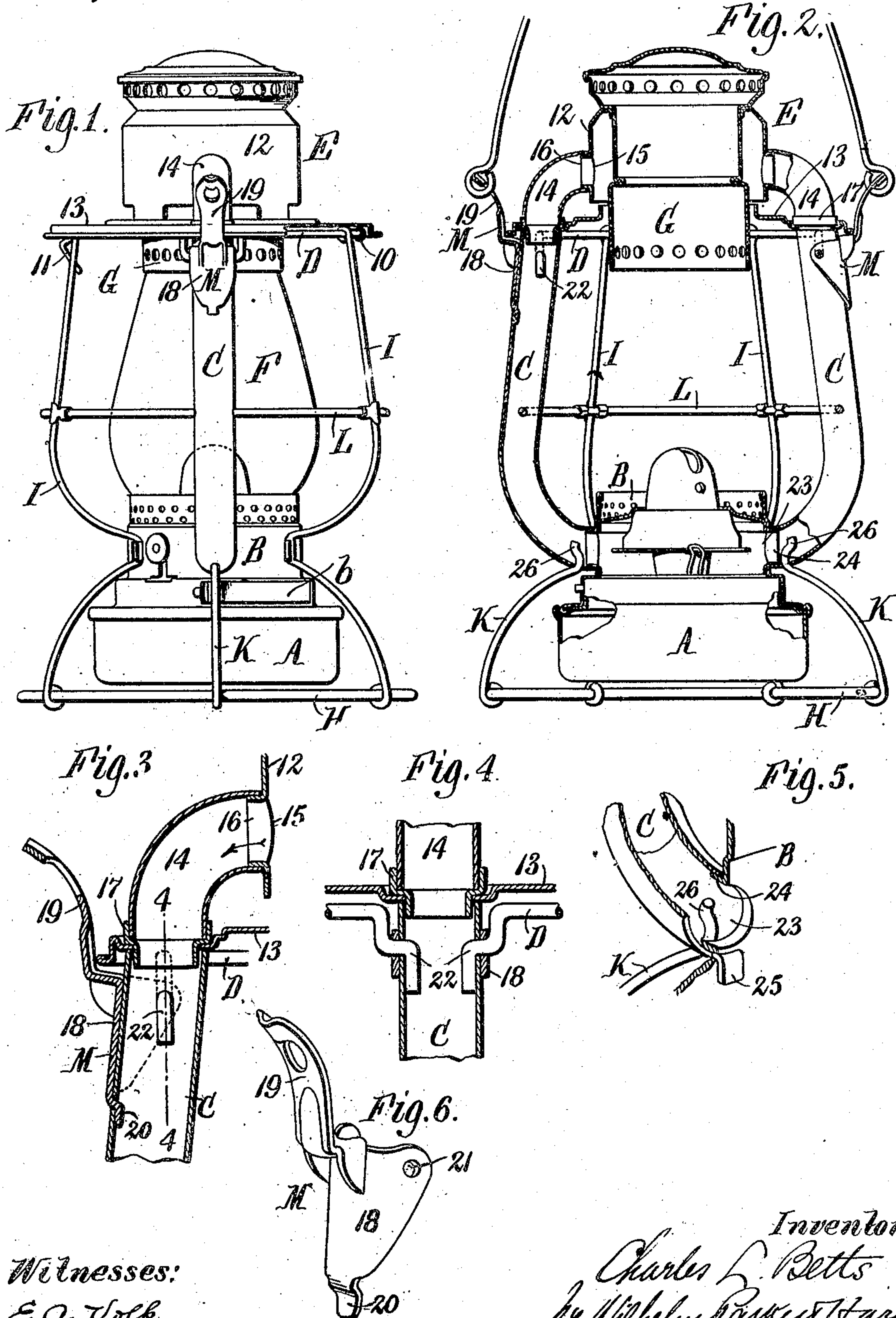


C. L. BETTS.  
TUBULAR LANTERN.  
APPLICATION FILED NOV. 22, 1906.

920,815.

Patented May 4, 1909.



Witnesses:  
E. A. Volk  
A. G. Dimond.

Inventor.  
Charles L. Betts  
by Wilhelm Parkes Ward  
Attorneys,



# UNITED STATES PATENT OFFICE.

CHARLES L. BETTS, OF NEW YORK, N. Y., ASSIGNOR TO R. E. DIETZ COMPANY, OF  
NEW YORK, N. Y.

## TUBULAR LANTERN.

No. 920,815

Specification of Letters Patent.

Patented May 4, 1909.

Application filed November 22, 1906. Serial No. 344,585.

*To all whom it may concern:*

Be it known that I, CHARLES L. BETTS, a citizen of the United States, residing at New York, borough of Brooklyn, in the county of Kings 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 mainly to a tubular lantern in which the frame or body has the form of a basket-shaped guard to which the lantern top is movably attached for introducing and removing the globe and to which the oil pot is detachably secured, as in an ordinary railroad lantern. A tubular lantern of this general type is found, for instance, in my Letters Patent No. 598,072, dated February 1, 1898.

The objects of this invention are to simplify the lantern, to facilitate the assembling of the parts in constructing the same, and to increase the strength, stiffness and durability of the lantern.

In the accompanying drawings: Figure 1 is a side elevation of a tubular lantern provided with my improvements. Fig. 2 is a partly sectional elevation at right angles to Fig. 1. Fig. 3 is a fragmentary vertical section, on an enlarged scale, of the upper portion of one of the tubes and connecting parts. Fig. 4 is a vertical transverse section in line 4-4, Fig. 3. Fig. 5 is a sectional perspective view of the lower portion of one of the tubes and connecting parts. Fig. 6 is a perspective view of one of the bail ears.

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

A represents the oil pot and B the body hoop or lower ring of the lantern frame into which the oil pot is inserted from below and to which the oil pot is detachably secured by a spring catch *b* of any suitable construction.

C represents the air tubes which are secured at their lower ends to the body hoop and which extend upwardly to about the level of the upper guard ring D.

E represents the lantern top which is movably connected to the upper guard ring, preferably, in the usual manner by a hinge 10 at the rear side and a catch 11 at the front side of the guard, so that the globe F can be introduced into the guard from above.

G represents the metallic chimney within

the lantern top which bears upon the globe and holds the latter on the body hoop.

The hinged lantern top E comprises a cylindrical outer wall 12 forming the upper annular air chamber, a horizontal flange or reflector 13 arranged below this wall and extending outwardly beyond the same and beyond the air tubes and the upper guard ring, and elbows 14 which extend from the cylindrical wall 12 to the horizontal flange 13. The cylindrical wall 12 of the upper air chamber has its side openings 15, through which the air passes from this chamber into the tubes, provided with outwardly projecting short collars 16, which enter the upper ends of the elbows 14. The lower ends of these elbows are seated in ferrules or socket pieces 17 which are arranged in openings formed in the horizontal flange 13 above the tubes. The upper portion of each ferrule is larger in diameter than the lower portion, forming a horizontal shoulder by which the ferrule rests on the horizontal flange 13. The lower contracted portion of each ferrule extends downwardly through the opening in the flange and registers with the open upper end of the corresponding air tube into which it extends, when the lantern top is closed and locked to the guard. Each elbow 14 is securely held in place by the collar 16 and the ferrule 17 in assembling the parts of the lantern top and will remain in its proper position without requiring to be tacked by solder. After the parts have been so assembled the top is dipped in molten tin in the usual way, whereby all of the parts are permanently and firmly secured together. The parts of the lantern top are so assembled and secured together in a very simple and inexpensive manner and the connections between the elbows, the air chamber and the horizontal flange so produced are very strong, rigid and durable. When the lantern top is closed upon the guard the ferrules, which form downward extensions of the elbows, project into the open upper ends of the tubes and produce a sufficiently tight joint between the latter and the elbows to prevent external air currents from exhausting the air from the upper ends of the tubes or otherwise interfering with the air currents.

The rigid lantern frame comprises the body hoop B, the air tubes C, the top guard



ring D, the bottom guard ring H, upright main guard wires or members I which extend from the top ring D to the bottom guard ring H and are secured at the waist to the body hoop B, supplemental upright guard wires or members K which extend from the lower portions of the air tubes down to the bottom ring H, and an intermediate guard ring L connecting the main upright guard members between the body hoop and the top ring, opposite the bulge of the globe. The upright guard members and rings may be of wire, as shown, or of any other suitable material.

M represents the bail ears which are secured to the outer sides of the tubes, near the upper ends thereof, and comprise an attaching plate 18 and an ear proper 19, both stamped in one piece from a blank of sheet metal. The attaching plate is curved to lie snugly against the tube and is provided at its lower end with a rearwardly offset lip 20 which is inserted into the tube through a slit in the outer side thereof. The upper corners of the attaching plate are each provided with a perforation 21 and the tube is provided with a coincident perforation, through both of which the hooked end portion 22 of the top guard ring is passed. These parts are firmly secured together by dipping when the lantern frame has been assembled, and this method of securing the upper guard ring and the bail ears greatly strengthens the upper portions of the tubes and increases the strength and stiffness of the lantern frame.

The body hoop B is provided around the opening 23 which communicates with the lower end of the tube with an outwardly projecting short collar 24 which projects into the lower end of the tube. This end is provided with a projecting lip 25 which is passed through a slit, formed in the body hoop below the collar 24, and bent down on the inner side of the body hoop. This collar and this lip hold the tube firmly in its proper position while assembling the parts and also strengthen the connection after the parts have been permanently secured by dipping.

The main upright guard members I extend inwardly adjacent to the body hoop, or at the waist of the lantern frame, and are secured to the body hoop by any suitable means. The upright supplemental guard members K are preferably secured to the lower portions of the air tubes by having their hooked upper ends 25 inserted into the tubes through openings formed in the lower sides thereof near the lower ends of the tubes. The lantern frame is also provided with an open, spider or skeleton base which exposes the oil pot to view, gives convenient access to the same, and renders the frame light and sightly.

I do not claim herein the construction of

the base portion of the lantern guard or frame because the same is claimed in a divisional application filed Jan. 2, 1909, Serial No. 470,449.

I claim as my invention:

1. In a tubular lantern, the combination of an air tube open at its upper end, an upper air chamber movable toward and from said tube, a horizontal flange below said chamber, an elbow extending from said chamber down to said flange, and a ferrule arranged in an opening in said flange and connecting with the lower end of said elbow and registering with said tube, substantially as set forth.

2. In a tubular lantern, the combination of an air tube open at its upper end, an upper air chamber movable toward and from said tube, a horizontal flange below said chamber, an elbow extending from said chamber to said flange, and a ferrule arranged in an opening in said flange above said tube and comprising an upper portion which connects with said elbow and a contracted lower portion which registers with said tube, substantially as set forth.

3. In a tubular lantern, the combination of an air tube open at its upper end, a horizontal flange arranged above said tube and movable toward and from the same, a shouldered ferrule seated in an opening in said flange above said tube, and an elbow connected with the upper portion of said ferrule, substantially as set forth.

4. In a tubular lantern, the combination of an air tube open at its upper end, and a lantern top movable toward and from said tube and comprising an air chamber having an outwardly projecting collar, a horizontal flange below said chamber, a ferrule arranged in said flange above said tube, and an elbow connected at its upper end to said collar and at its lower end to said ferrule, substantially as set forth.

5. In a tubular lantern, the combination of an air tube open at its upper end, and a lantern top movable toward and from said tube and comprising an air chamber, a horizontal flange below said chamber, an elbow extending from said chamber to said flange, and an extension of said elbow which registers with said tube and extends below the upper end thereof, substantially as set forth.

6. In a tubular lantern, the combination of a lantern tube provided in its outer side with a slit, a bail ear arranged against the outer side of the tube and having at its lower end a downwardly extending lip which is inserted into the tube through said slit, and horizontal guard members which are connected with the upper portion of the bail ear on both sides of the tube, substantially as set forth.

7. In a tubular lantern, the combination of lantern tubes, bail ears arranged against

the outer sides thereof, and a guard ring comprising sections having hooked ends which are engaged in openings formed in the bail ears and the tubes, substantially as set forth.

8: In a tubular lantern, the combination of lantern tubes each provided with a slit, bail ears arranged against the outer sides thereof and having at their lower ends downwardly extending lips which are inserted into the tubes through the slits there-

of, and a guard ring comprising sections having hooked ends which are engaged in openings formed in the bail ears and the tubes, substantially as set forth.

Witness my hand this 16th day of November, 1906.

CHAS. L. BETTS.

Witnesses:

F. W. VAN DUYN,  
GEO. A. ALLEN.