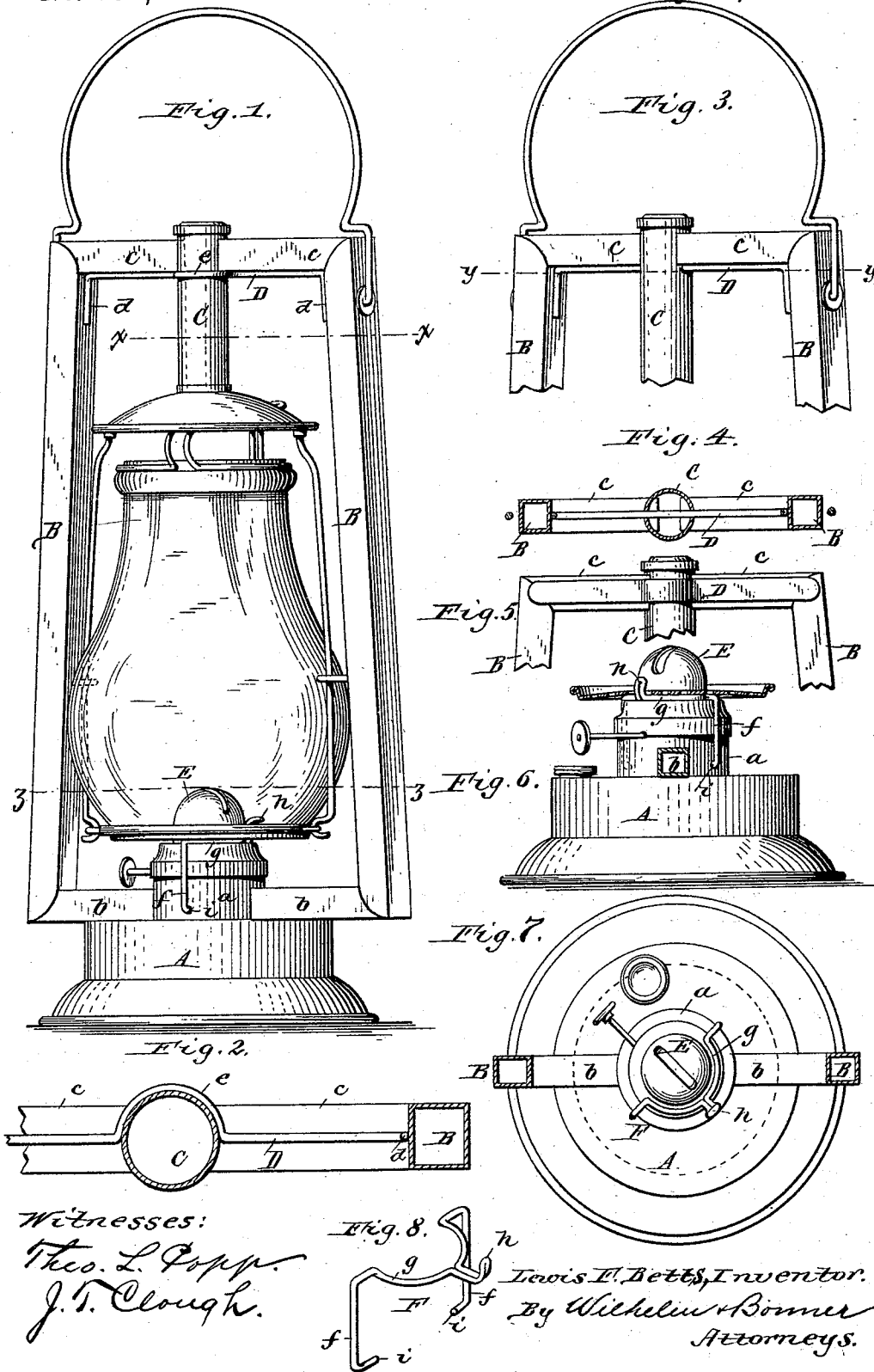


(No Model.)

L. F. BETTS.
TUBULAR LANTERN.

No. 498,420.

Patented May 30, 1893.



Witnesses:

Theo. L. Popp.
J. T. Clough.

Fig. 8.

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UNITED STATES PATENT OFFICE.

LEWIS F. BETTS, OF NEW YORK, N. Y., ASSIGNOR TO THE R. E. DIETZ COMPANY, OF SAME PLACE, AND THE STEAM GAUGE AND LANTERN COMPANY, OF SYRACUSE, NEW YORK.

TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 498,420, dated May 30, 1893.

Application filed August 10, 1891. Serial No. 402,212. (No model.)

To all whom it may concern:

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

One part of this invention relates to the tubular lantern frame and has the object to increase the strength and rigidity of the upper portion thereof; another part of my invention relates to the catch whereby the loose burner cone is fastened upon the air chamber and has the object to increase the elasticity of the catch and to render its manipulation more convenient.

In the accompanying drawings: Figure 1 is an oblique side elevation of a tubular lantern provided with my improvements. Fig. 2 is a fragmentary horizontal section through the upper part of the lantern in line $x-x$ Fig. 1 looking upward, on an enlarged scale. Fig. 3 is an oblique elevation of the upper part of a tubular lantern showing a modified construction of the strengthening device. Fig. 4 is a horizontal section in line $y-y$ Fig. 3. Fig. 5 is a side elevation of the upper part of the lantern showing another modification of the strengthening device. Fig. 6 is a sectional elevation of the lower part of the lantern at right angles to Fig. 1. Fig. 7 is a horizontal section through the lower part of the lantern in line $z-z$ Fig. 1. Fig. 8 is a perspective view of the catch by which the burner cone is locked down upon the air chamber.

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

A represents the oil pot, a the air chamber mounted thereon, b the lower horizontal branches of the air tubes secured to the top of the oil pot and opening into the air chamber, B the upright portions of the air tubes, c the horizontal top branches thereof and C the central depending tube arranged between the top branches and secured thereto. All of these parts may be of any ordinary or suitable construction.

The upper part of the lantern is inferior in strength and rigidity to the lower part and is particularly liable to become bent or broken,

where the upper horizontal branches of the tubes join the depending central tube. In order to avoid this I strengthen the upper part by a strengthening piece D which connects the central tube with the top branches and side portions of the air tubes. As represented in Figs. 1 and 2 the strengthening piece D consists of a wire or rod which is arranged against the under side of the top branches of the air tubes and provided with downwardly projecting or depending end portions d which are arranged against the inner sides of the upright portions of the air tubes. The wire or rod D is provided with a central bend or bow e which rests against one side of the central depending tube. This wire or rod is soldered to the upper portion of the tubular frame and forms a firm connection between the upper horizontal branches and the central tube and between the upright side portions and the horizontal top branches.

In the construction represented in Figs. 3 and 4 the wire or rod D is constructed without the central bend and extends through the central depending tube instead of around it.

In the construction represented in Fig. 5 the strengthening device is formed by a flat bar which is secured against one side of the lantern frame and extends from the top part of one upright side portion along the side of the adjacent horizontal branch, then around one side of the central tube, and along the side of the other horizontal branch to the top part of the other upright side portion of the tube.

E represents the burner cone which is loosely fitted with its skirt upon the upper edge of the air chamber a . F represents the pivoted wire catch whereby the cone is locked down upon the air chamber. This catch is composed of two vertical legs $f f$ arranged on diametrically opposite sides of the cone, a semi-circular bow g connecting the upper ends of the legs and adapted to bear upon the shoulder of the cone, and a thumb-piece h formed on the bow, as described and shown in Letters Patent No. 397,625, granted to me February 12, 1889. In the construction represented in this patent the legs of the catch are pivoted to the upper sides of the lower hori-

zontal branches of the side tubes. This renders the legs so short that the catch is not sufficiently elastic to lock easily over the shoulder of the cone. In order to overcome this difficulty I extend the legs down to the lower portion of the air chamber and provide them with inwardly projecting pivots which are sprung into openings formed in the air chamber. This construction increases the length of the legs and provides the requisite elasticity in the catch, thereby enabling the catch to be conveniently manipulated.

I claim as my invention--

1. The combination with the upright side portions of the air tubes, their upper branches and the central depending tube, all rigidly secured together, of a strengthening bar rigidly secured to the under sides of the branches and to the central tube and provided with depending end pieces which are secured to the side portions of the tubes, substantially as set forth.

2. The combination with the upper branches

of the air tubes and the central depending tube rigidly secured together, of a strengthening bar rigidly secured to the side portions and provided with a bend which extends around one side of the central tube and is rigidly secured thereto, substantially as set forth.

3. The combination with the air chamber and the burner cone seated thereon, of a catch provided with a bow bearing upon the cone and with legs extending downwardly from the bow on opposite sides of the air chamber and provided at their lower ends with inwardly projecting pivots which turn in openings formed in the side walls of the air chamber, substantially as set forth.

Witness my hand this 16th day of July, 1891.

LEWIS F. BETTS.

Witnesses:

I. J. ALLEN,
FRED VAN DUY.