

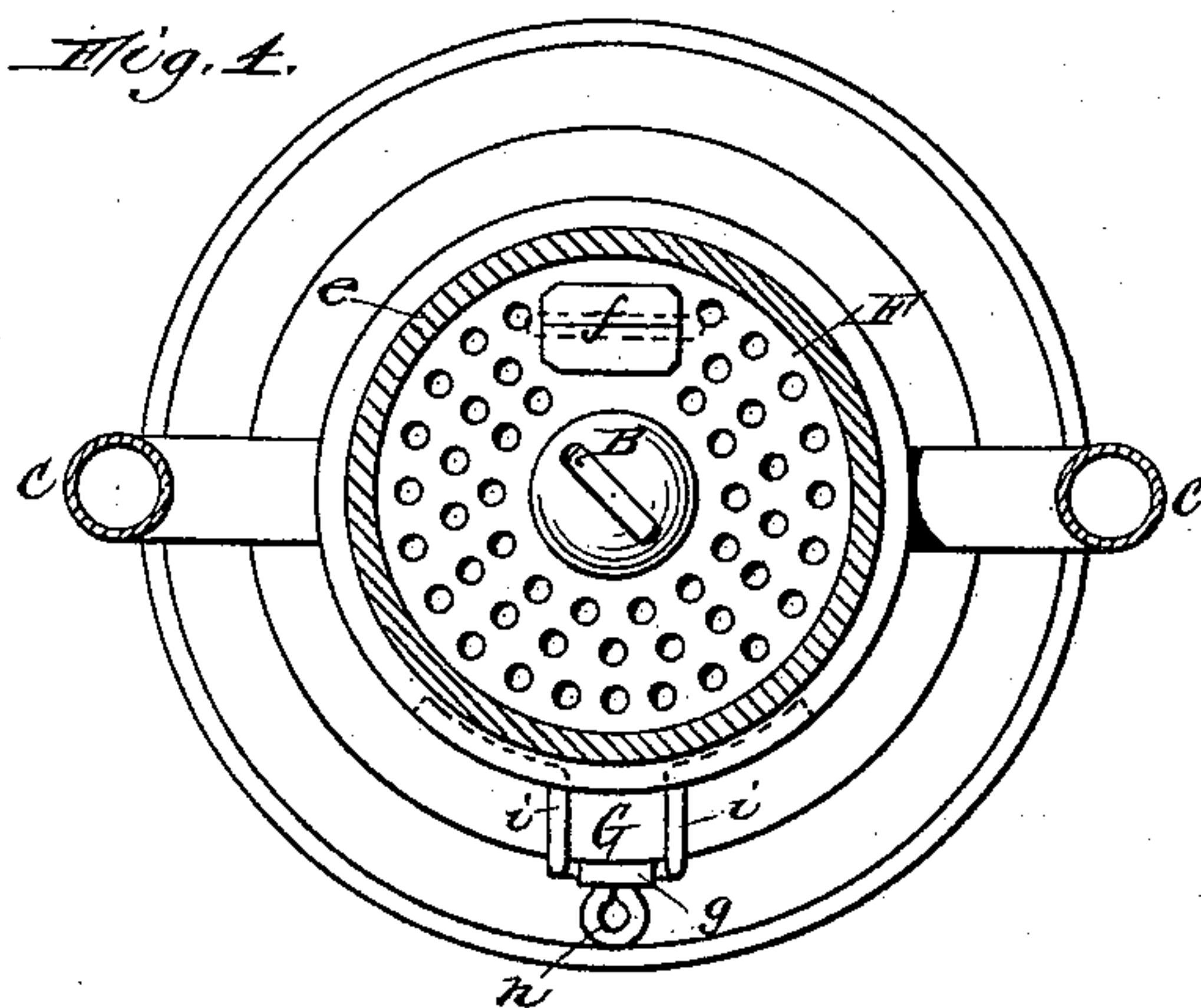
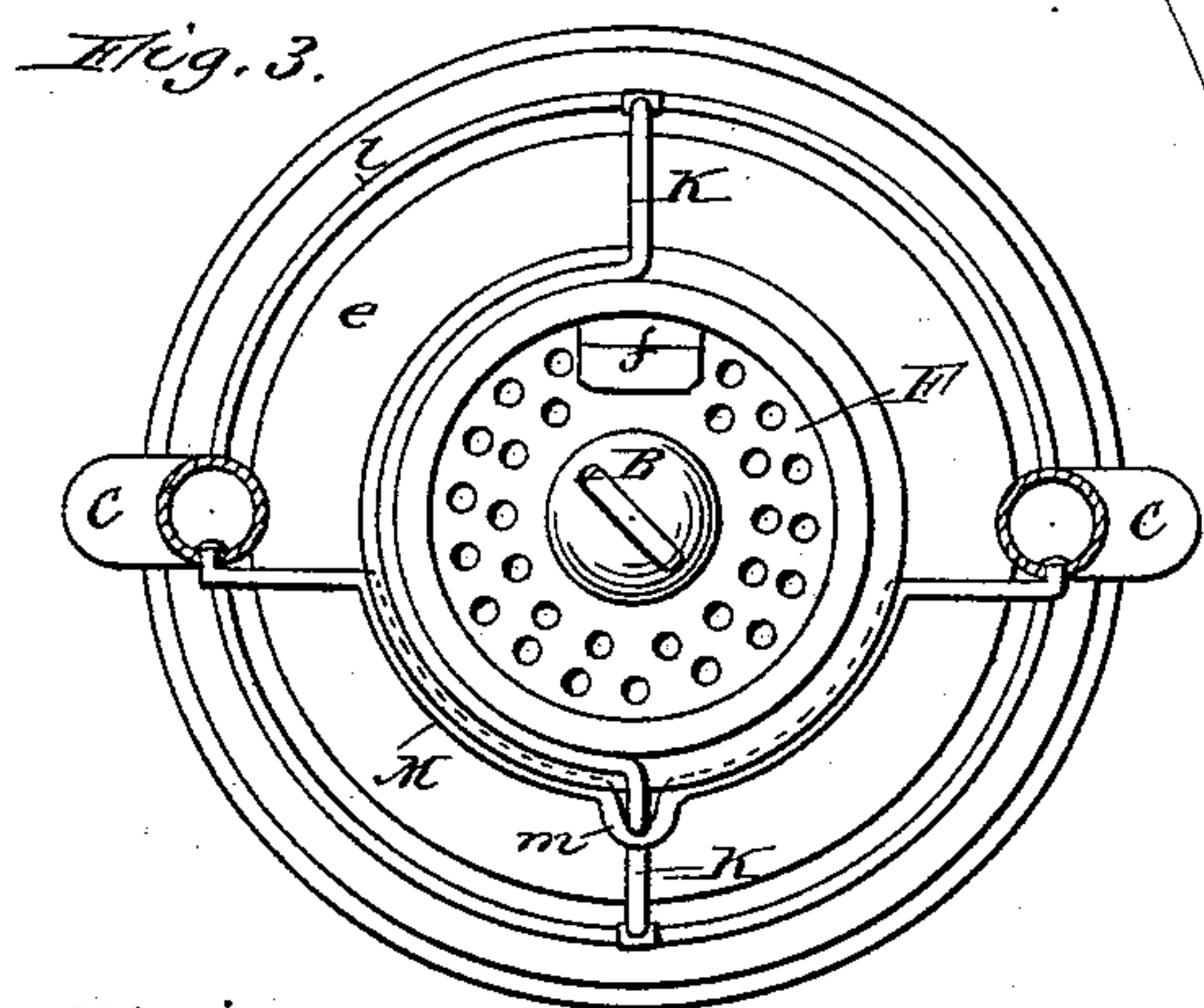
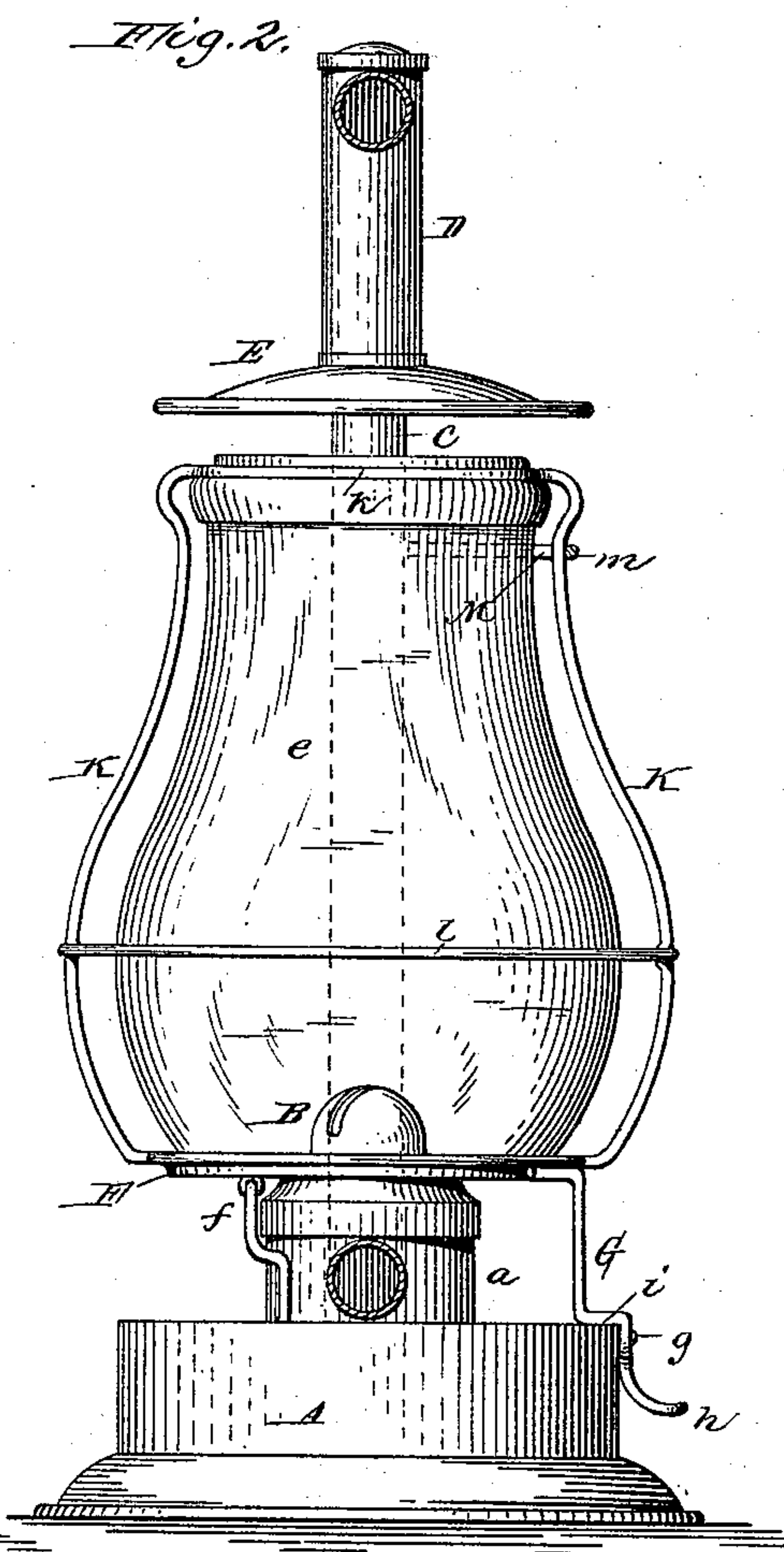
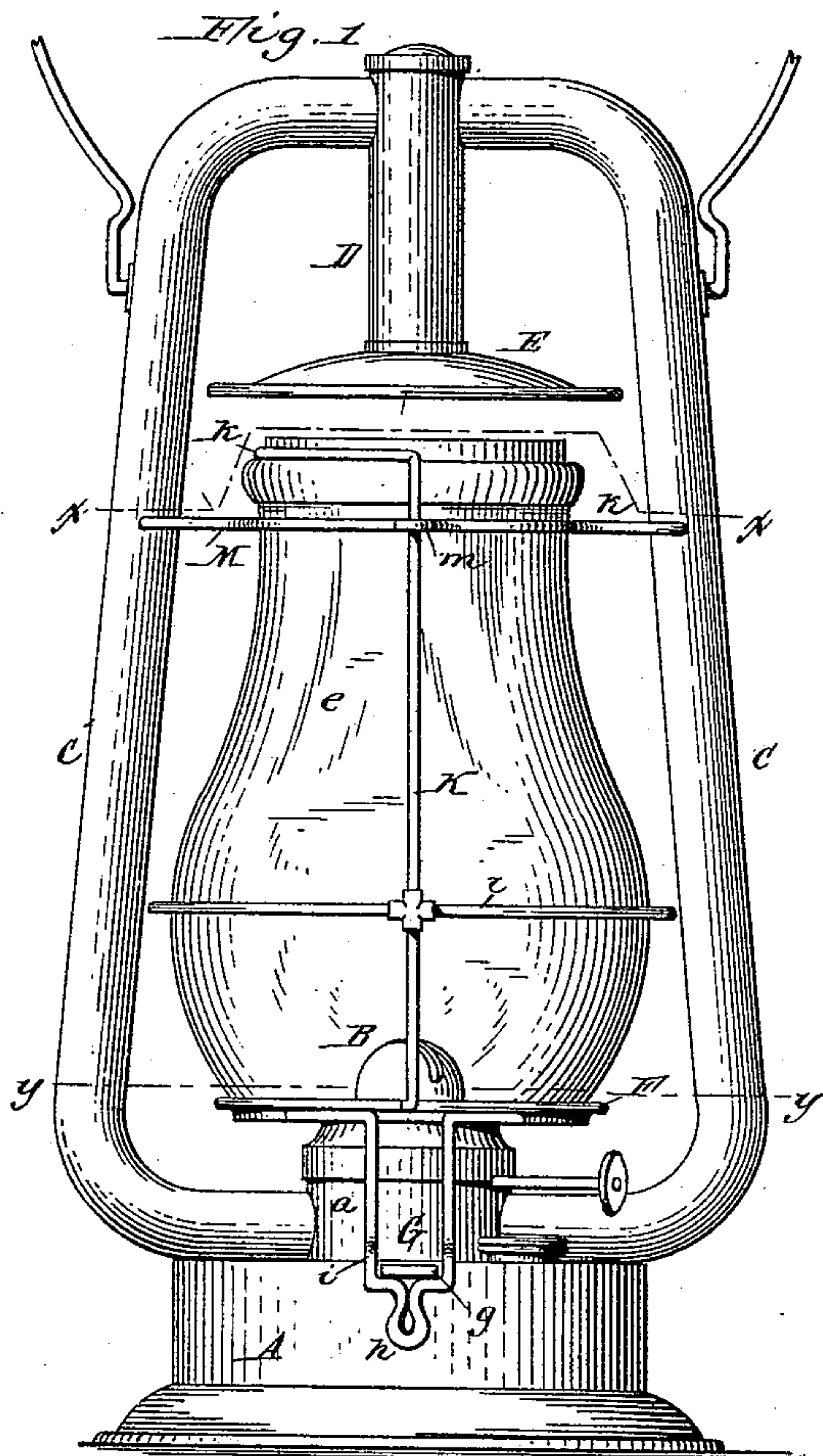
(No Model.)

3 Sheets—Sheet 1.

L. F. BETTS.  
TUBULAR LANTERN.

No. 450,444.

Patented Apr. 14, 1891.



Witnesses:

Theo. L. Popp.  
Jacob Nyenblatt.

Lewis F. Betts, Inventor.  
By Edward Wilhelm,  
Attorney.

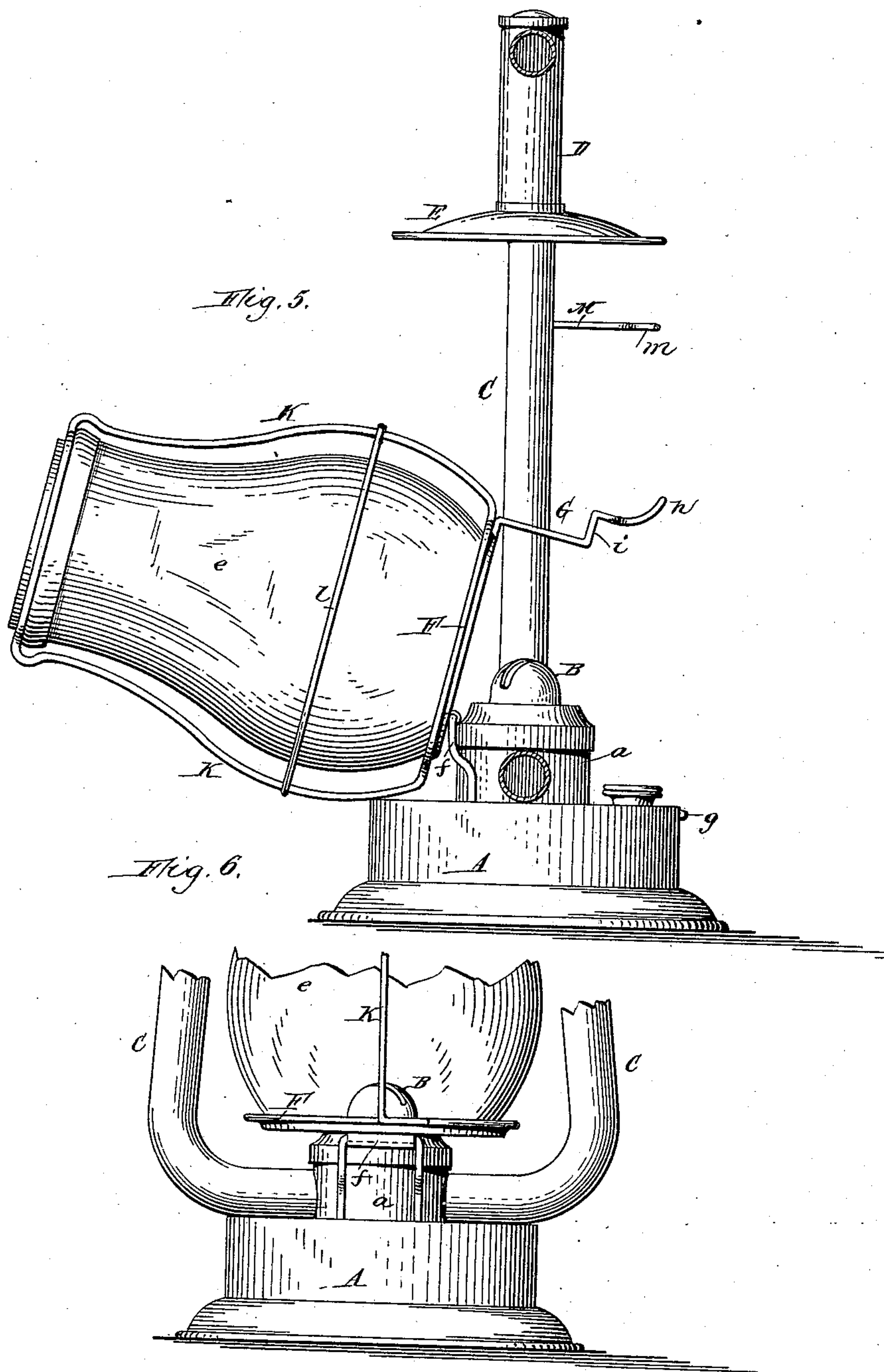
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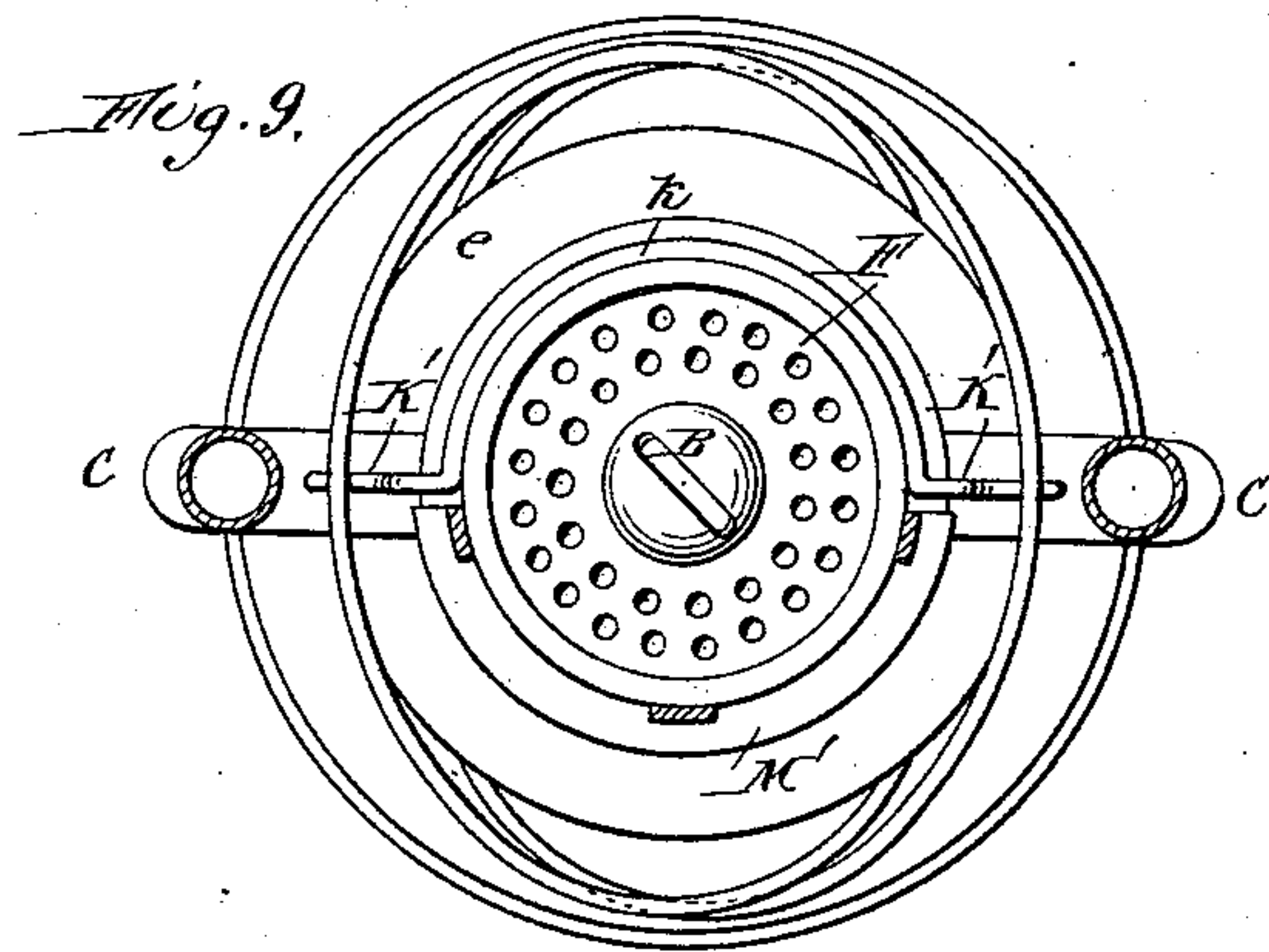
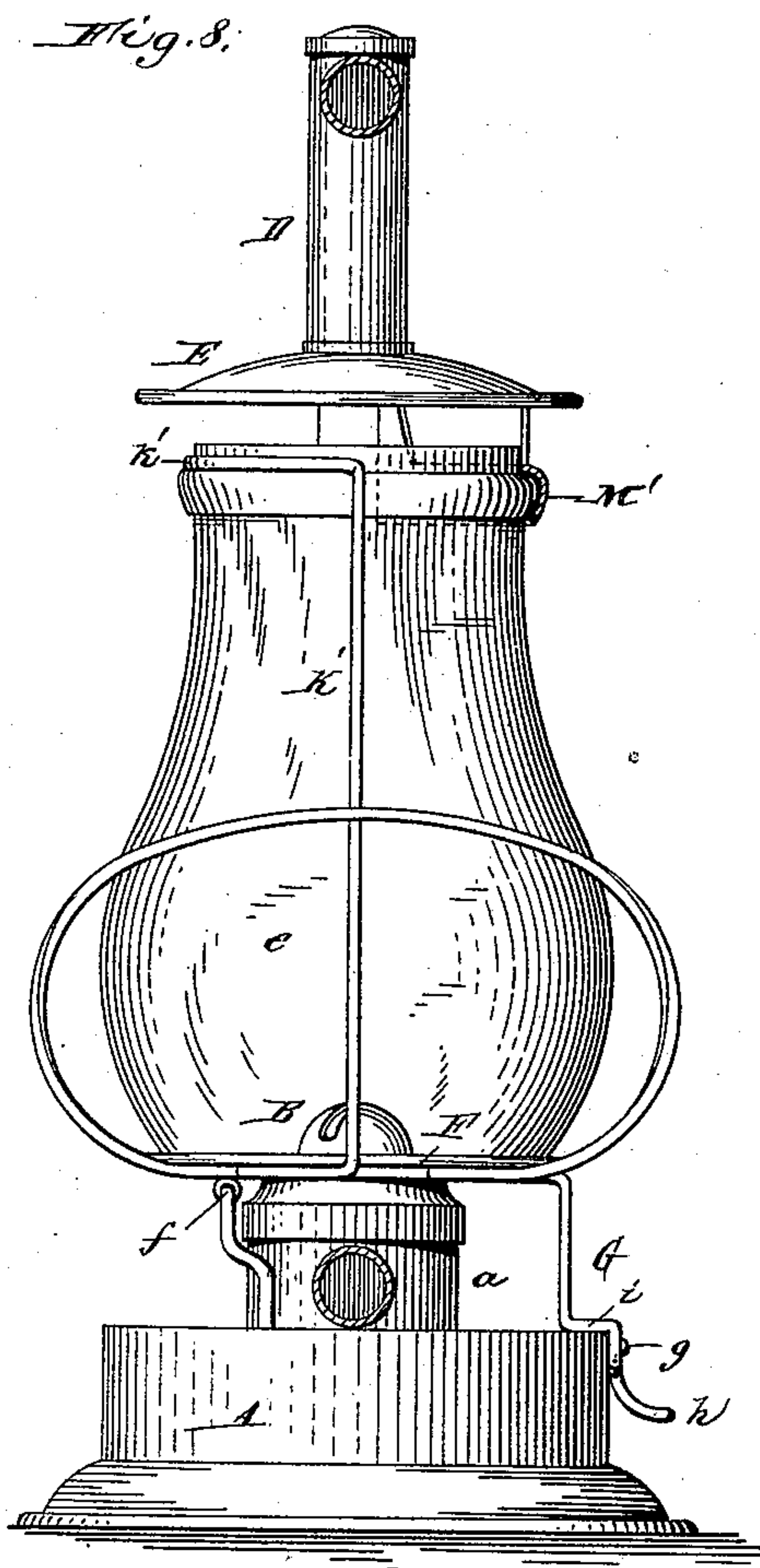
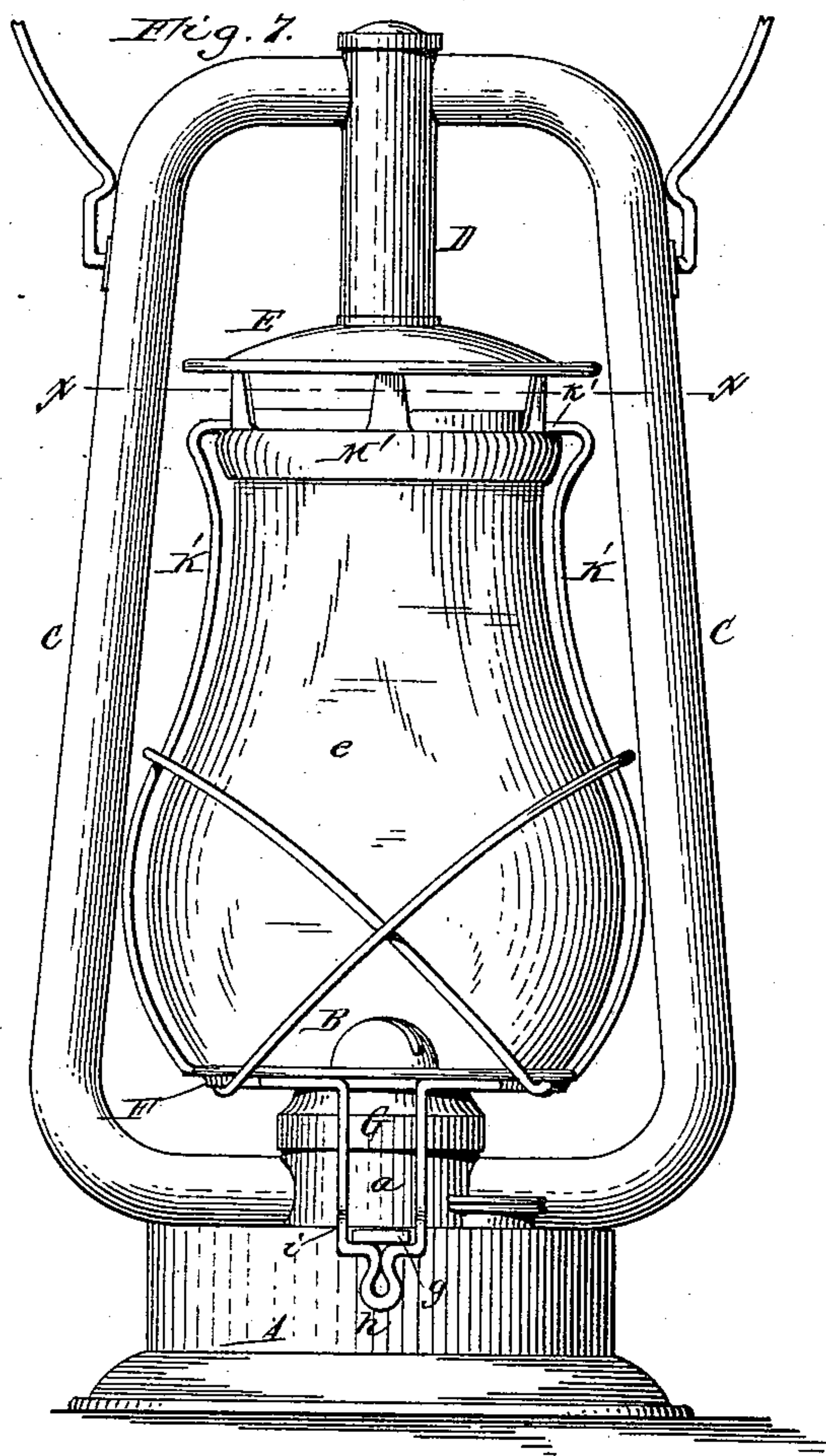
(No Model.)

3 Sheets—Sheet 3.

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TUBULAR LANTERN.

No. 450,444.

Patented Apr. 14, 1891.



Witnesses:  
Thos. L. Copp,  
Jacob Kupsenblatt

Lewis F. Betts, Inventor.  
By Edward Wilhelm,  
Attorney.



# UNITED STATES PATENT OFFICE.

LEWIS F. BETTS, OF NEW YORK, N. Y.

## TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 450,444, dated April 14, 1891.

Application filed July 21, 1890. Serial No. 359,392. (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 new and useful Improvements in Tubular Lanterns, of which the following is a specification.

This invention relates to that class of tubular lanterns in which the globe-plate is hinged to the lower part of the lantern and the globe is held on the globe-plate by a wire frame extending toward the top of the globe, so that the burner can be exposed by swinging the globe-plate, with the globe resting thereon, to one side of the burner.

The object of this invention is to produce a construction of the tilting globe-frame which shall be simple and which will hold the globe securely on the plate when in its normal position, and thereby insure the proper draft of the lantern, and also when tilted, and thereby prevent breakage.

Another object of my invention is to so construct the lantern that the tilting movement of the globe can be easily and conveniently controlled and that the globe-frame is securely locked in its normal position without attaching it to the bell or canopy above the globe.

In the accompanying drawings, consisting of three sheets, Figure 1 is a front elevation of a tubular lantern provided with my improvements. Fig. 2 is a side elevation with one tube broken away. Figs. 3 and 4 are horizontal sections in lines *xx* and *yy*, Fig. 1, respectively. Fig. 5 is a side elevation with one tube broken away and showing the globe-frame and globe tilted back. Fig. 6 is a rear elevation of the lower part of the lantern. Fig. 7 is a front elevation of a tubular lantern, showing a modified construction of my invention. Fig. 8 is a side elevation of the same lantern with one of the tubes broken away. Fig. 9 is a horizontal section in line *xx*, Fig. 7.

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

A represents the oil-pot; *a*, the air-chamber; B, the burner-cone; C C, the side tubes; D, the depending central tube; E, the bell rigidly secured to the lower end thereof, and *e* the globe, all of any ordinary or suitable construction.

F represents the globe-supporting plate, which is perforated as usual, and which rests upon the horizontal shoulder of the skirt of the burner-cone.

*f* is the hinge on the rear side of the lantern by which the globe-plate is attached to the lower part of the lantern structure.

G is a spring-catch secured to the globe-plate on the front side of the lantern and by which the plate is secured in a horizontal position. This catch consists, preferably, of a single piece of spring-wire bent to form two legs, which are secured with their upper distended ends to the globe-plate and which extend parallel to each other from the plate downwardly to the top of the oil-pot, thence horizontally to the edge of the oil-pot, thence downwardly on the front side of the oil-pot on opposite sides of a stop *g*, secured thereto, and then toward each other underneath said stop, where they form a thumb-piece *h*. The horizontal shoulder *i*, by which the catch rests upon the oil-pot, forms a firm support for the catch and, in connection with the stop *g*, prevents the globe-frame from being released and swung aside by an accidental blow against the front of the globe or its frame.

K K represent upright wires, which extend upwardly from the globe-plate to the top of the globe on the front and rear sides of the lantern, and which are connected at their upper ends by a horizontal bow or semicircular bar *k*, which embraces one-half of the globe and rests upon the bead at its top. The bow *k* and the upright wires are preferably bent of a single piece of wire, which is secured with its ends to the globe-plate. As the upright wires are arranged in a plane at right angles to that of the tubes, they prevent the insertion and removal of the globe when the globe-frame is in its normal position, but require the globe-frame to be tilted for that purpose. This prevents in a measure the accidental displacement of the globe when in its normal position. The fixed bow, which is attached to the rigid lantern-frame, embraces the front portion of the globe and the bow of the tilting frame one side of the globe, so that the upper end of the globe is clasped over about three-fourths of its circumference when the tilting globe-frame is in its normal position, whereby the globe is securely held,



while it can be readily removed laterally upon tilting the globe-frame. The upright wires form guards and are connected opposite the bulge of the globe by a horizontal guard-wire *l*, which protects the globe and renders the globe-frame more rigid.

*M* represents a stop-wire, which extends horizontally across the top of the globe on the front side of the lantern and is secured with its ends to the side tubes. This wire is curved to fit against the front half of the globe and is provided with a short outward bend or depression *m*, which straddles the upright front wire of the globe-frame and assists in holding the globe-frame in its normal position. The globe-plate is held in its horizontal position by the horizontal shoulder of the skirt of the burner-cone and by the horizontal shoulder of the spring-catch, and the globe is held in an upright position on the plate by the bow *k* at the top of the upright wires and by the cross-wire *M*, against which the front half of the globe is held by the spring-catch. These devices hold the upper end of the globe centrally underneath the bell and insure the proper entrance of the air into the bell to supply the flame and prevent smoking.

The globe-frame is not attached to the bell by a catch, and the bell is therefore not liable to be bent out of shape by the frequent manipulation of the globe-frame. The latter is tilted by seizing the rigid tubular frame with one hand and the base-catch *G* with the other. In tilting the globe the catch *G* is held in the hand of the operator, and the movement of the globe-frame is consequently always guided and controlled, thereby avoiding the violent jars which result from releasing the globe-frame when a top catch is employed.

In the modified construction represented in Figs. 7, 8, and 9 the upright wires *K'K'* are arranged in the same plane with the side tubes and the bow *k'* is arranged on the rear side of the lantern. The stop-wire *M* is in this construction replaced by a semicircular band *M'*, which depends from the bell on the front side of the lantern and against which the front portion of the top of the globe is drawn by the spring-catch.

I claim as my invention—

1. The combination, with the lantern-base, side tubes, and bell, constituting a rigid lantern-frame, and the globe, of a globe-frame hinged at its rear side to the lantern-base, a catch secured to the lower front portion of the globe-frame, and a stop on the front side of the base with which said catch interlocks, whereby the tilting movement of the globe-frame in the rigid lantern-frame is controlled by holding the catch and the globe-frame is

locked in its normal position to the base without attaching it to the bell, substantially as set forth.

2. The combination, with the lantern-base, side tubes, and bell, constituting a rigid lantern-frame, and the globe, of a globe-frame hinged at its rear side to the lantern-base, a catch secured to the lower front portion of the globe-frame, a stop on the front side of the base with which said catch interlocks, and a cross-piece secured to the front side of the rigid lantern-frame opposite the upper portion of the globe, whereby the globe-frame is locked to the base and the upper portion of the globe is drawn against the front cross-piece in locking the globe-frame to the base, substantially as set forth.

3. The combination, with the tubular lantern-frame and the globe, of a globe-plate hinged to the lantern-frame, upright wires secured to said plate and arranged on the front and rear sides of the lantern, a bow wire connecting the upper ends of the front and rear wires on one side of the globe, and a guard-ring connecting the middle portions of the front and rear wires, whereby the globe can be removed laterally upon tilting the globe-frame, substantially as set forth.

4. The combination, with the tubular lantern-frame and the globe, of a globe-plate hinged to the rear side of the lantern-frame, upright wires secured to said plate and arranged on the front and rear sides of the lantern, a bow connecting the upper ends of said wires and bearing against one side of the globe, and a cross-wire secured to the tubular frame on the front side thereof and supporting the front wire, substantially as set forth.

5. The combination, with the tubular lantern-frame, of a tilting globe-frame composed of a supporting-plate hinged to the base of the lantern, upright wires secured to said plate and arranged on the front and rear sides of the lantern, a bow connecting the upper ends of said wires and embracing one side of the globe, and a fixed bow secured to the lantern-frame and embracing the front of the globe, whereby the upper end of the globe is clasped at one side and at the front when the globe-frame is in its normal position, but permitted to be removed laterally when the globe-frame is swung back, substantially as set forth.

Witness my hand this 16th day of July, 1890.

LEWIS F. BETTS.

Witnesses:

FRED DIETZ,  
I. J. ALLEN.