

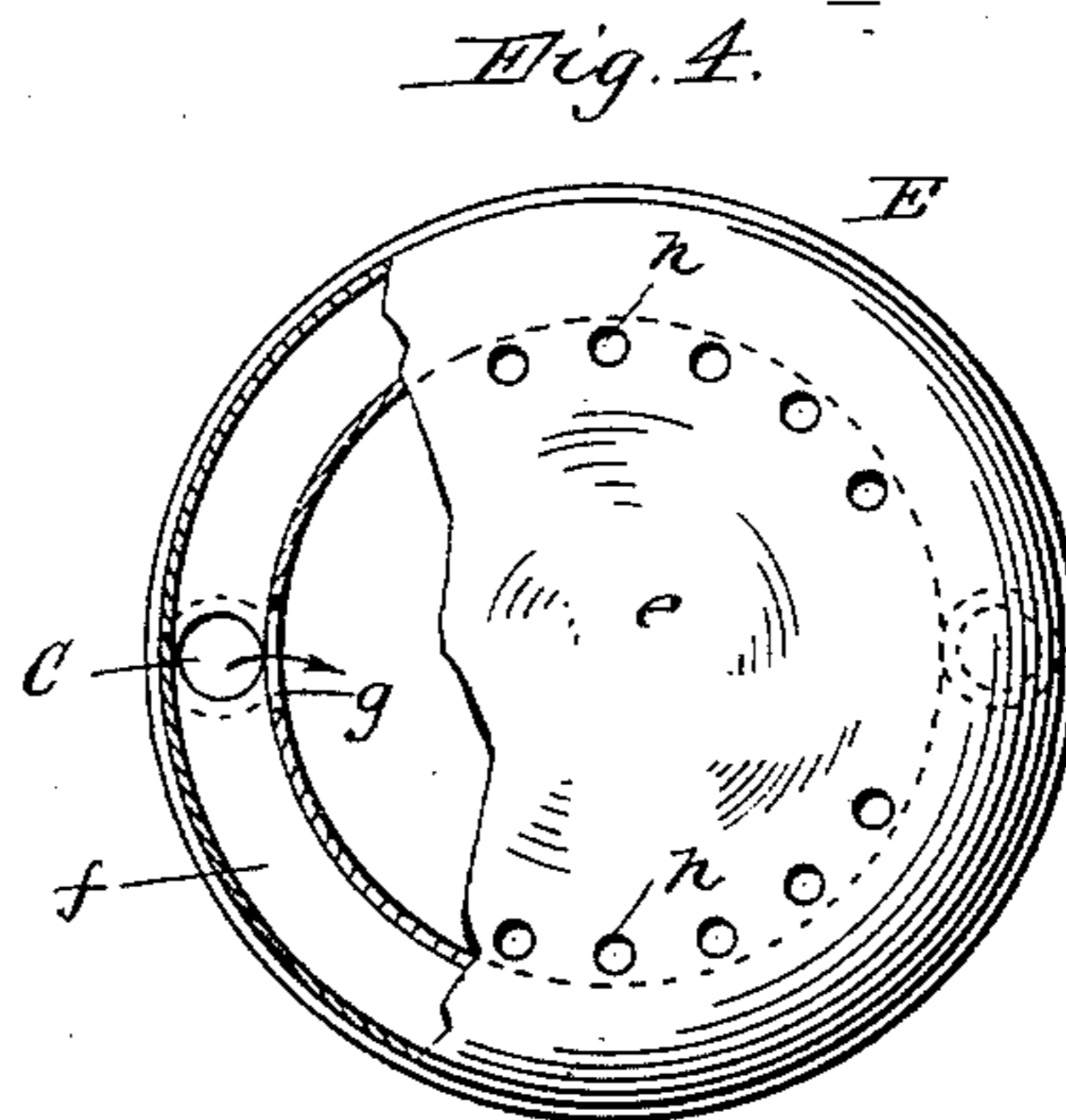
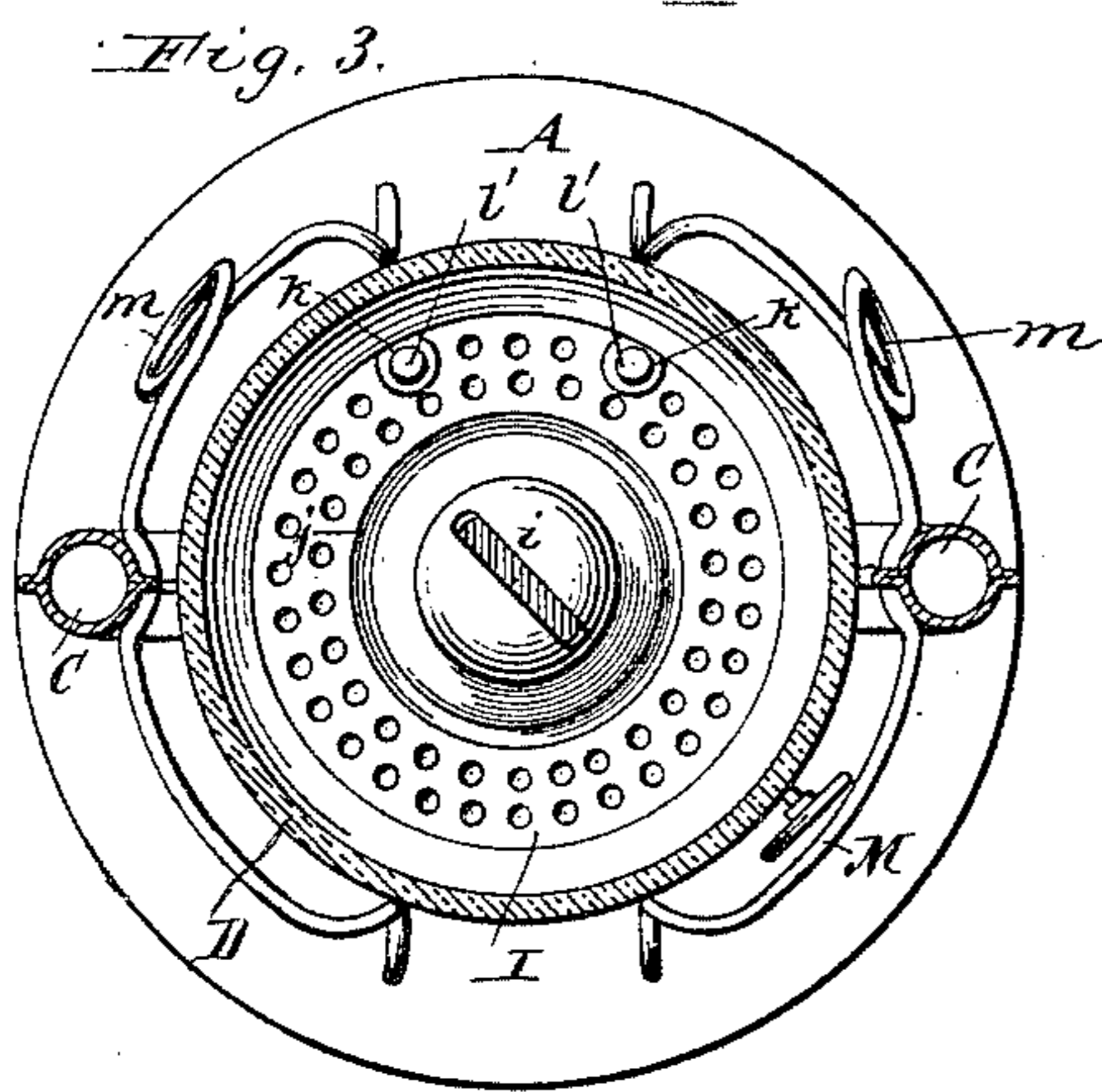
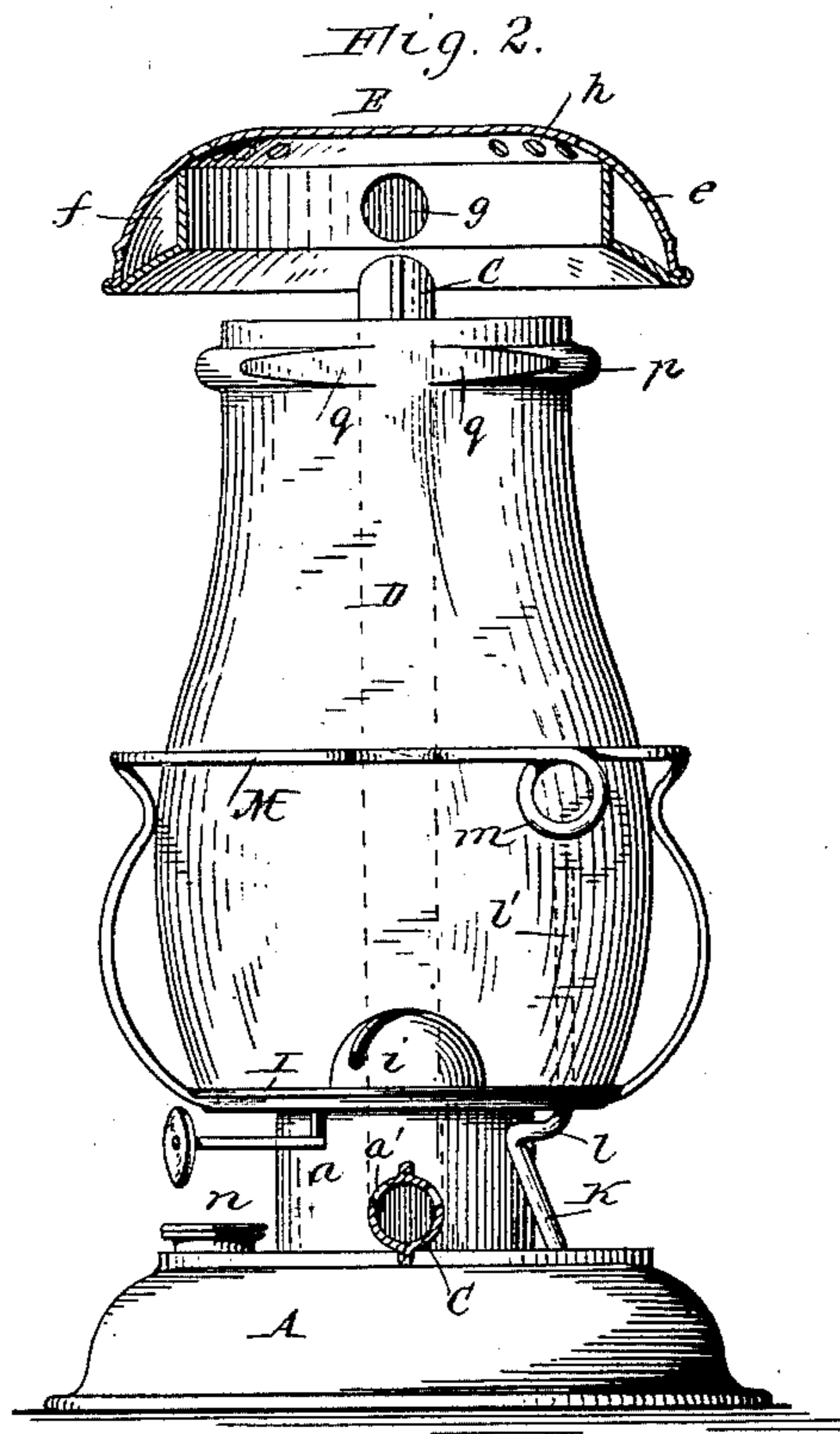
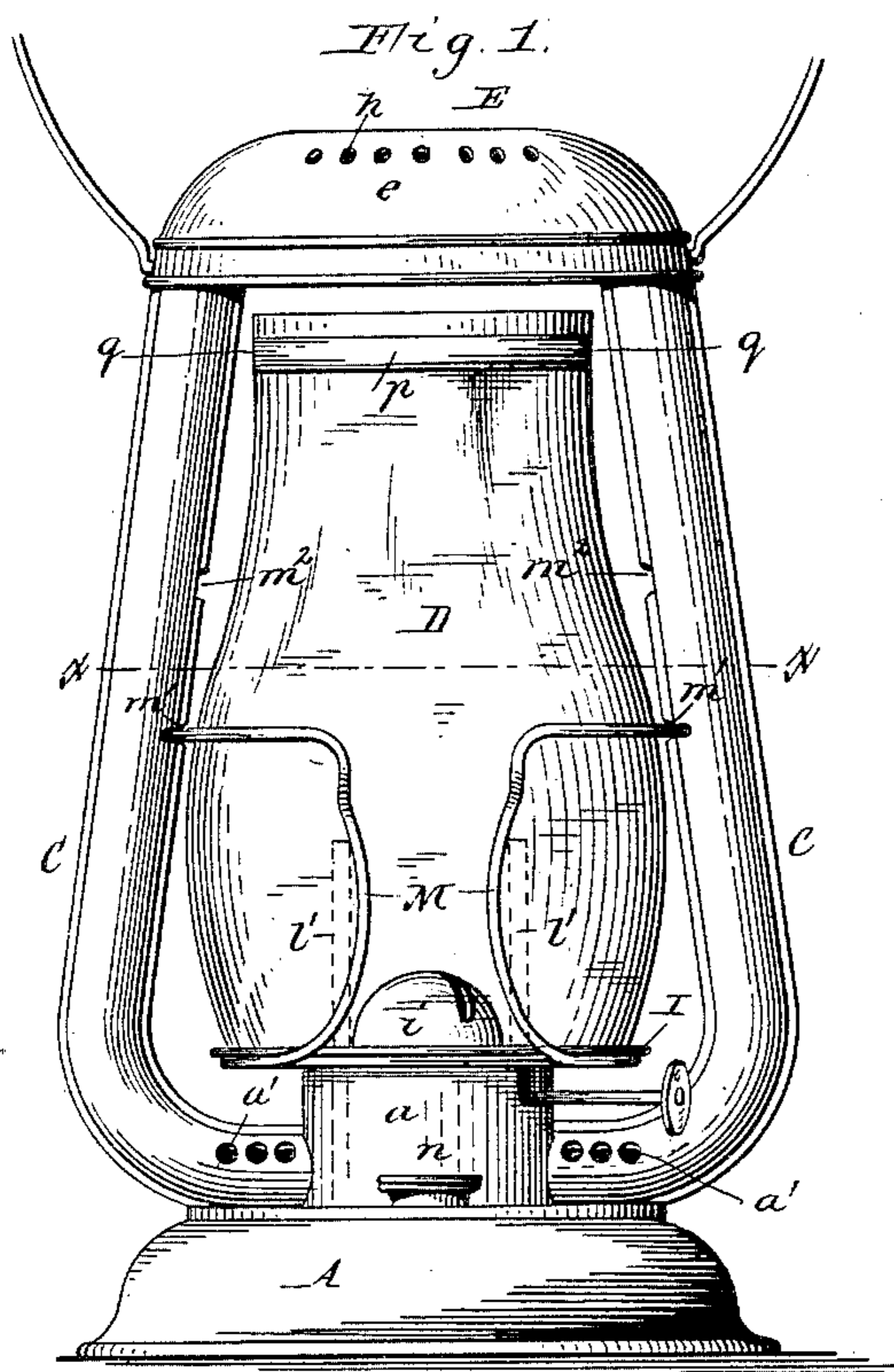
(No Model.)

2 Sheets—Sheet 1.

C. J. HIGGINS.
TUBULAR LANTERN.

No. 433,243.

Patented July 29, 1890.



Witnesses:
Thos. L. Popp.
Jacob R. Pfenblath.

Charles J. Higgins, Inventor.
By Edward Wilhelm
Attorney.

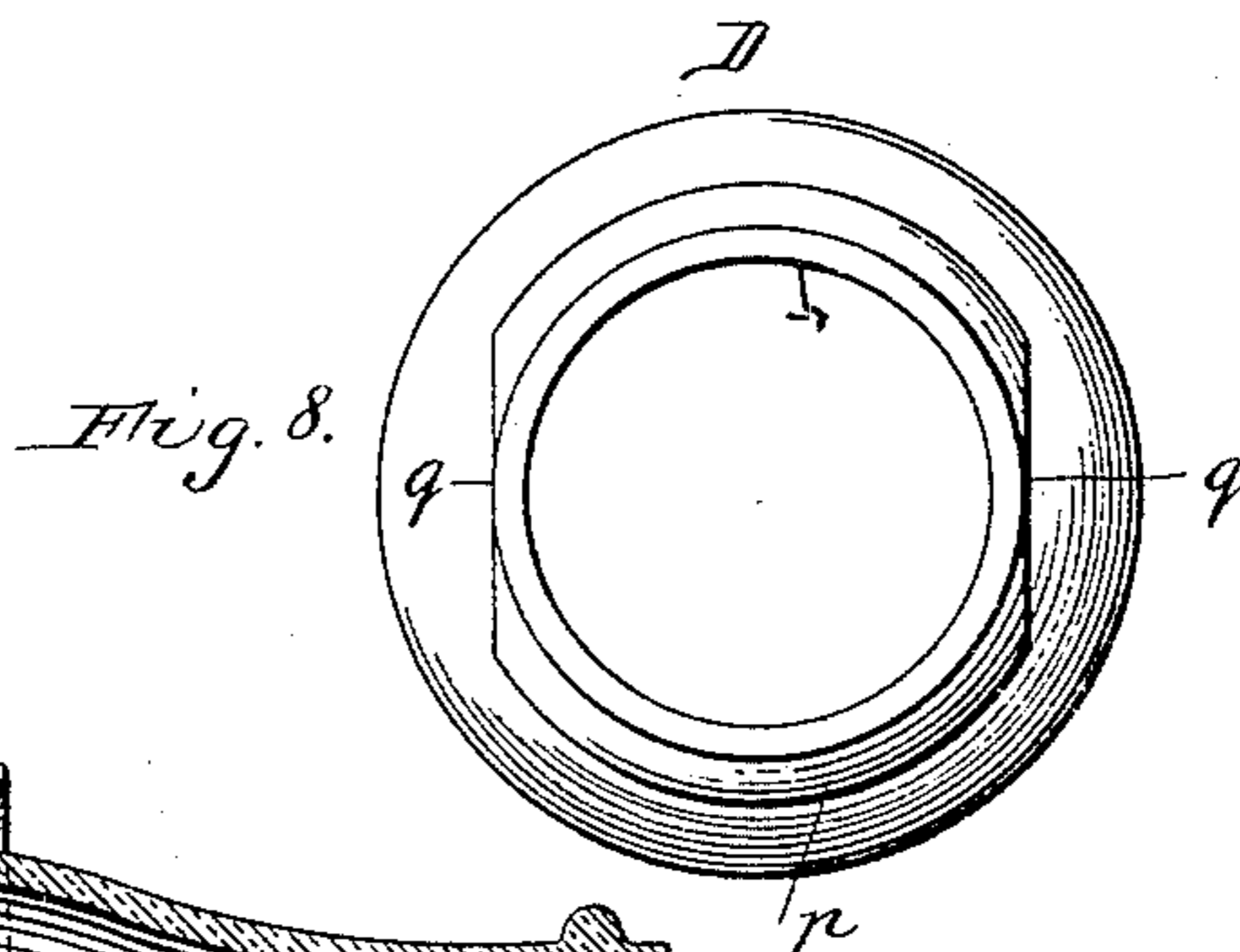
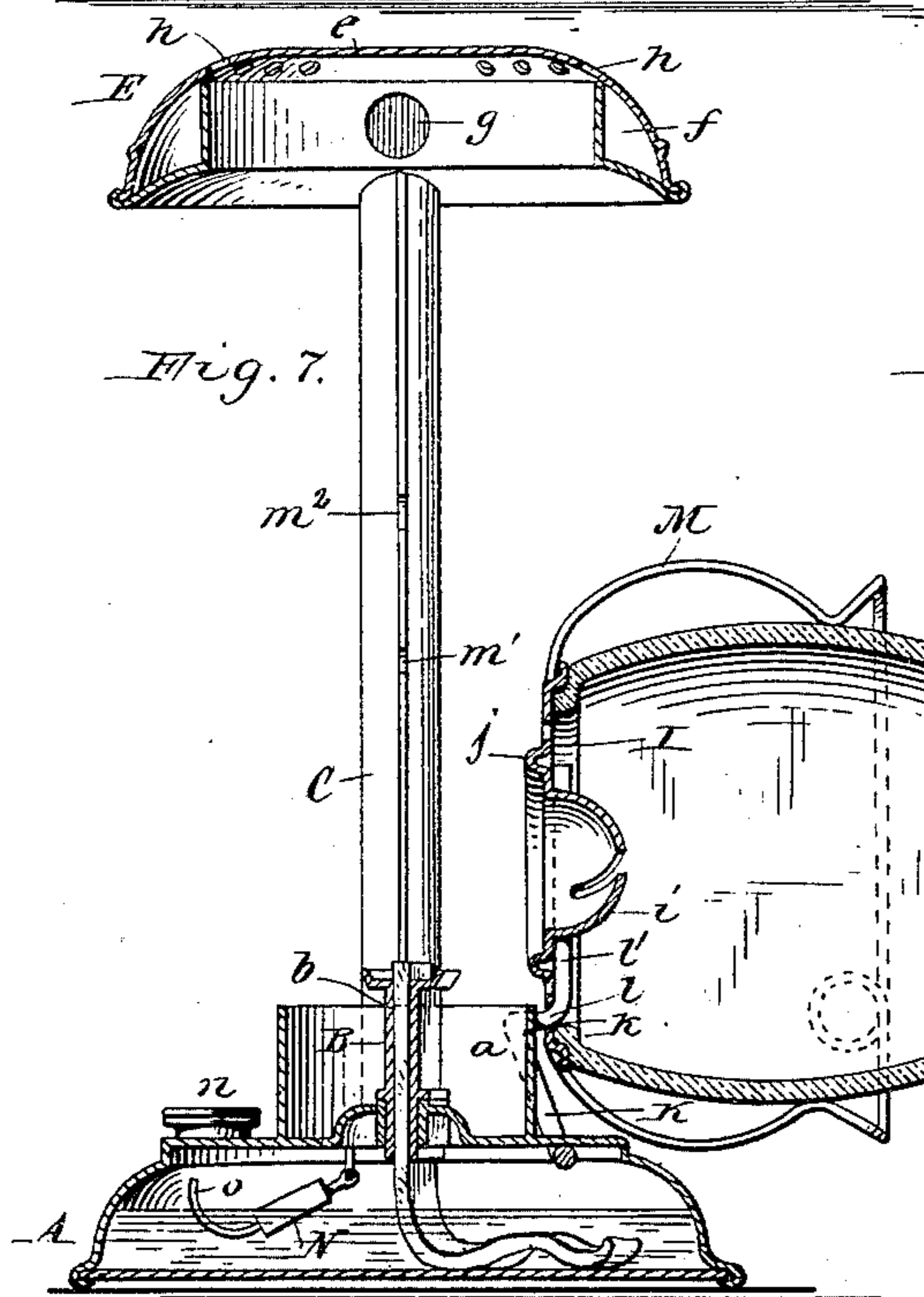
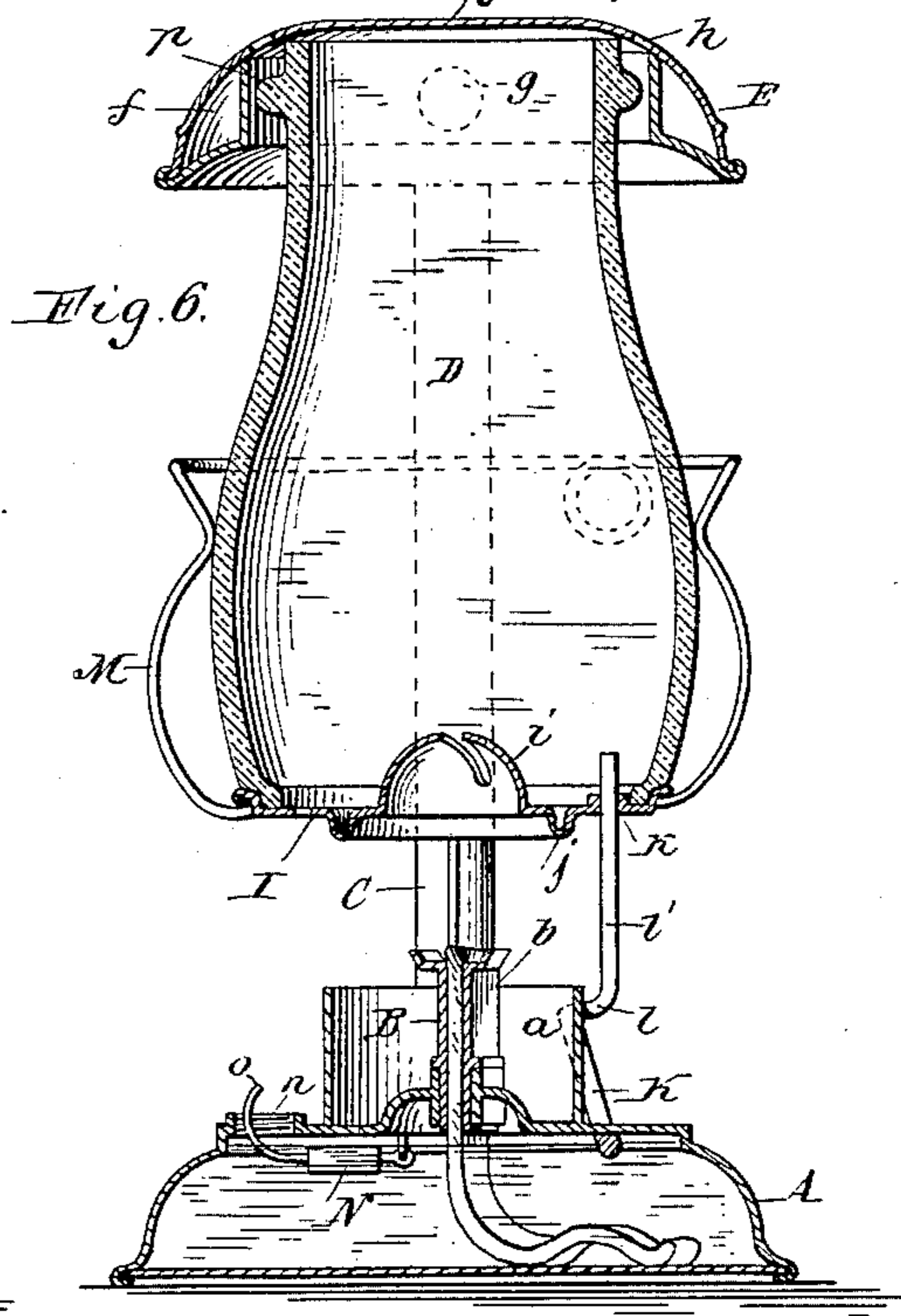
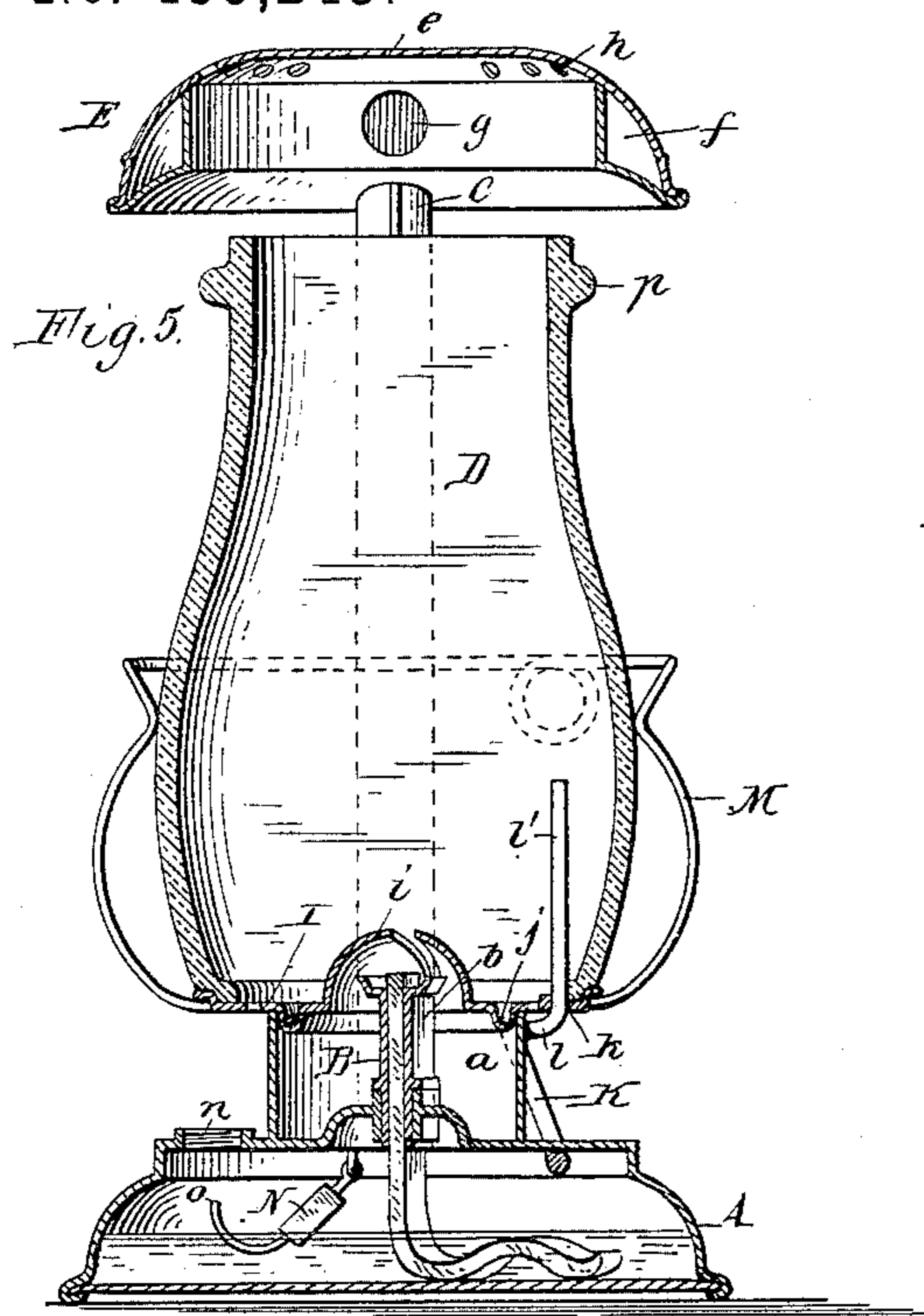
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2 Sheets—Sheet 2.

C. J. HIGGINS.
TUBULAR LANTERN.

No. 433,243.

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Theo. L. Popp
Jacob Rupenblatt } Witnesses.

Charles J. Higgins, Inventor.
By Edward Wilhelm
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES J. HIGGINS, OF HALLOWELL, MAINE.

TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 433,243, dated July 29, 1890.

Application filed November 26, 1889. Serial No. 331,609. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. HIGGINS, a citizen of the United States, residing at Hallowell, in the county of Penobscot and State of Maine, have invented a new and useful Improvement in Tubular Lanterns, of which the following is a specification.

This invention relates to that class of lanterns which are provided with side tubes, through which the air for the support of the flame is conducted from the vicinity of the top of the globe to the burner.

The objects of my invention are to provide simple means for exposing the burner for lighting, extinguishing, trimming, cleaning, &c.; also, to simplify the construction of the burner; also, to provide simple and compact devices for supplying air to the tubes at the top of the globe; also, to provide an indicator, whereby the height of the level of oil in the oil-pot is shown; also, to improve the lantern in various other respects, as will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is an elevation of a lantern provided with my improvements. Fig. 2 is an elevation, partly in section, at right angles to Fig. 1. Fig. 3 is a horizontal section in line *x x*, Fig. 1. Fig. 4 is a top plan view, partly in section. Fig. 5 is a sectional elevation of the globe in position on the burner. Fig. 6 is a similar view showing the globe raised. Fig. 7 is a similar view showing the globe tilted or tipped over. Fig. 8 is a top view of the globe.

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

A represents the oil-pot, *a* the air-chamber secured to the top thereof, and B the wick-tube secured in the top of the oil-pot and provided with an upper removable portion *b*, which carries the wick-adjuster.

CC represent the side tubes, which connect at their lower ends with the air-chamber *a*, and are preferably provided near the air-chamber with perforations *a'* for the admission of an additional supply of fresh air.

D is the globe.

E represents the lantern-top, consisting of an inverted cup or saucer shaped plate *e*, which is arranged over the top of the globe,

and a marginal annular air-chamber *f*, which is formed along the edge of the top and on the under side thereof by securing an annular piece of tin of angular cross-section to the edge of the top plate and to the under side of the top at a short distance above its edge. The top, with this annular chamber along its margin, forms a double air-chamber, which collects in its central portion the heated air arising from the globe and delivers a portion of this air to the annular chamber *f* through openings *g* in the inner wall of the chamber, while the rest of the heated air and products of combustion escape through perforations *h* in the top plate or underneath the bottom of the annular chamber. The upper ends of the tube are connected with the lower side of the annular chamber *f*, so as to receive the air therefrom.

I represents the perforated plate upon which the globe rests. This plate carries the burner-cone *i*, which is either stamped on the plate or made separate therefrom and secured to the same. The plate is provided with a downwardly-projecting annular rim or bead *j*, which is stamped on the plate and enters the top of the air-chamber and secures a close fit of the plate therewith. This plate is attached to the lantern-frame by upwardly-projecting hinge and guide bars or rods K K, secured to the lower portion of the lantern and projecting upwardly into the globe through openings *k*, formed in the plate, and preferably re-enforced by eyelets. As shown in the drawings, the bars K are provided with lateral or horizontal portions or shoulders *l*, on which the perforated plate can be tilted back, as represented in Fig. 7, and with upright portions *l'*, on which the perforated plate can be raised and lowered, as represented in Fig. 6, so that this device by which the plate is attached to the lantern performs the dual function of a hinge and rectilinear guide and permits the plate and globe to be either tipped over or raised, as may be desired. The upright portions of the bars or rods form back supports or stops, against which the plate rests when it is swung back, and which relieves the parts from strains which would tend to bend or destroy the hinge parts.

M represents a wire clasp or frame, which is attached to the perforated plate, and which

serves to hold the globe on the plate and also operates as a guard. This clasp is sufficiently elastic to permit of the ready insertion and removal of the globe when tipped over, and is preferably provided with thumb-pieces m for conveniently seizing it in raising or tilting the globe.

The tubes are provided with stops, which engage with the clasp and hold the latter and the perforated plate and globe in their normal position on the burner, and also in an elevated position. The stops which I prefer to use because of their simplicity are notches m' and m^2 , formed in the seams on the inner sides of the tubes, and in which the top portions of the wire clasp engage. The lower notches m' hold the globe in its normal position on the burner, and the upper notches m^2 hold it in an elevated position. The top portions of the wire clasp or frame are indented to fit against the inner sides of the tubes, as represented in Fig. 3. These indented portions straddle the inner sides of the tubes and operate as additional side guides in raising and lowering the globe-frame on the rear guides K, whereby the globe-supporting plate I is more securely held in a horizontal position as it is moved toward and from the burner.

N represents a float, which is pivoted or otherwise arranged in the oil-pot on one side of the filler-opening n , and which is provided at its free end with a pointer or indicator o , which is arranged underneath the filler-opening. This pointer is preferably bent upwardly, so that it rises into the filler-opening in advance of the oil. As the oil rises in the oil-pot, the float, which is made of cork or any other buoyant material, rises, and the pointer rises in the filler-opening and indicates the position of the oil-level. The float itself is arranged on one side of the filler-opening, and therefore not liable to obstruct the same and cause spattering of the oil.

The globe is provided at its top with the usual bead p , which assists in injecting fresh air into the top chamber of the lantern. This bead is, however, flattened or cut away at both sides opposite the tubes, as represented at q , in order to reduce the width of the lantern.

The burner-cone being formed with or secured to the perforated plate, it is swung away from the wick-tube with the plate, whereby the trimming of the wick is greatly facilitated, while the construction of the burner is rendered exceedingly simple and cheap, and yet made safe, as the parts of the burner are securely attached to the oil-pot.

In order to reach the burner for lighting and extinguishing, it is most convenient to raise the globe, because the overhanging weight of a tipped globe is objectionable when the lantern is held in the hand; but for trimming the wick it is more convenient to tip the globe back, because better access is thereby afforded to the wick-tube. After removing the globe from the clasp the perforated

plate, with the wire clasp or globe-holder attached thereto, can be readily slipped from the guide-bars K and so be detached from the lantern for more conveniently cleaning the parts and for other purposes.

By forming the burner-cone on the perforated plate or securing it thereto the size and cost of the cone are reduced, as the skirt or cone plate is dispensed with.

The globe frame or clasp holds the upper end of the globe normally below the lantern-top, as represented in Fig. 1, so that fresh air can enter the lantern-top over the upper end of the globe and the products of combustion can escape from the globe. When the globe-support is raised for exposing the burner, the upper end of the globe enters the lantern-top, as represented in Fig. 6, the inner air-chamber being made somewhat larger than the top of the globe for this purpose.

My improved construction reduces the size of the lantern and renders it compact and comparatively cheap of manufacture, while the devices whereby access is given to the burner are extremely simple and durable and much more convenient than those heretofore known.

I claim as my invention—

1. The combination, with the lantern-frame and the movable globe-support, of a hinge and guide which permit the globe-support and the globe attached thereto to be tilted or to be raised and lowered, as desired, substantially as set forth.

2. The combination, with the lantern-frame and the movable globe-support, of bars or rods secured to the lantern-frame and having lateral portions on which the globe-support can be tilted and upright portions on which it can be raised and lowered, substantially as set forth.

3. The combination, with the lantern-frame and the movable globe-support, of a hinge-connection which permits the globe-support and the globe attached thereto to be tilted and a back-stop against which the upper surface of the globe-support rests when tilted, substantially as set forth.

4. The combination, with the lantern-frame and the movable globe-support, of a hinge and guide which permit the globe-support to be tilted or raised and lowered, and stops formed on the inner side of the lantern-frame by which the globe-support is locked in its normal and in a raised position, substantially as set forth.

5. The combination, with the oil-pot, an air-chamber secured thereto, tubes connected with the air-chamber, and a wick-tube attached to the oil-pot, of a movable globe-supporting plate provided with a downwardly-projecting annular bead formed integral with said plate, and a burner-cone attached to said plate within said bead, substantially as set forth.

6. The combination, with the lantern-frame and the movable globe-support arranged in

said frame, of a globe provided at its upper end with a bead having its portions opposite the side parts of the lantern-frame removed or flattened, substantially as set forth.

5 7. The combination, with the oil-pot having a filler-opening, of a float arranged in the oil-pot on one side of the filler-opening and provided with an indicator or pointer underneath the filler-opening, substantially as set forth.

10 8. The combination, with a tubular lantern-frame provided with a fixed top, of a globe-supporting plate capable of moving up and down in the tubular frame, a globe, and a globe-frame which is attached to said plate
15 and which holds the globe on said plate independent of the lantern-top, substantially as set forth.

20 9. The combination, with a tubular lantern-frame provided with a top adapted to receive the upper end of the globe when raised, of a globe-supporting plate independent of the lantern-top capable of moving up and down in the tubular frame, a globe, and a globe-frame which is attached to said plate and
25 which holds the globe with its upper end normally below the lantern-top, and raises the upper end of the globe into the lantern-top upon raising the globe-plate from the burner, substantially as set forth.

10. The combination, with a tubular lantern-frame provided with a top adapted to receive the upper end of the globe when raised, of a globe-supporting plate independent of the lantern-top, guides on which the globe-plate can be moved up and down in the tubular frame, a globe, and a globe-frame which
35 is attached to said plate and which holds the globe with its upper end normally below the lantern-top, and raises the upper end of the globe into the lantern-top upon raising the globe-plate from the burner, substantially as
40 set forth.

11. The combination, with a tubular lantern-frame, of a movable globe-supporting plate, a frame attached to said plate, whereby
45 the globe is held on the same, and side guides and rear guides on which the globe-plate and frame are moved toward and from the burner, and whereby the globe-plate is steadied
50 between the tubes and in rear of the tubes, substantially as set forth.

Witness my hand this 21st day of November, 1889.

CHARLES J. HIGGINS.

Witnesses:

THEO. L. POPP,
CHESTER D. HOWE.