

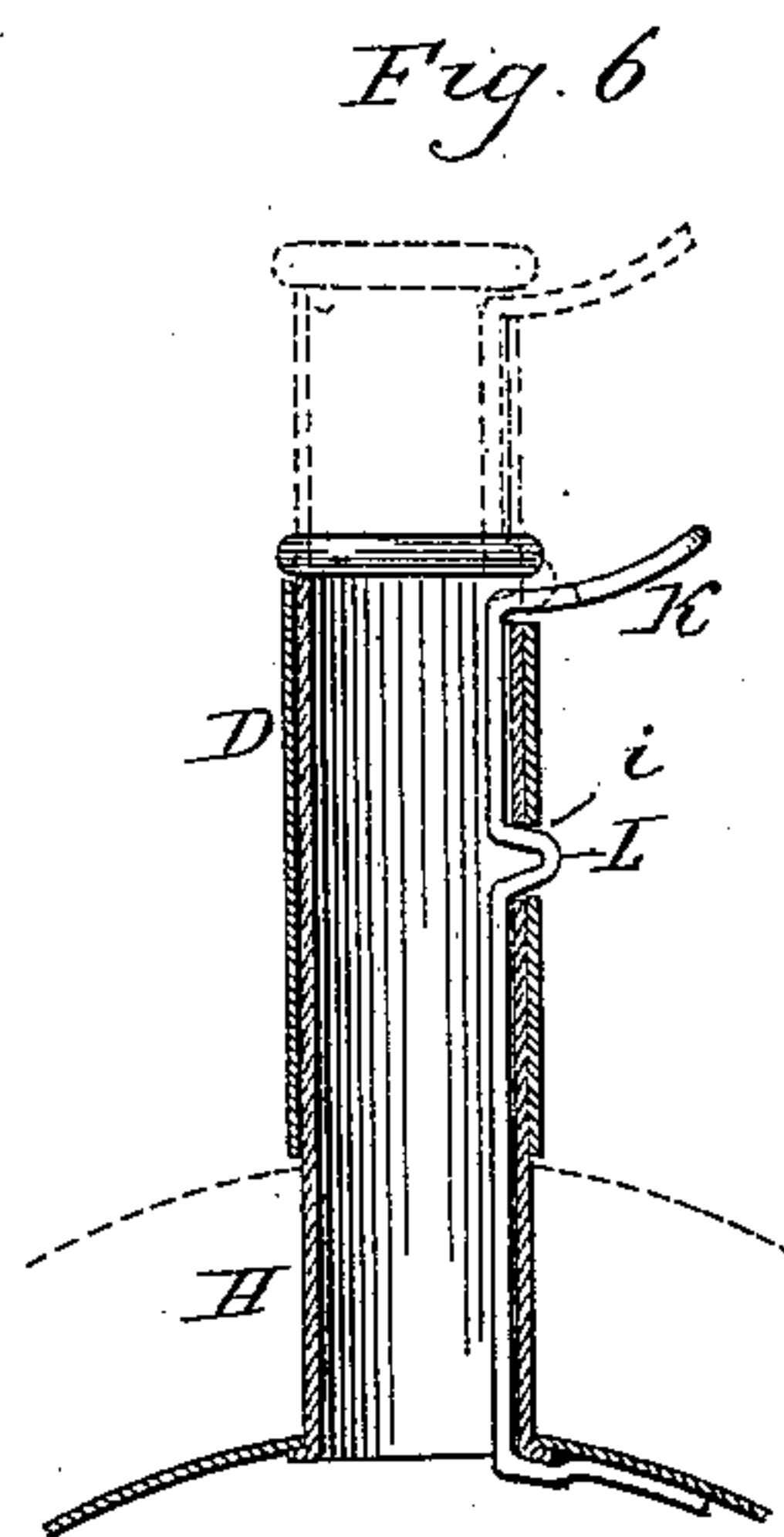
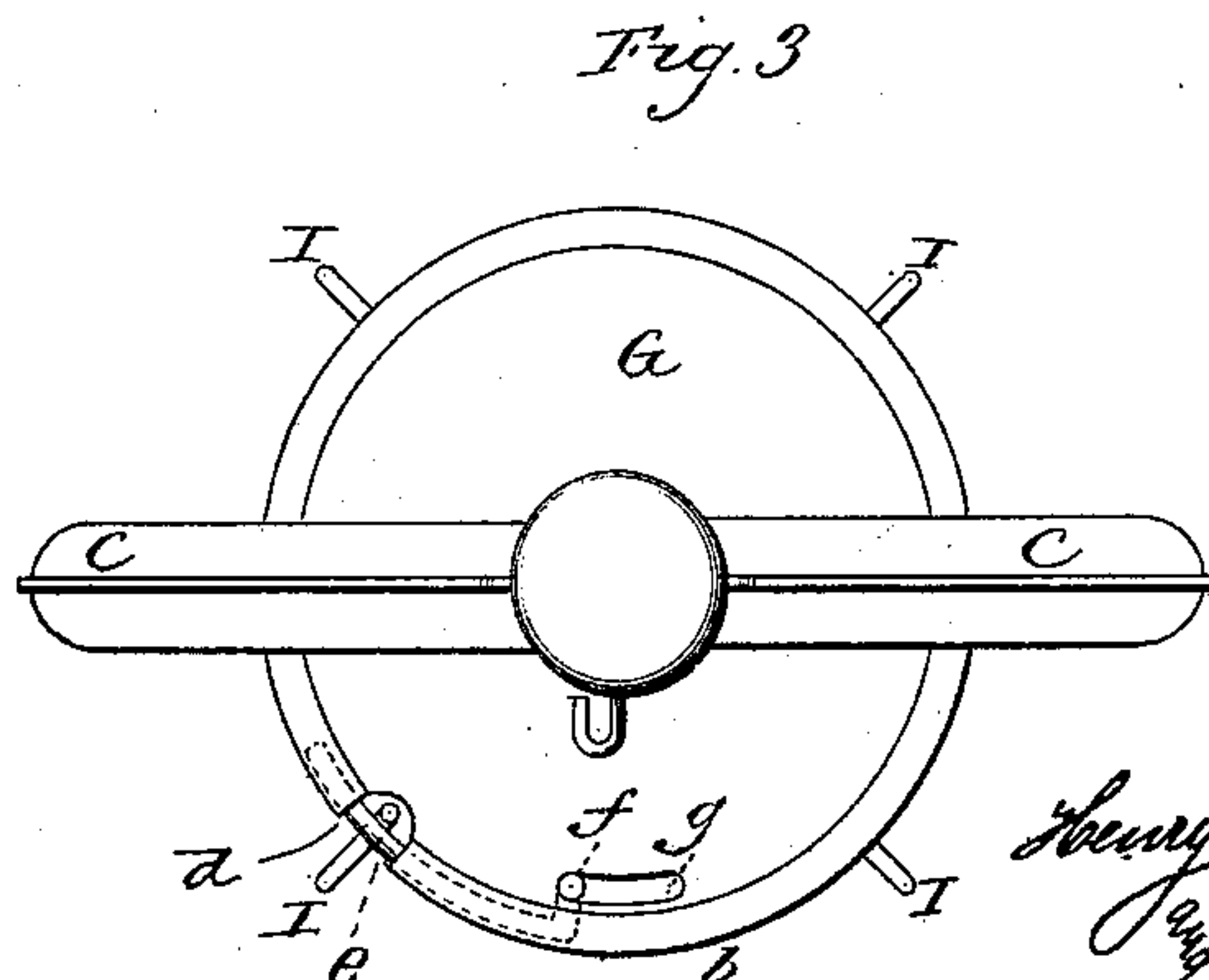
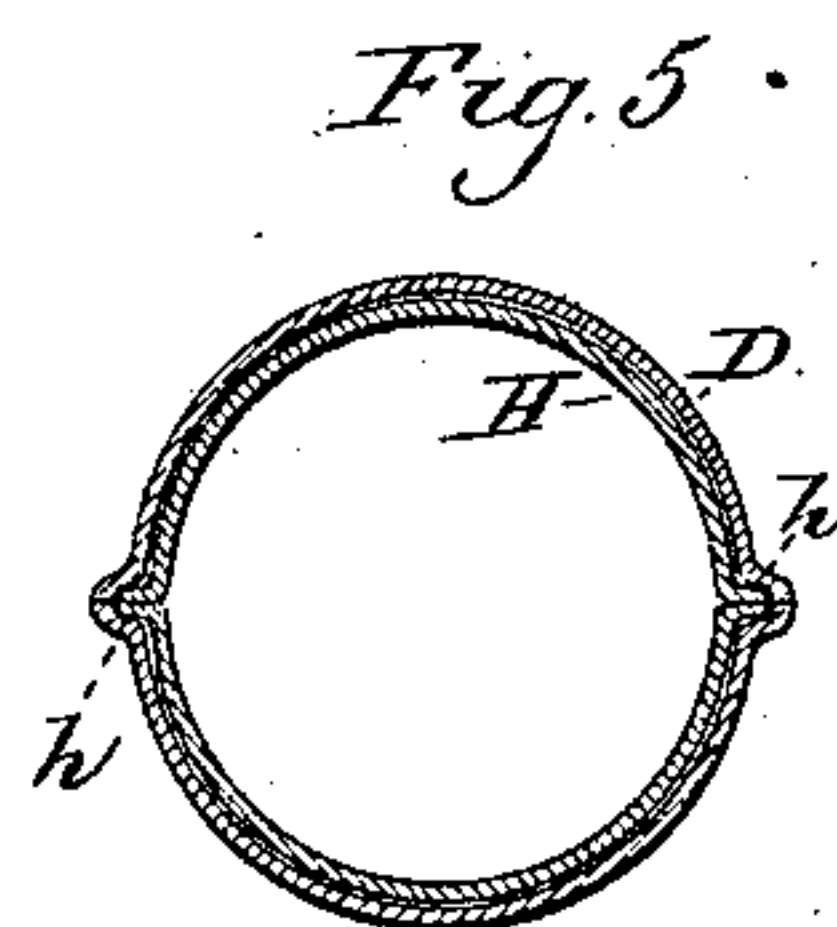
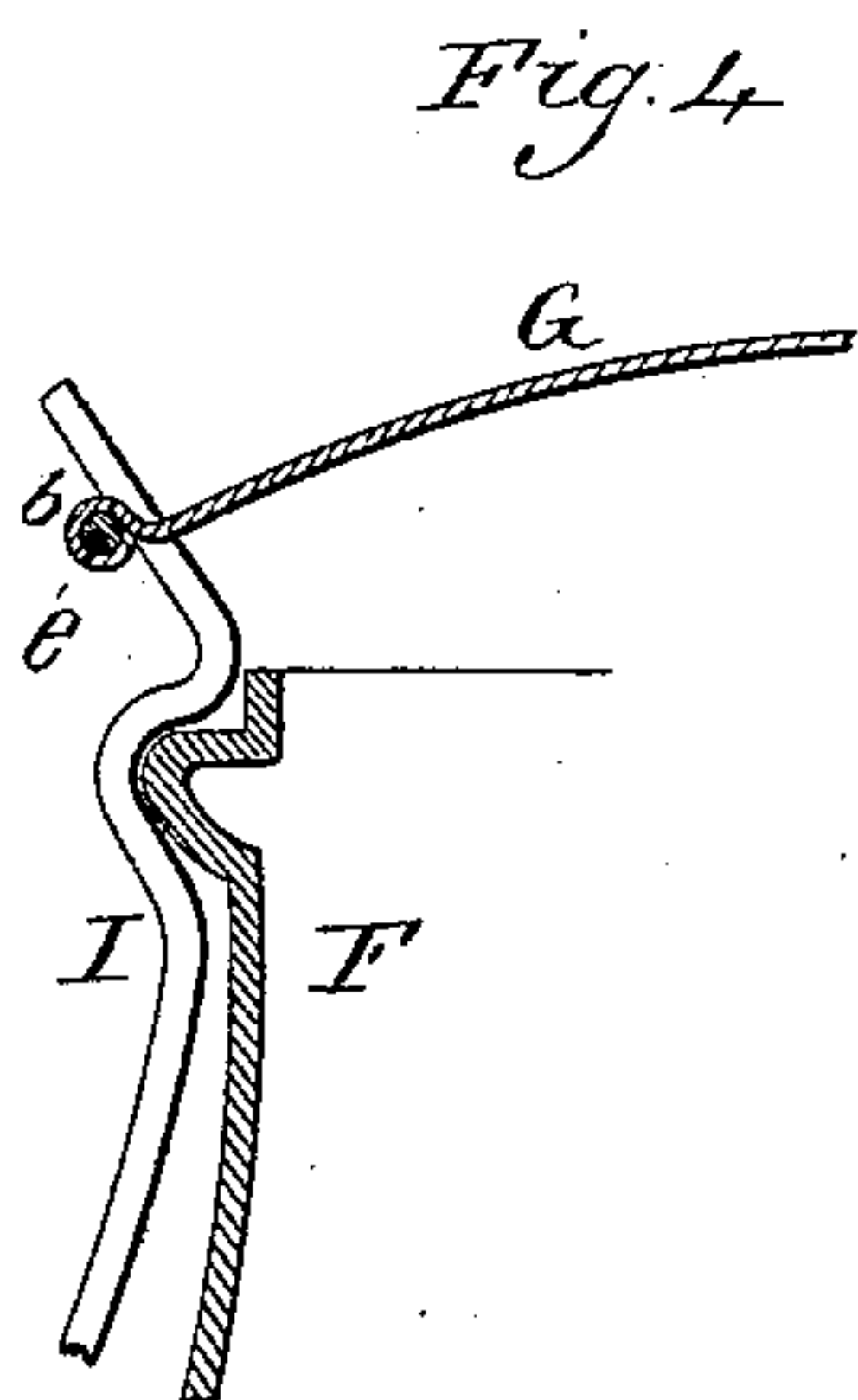
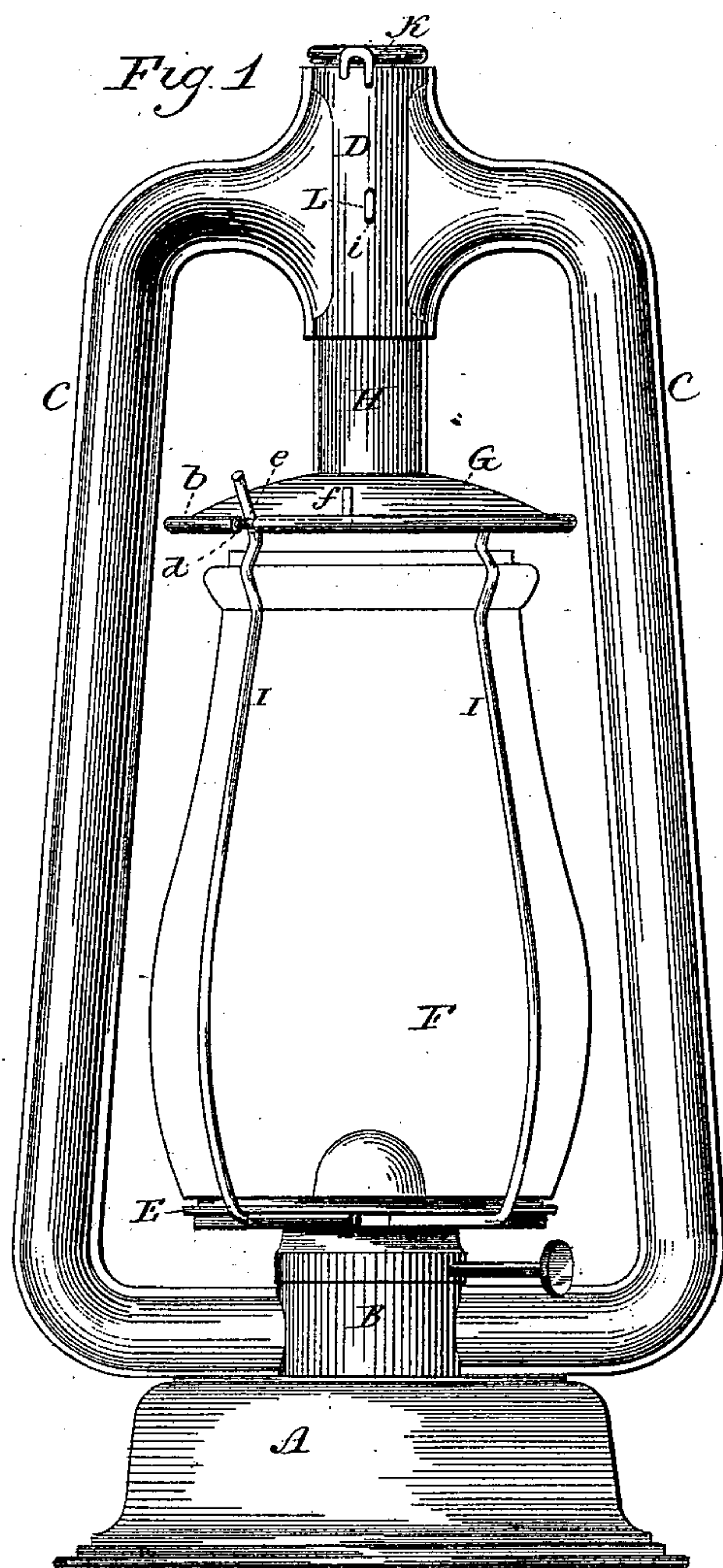
(No Model.)

2 Sheets—Sheet 1.

H. A. MATTHEWS & D. M. IRELAND.
LANTERN.

No. 405,106.

Patented June 11, 1889.



Witnesses
J. H. Shumway
Fred C. Eadie

Henry A. Matthews
David M. Ireland
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(No Model.)

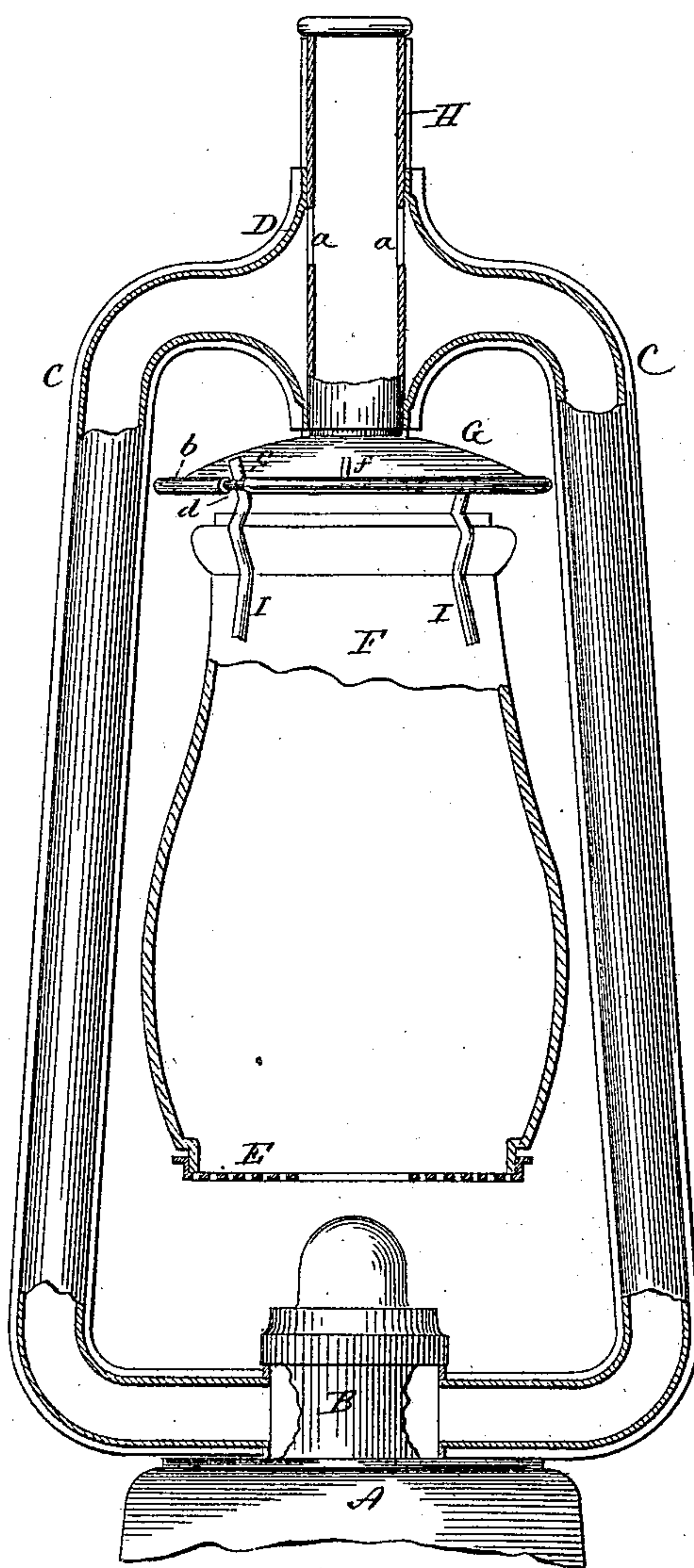
2 Sheets—Sheet 2.

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Fig. 2



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UNITED STATES PATENT OFFICE.

HENRY A. MATTHEWS AND DAVID M. IRELAND, OF WATERBURY,
CONNECTICUT.

LANTERN.

SPECIFICATION forming part of Letters Patent No. 405,106, dated June 11, 1889.

Application filed May 31, 1888. Serial No. 275,661. (No model.)

To all whom it may concern:

Be it known that we, HENRY A. MATTHEWS and DAVID M. IRELAND, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in
5 Lanterns; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact
10 description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of the lantern complete; Fig. 2, a side view in a partial vertical
15 section, globe raised; Fig. 3, a top view; Fig. 4, a transverse section through the edge of the cap near the notch *d*, enlarged; Fig. 5, a transverse section through the tube H and its vertical guide-tube D, enlarged; Fig. 6, a ver-
20 tical section through the guide-tube D and the tube H, illustrating the latch.

This invention relates to an improvement in that class of lanterns commonly called
25 "tubular" lanterns—that is to say, lanterns in which a receiver is arranged above the globe, into which air passes with products of combustion from the flame below, and in which
30 tubes are arranged leading from the said receiver into an air-chamber below the globe, so that air to support combustion will be heated and conducted through the tubes to the air-chamber below—and is an improve-
35 ment upon the invention for which we have made application for Letters Patent, Serial No. 264,268, filed February 16, 1888.

A represents the base of the lantern, which forms the fount; B, the air-chamber around the burner; C C, the air-conducting tubes which lead into the air-chamber. These tubes
40 extend upward above the globe and are centrally united above the globe in a vertical tube D.

E is a perforated plate supported upon the burner, and which forms the rest for the globe
45 F. Above the globe is a receiver or cap G, into which the upper end of the globe opens, but so as to leave a space between the globe and the cap for the admission of air. The cap is fixed to a vertical central tube H, which
50 opens through the cap to the globe. This

tube H is of a diameter corresponding to the tube D and extends upward through it and is free to move vertically therein, as from the position seen in Fig. 1 to that seen in Fig. 2.

Through the opposite sides of the tube H
55 openings *a a* are formed into the upper end of the conducting-tubes C, and so that when the parts are in their normal condition, as seen in Fig. 1, and the lamp lighted the heat from the flame rises and creates a draft of air from
60 the outside into the receiver over the globe, which air, being heated and mingling with the products of combustion, is conducted through the tube C into the air-chamber below, as
65 usual in tubular lanterns.

As a means for uniting the disk E with the cap above the globe and at the same time forming a guard for the globe, we attach several
70 wires I to the disk below, which extend up outside the globe and are joined to the cap or receiver G above. These wires are so far out-
75 side the globe as to form a guard to protect the globe; but at their upper ends they are bent to form a recess corresponding to the rib *b* around the upper end of the globe, so
80 that embracing that rib the wires support the upper end of the globe, and so that as the cap G is raised the disk E and the globe resting thereon will be correspondingly raised, as
85 from the position seen in Fig. 1 to that in Fig. 2. In the raised position the burner is exposed for lighting or trimming.

In order that the globe may be introduced or removed, as occasion may require, we hinge one or more of the guard-wires to the
85 disk E below, and so that it may swing away from the globe, and thus produce an opening through the guards of sufficient extent for the introduction or removal of the globe.

As a means for securing the upper end of
90 the hinged guard-wire to the cap, we construct the cap with a tubular edge, as seen in Figs. 3 and 4, which is done by rolling the edge as for the introduction of a strengthening-wire. Through this tubular edge, at a po-
95 sition corresponding with the hinged guard-wire, we make a notch *d*, (see Fig. 3,) into which the upper end of the guard-wire may pass, and in the adjacent tubular edge of the cap we introduce a wire bolt *e*, from which a
100

handle *f* projects, preferably, upward through a corresponding slot *g* in the cap, the bolt being segment shape, corresponding to the circular edge of the cap, and so that the bolt may slide in the cap across the notch *d* or be withdrawn therefrom, and so that when the guard-wire has been set into the notch the bolt may be moved across the notch outside the guard-wire, and thus hold the guard-wire in place. Then when it is desirable to open the guard for the removal or introduction of a globe the bolt is withdrawn, leaving the hinged guard-wire free to be turned upon its hinge, as before described.

To prevent the tube H from rotating in its guide-tube D, we construct the tube H with a projecting vertical flange *h* at one or more points and construct the guide-tube D with corresponding vertical grooves, as seen in Fig. 5. The ribs on the tube H, working freely in the grooves of the tube D, prevent the rotation of the tube; but it will be understood that any non-cylindrical shape of the tube H and corresponding non-cylindrical shape of the tube D will accomplish the purpose.

To lock the globe in its down position, we arrange in the tube H a spring-latch J, which is best made from wire, one end made fast upon the inside of the tube H, as seen in Fig. 6, and extending up, its upper end being turned outward to form a handle K. A bend is made in the wire to form a nose L, which is adapted to project through a corresponding slot *i* in the guide-tube D when the globe is in its down position, as seen in Fig. 1, and also seen in Fig. 6. The handle K permits the latch to be forced inward to take its nose L inward from the slot *i*, and so that the inner tube, with the globe it carries, is then free to be raised. The same handle K serves as a convenient means for raising the tube and globe, and when at the extreme up position the latch will be thrown forward by its own elasticity into another notch, or over the upper end of the tube D, as represented in broken lines, Fig. 6, and thus serve as a means for holding the globe in the up position.

The number of guard-wires may be varied according to circumstances, and more than one of the wires may be hinged, as we have described, a corresponding notch being formed in the cap above. This representation of a single hinged wire will be sufficient for the illustration of the invention.

We do not in this application claim, broadly, anything shown or described in our before-mentioned application, except in the combination, as hereinafter specified.

We are aware that the cap above the globe in tubular lanterns has been arranged to slide vertically, guided in such vertical movement upon a vertical tube which connects the side tubes, and that a latch has been arranged to support the said cap in either its up or down position, and therefore do not broadly claim a latch for this purpose.

We claim—

1. In a lantern substantially such as described, the combination of the perforated plate E, adapted to rest on the burner below, the cap G above, constructed with a notch *d* in its edge, the edge of the cap adjacent to the said notch made tubular, a bolt arranged in said tubular edge of the cap and adapted to be moved across said notch to open or close the same, the globe F, seated upon the plate E and below the cap G, two or more guard-wires extending from the plate below outside the globe to the cap above and rigidly secured by their respective ends to the said plate and cap, and a guard-wire hinged to the said plate below extending upward, its upper end adapted to enter said notch in the cap and to be engaged therein by the said bolt, substantially as described.

2. In a lantern substantially such as described, the combination of the perforated plate E, adapted to rest on the burner, the cap G above, the globe F, seated upon said plate E and below said cap G, two or more guard-wires extending from the said plate below the globe to the cap above and united by their respective ends to the said plate and cap, the tubes C C, united at their upper ends by a vertical tube D over the cap, said tubes C opening into said vertical tube, the said cap constructed with a central vertical tube H, extending up through said vertical tube D, the said vertical tube D forming a guide for said cap-tube H, and within which said cap-tube H is vertically movable, and a spring-latch J within said cap-tube H, attached thereto so as to move with the said cap and tube, the said latch having a handle projecting therefrom above the tube D, said latch constructed with a nose projecting through the said tube H and adapted to engage a corresponding notch in the surrounding tube, substantially as and for the purpose described.

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Witnesses:

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ELTON CARRINGTON CHURCH.