(No Model.)

L. F. BETTS.

TUBULAR LANTERN.

No. 381,755. Patented Apr. 24, 1888.

FIG. 1.

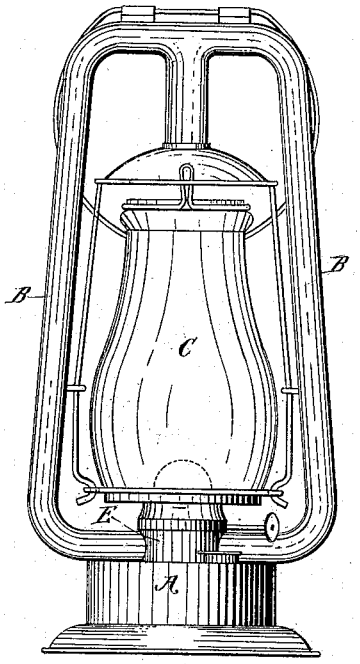


FIG. 2.

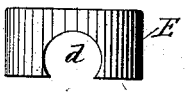


FIG. 3.

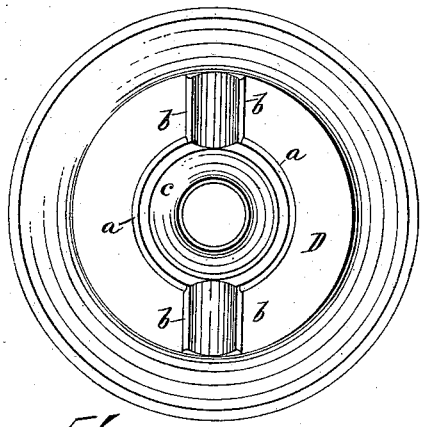


FIG. 4.

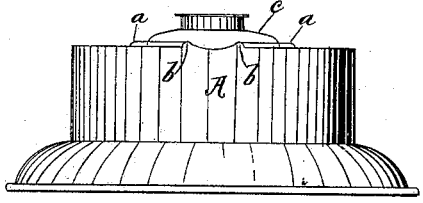


FIG. 4.

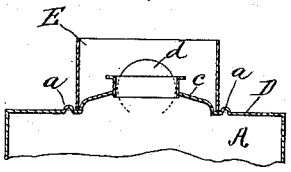


FIG. 6.

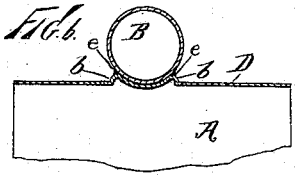
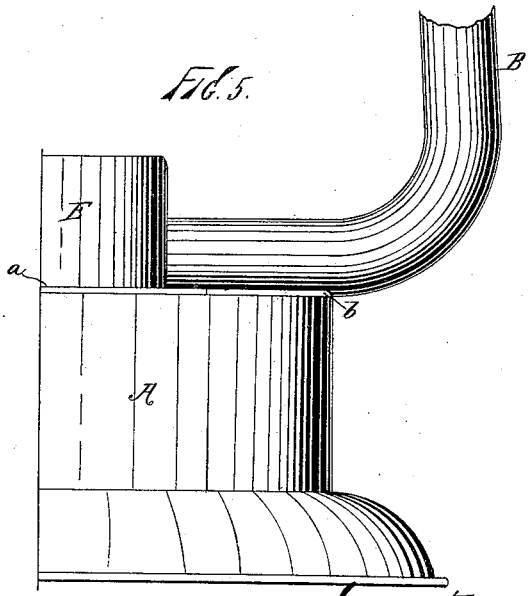


FIG. 5.



Witnesses:
John Buckler,
L. C. Osgood.

Inventor:
Lewis F. Betts,
By North Osgood,
Attorney.

UNITED STATES PATENT OFFICE.

LEWIS F. BETTS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ROBERT E. DIETZ, OF SAME PLACE.

TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 381,755, dated April 24, 1888.

Application filed November 17, 1887. Serial No. 255,406. (No model.)

To all whom it may concern:

Be it known that I, LEWIS F. BETTS, of New York city, county and State of New York, have invented certain new and useful Improvements in Tubular Lanterns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to tubular lanterns, and especially to the oil-fount air-chamber and means of uniting the tubes with the oil fount or pot, as herein described, and pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a view in elevation of a tubular lantern, showing all parts in place and illustrating one of the general forms of lanterns on which my improvements are applicable. Fig. 2 is a view, on a larger scale, in elevation, showing the air-chamber wall detached. Fig. 3 is a plan view of the top of the oil-fount, showing the ribs or ridges formed therein or thereon for the purposes of my invention; and Fig. 4 is a side elevation of the oil-fount detached from other parts. Fig. 5 is a side elevation of a fragment, (on a still larger scale,) showing one of the tubes located and held in place according to my invention; and Fig. 6 is a cross-section of a fragment, showing the joint between the tube and the oil-fount. Fig. 7 is a sectional view showing the position and manner of mounting the wall of the air-chamber in place.

In all these figures like letters of reference, wherever they occur, indicate corresponding parts.

A is the oil-pot or oil-fount; B B, the side tubes through which air for the support of combustion is carried from the region of the outlet from the globe C to the under side of the burner-cone. These are the prominent elements of a tubular lantern. They may be of various forms, and, however modified as to form, all the parts above the oil-pot are generally mounted upon or supported by the top of the oil-fount. It therefore becomes desirable to make the top plate of the oil-fount as stiff and rigid as may be required to withstand any strains liable to separate or tend to separate the upper portion of the structure from the lower portion.

D is the top plate of the oil-fount, which is usually made of sheet metal. To add to the stiffness or rigidity of this plate, I stamp or form a ridge or corrugation, *a*, therein, the same extending above the general upper surface and located around the central opening (through which the wick of the burner passes) at all points except where the air-tubes cross it to enter the air-chamber. This will prevent any bending of the top plate under any ordinary strains to which it may be subjected through the attached upper parts. I also stamp or form parallel ridges or corrugations, as *b b*, in or on the top plate, extending from the central part toward the circumference, and these add greatly to the stiffness of the plate.

Within the ring or ridge *a* the top plate is expanded, as at *c*, forming a dome which receives the burner.

E is the wall of the air-chamber. This is made separate from the top plate, perforated, as at *d*, to receive the ends of the air-tubes, and secured to the top plate by solder. The dome *c* is at its base of the same diameter as the interior of wall E, and therefore forms an accurate guide by which the wall may be properly located so as to occupy a central position with respect to the oil-fount.

The perforations in the wall E are of course located in line with the channels between the ridges *b b*. The air-chamber centrally located and the ridges *b b*, properly spaced, together constitute accurate gages for the proper location of the air-tubes. The lower portions of these are held in the position indicated in Figs. 5 and 6 and connected to the top plate of the oil-fount by applying solder in the channels or angular spaces between them and the ridges *b b*. The solder is indicated at *e*. During this operation the soldering-tool is accurately guided, so that the work may be done very quickly, and the amount of solder required is only that necessary to fill the angular space, which is very little. The union between the ends of the tubes and the wall of the air-chamber may be made air-tight by soldering in the usual way. The parts being thus united, the

upper portion of the structure is rigidly secured to the lower portion. The location of all is accurate, and the objects of the invention previously stated are well accomplished.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In a tubular lantern, the oil-fount top provided with parallel ridges or corrugations extending from the central portion to the circumference, substantially as and for the purposes set forth.

2. In a tubular lantern, the oil-fount top provided with a central dome, a ridge concentric with said dome, and parallel ridges extending from the central portion to the circumference, substantially as and for the purposes set forth.

3. In a tubular lantern, the combination of the air-tubes and the top of the oil-fount, the said top being provided with parallel ridges, between which the tubes are located, and the parts being secured by solder, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

LEWIS F. BETTS.

Witnesses:
JOHN BUCKLER,
WORTH OSGOOD.