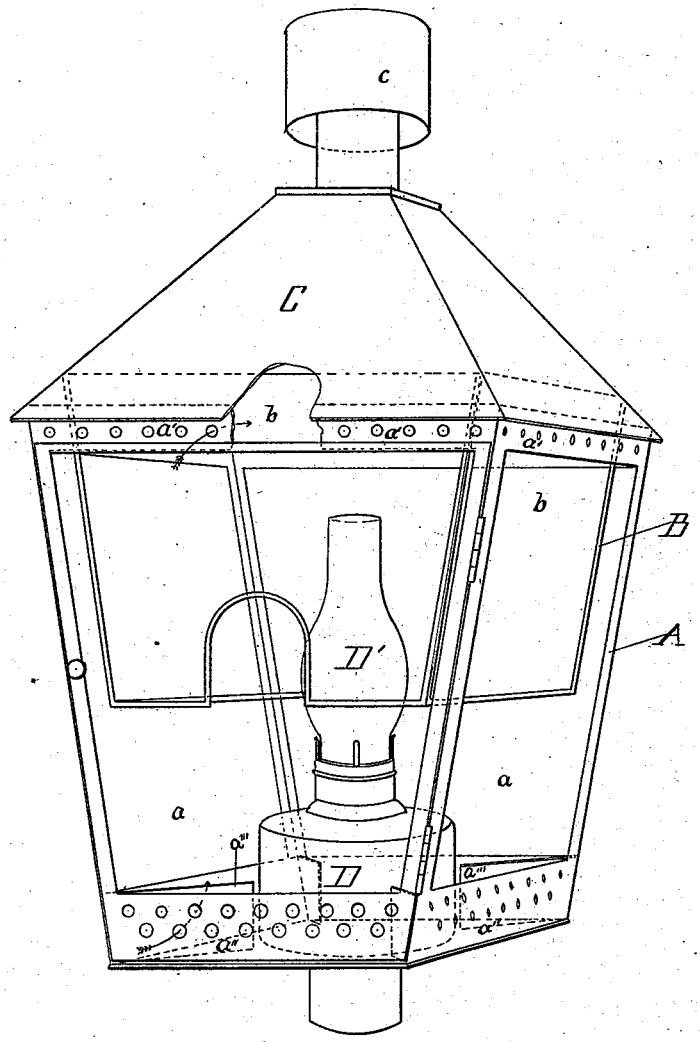
(No Model.)

F. RHIND.

LANTERN.

No. 382,831. Patented May 15, 1888.



Witnesses.
S. J. Roby.
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UNITED STATES PATENT OFFICE.

FRANK RHIND, OF MERIDEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO EDWARD MILLER & COMPANY, OF SAME PLACE.

LANTERN.

SPECIFICATION forming part of Letters Patent No. 382,831, dated May 15, 1888.

Application filed May 31, 1887. Serial No. 239,727. (No model.)

To all whom it may concern:

Be it known that I, FRANK RHIND, a citizen of the United States, residing at Meriden, county of New Haven and State of Connecticut, have invented an Improvement in Lanterns, of which the following is a specification.

My invention relates to that class of lanterns which is adapted to receive a lamp requiring a chimney, and is intended to prevent the smoking of the chimney or the extinguishing of the flame by the force of the wind. It is especially advantageous when applied to street-lamps, where a large steady flame is required.

In the accompanying drawing, which represents in perspective a street-lantern embodying my improvement, A designates a body or frame of a lantern provided with polygonal sheets of glass *a* and with plates of perforated metal *a' a''* at its upper and lower edges; *a'''*, a wind guard or metal wall attached to the bottom of the frame A; B, an inner frame or body, also provided with polygonal sheets of glass *b;* C, a roof or top, which may have a cowl, *c;* D, a lamp; D', a chimney in the lantern.

My invention is constructed and operated as follows: The body or frame A of the lantern is constructed of the ordinary material and in the usual shape, a solid metal bottom and a frame flanged or recessed to receive the glass sides *a* being the form shown. Below the sheets of glass *a* strips of perforated metal *a''* are firmly secured to the bottom and frame of the body A. Through these strips *a''* air is admitted to support the flame and produce an upward current. Vertical walls or wind-guards *a'''* are attached to the bottom of the lantern frame or body A. They are of substantially the same height as the perforated strips *a''*, and serve to prevent eduction of air at the bottom of the lantern. In the drawing they are shown as extending radially from the lamp D to the corners of the frame A.

Above the sheets of glass *a* other strips of perforated metal, *a'*, are secured to the frame. Through these strips *a'* air may pass into or out of the lantern, as will be more fully explained. The inner frame or body, B, is preferably made integral with the roof or top C, which is provided with a horizontal flange fitted to rest on the frame A, and is flanged or recessed to receive the sheets of glass *b*. A space is left between the inner sheets of glass, *b*, and the outer sheets, *a*. Through this space must pass all the air that passes through the perforated strips *a'*. The roof or top C may be made of glass or metal, as desired, and is provided with a cowl of any suitable construction. When the lamp and lantern are in use in calm weather, a large supply of air enters through the perforations in the strips *a''* at the bottom of the lantern. A portion of this air is used to support combustion. The remainder, with the products of combustion, passes upward and escapes partly through the cowl *c*, partly through the spaces between the sheets of glass *b* and the sheets *a*, thence through the perforated strips *a'*. When, however, a wind of considerable force is blowing, a downward current of air is sometimes created through the cowl *c*, which tends to create a similar downward current in the lamp-chimney D', thus causing imperfect combustion with discoloration of the chimney, and frequently extinguishing the flame. To overcome this difficulty is a main object of the present construction. When a downward current is created through the cowl *c*, a similar downward current is produced by the same force on one or more sides of the lantern in the space between the glass sheets *a* and *b*, air being forced through the perforated strips *a'* on the corresponding sides. As the glass walls or sheets *b* extend to or below the top of the chimney D', these two downward currents cannot join in passing down the chimney D'. On the contrary, the current which passes through the perforated strip *a'* and downward between the walls *b* and *a* tends to assist the current which flows through the strips *a''* in creating a pressure of air at the bottom of the lantern and to neutralize the downward current through the cowl *c*. In practice a lantern of this construction is found to withstand a strong wind without seriously altering the shape or size of the flame.

I have drawn and described a street-lantern of ordinary square pattern; but it is obvious that the invention is equally applicable to street-lamps of cylindrical or globular form, it only being essential to my invention that double translucent walls be employed, with an air-

space between them, and that the inner wall shall extend downward to a point between the top of the lamp-chimney and the bottom of the lantern. It is equally obvious that my invention is applicable to hand-lanterns of various shapes, to ship or reflector lanterns, and to nearly all forms of inclosed lamps for outdoor use.

The particular advantage of my invention, in addition to that above named, is that by means of the upward or downward current of air passing between the walls *a* and *b* the outer wall, *a*, is kept at so low a temperature as not to be liable to breakage from the contact with its exterior surface of rain or snow. Hence a street-lantern of ordinary size constructed as above described may be used with a lamp giving a much larger flame than has heretofore been customary, and is particularly adapted for a large Argand or center-draft lamp.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is as follows:

1. In a lantern, the combination of a chimney-bearing lamp, a translucent chimney acting in conjunction with said lamp, an outer translucent lantern-wall, an opening for the admission or emission of air at the upper edge of said outer wall, and an inner translucent lantern-wall separated from the outer wall by an air-space and extending downward to a point below the top of the lamp-chimney and above the lower edge of the outer wall, substantially as described.

2. In a lantern, the combination of a chimney-bearing lamp, a translucent chimney acting in conjunction with said lamp, an outer translucent lantern-wall, an opening for the admission or emission of air at the upper edge of said outer wall, an inner translucent lantern-wall separated from the outer wall by an air-space, and a lantern roof or top from which said inner wall depends, substantially as described.

3. In a lantern, the combination of a chimney-bearing lamp, a translucent chimney acting in conjunction with said lamp, an outer translucent lantern-wall, an opening for the admission or emission of air at the upper edge of said outer wall, an inner translucent lantern-wall separated from the outer wall by an air-space, and a lantern roof or top from which inner wall depends, said roof being formed with a covered or protected opening, substantially as described.

FRANK RHIND.

Witnesses:
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