

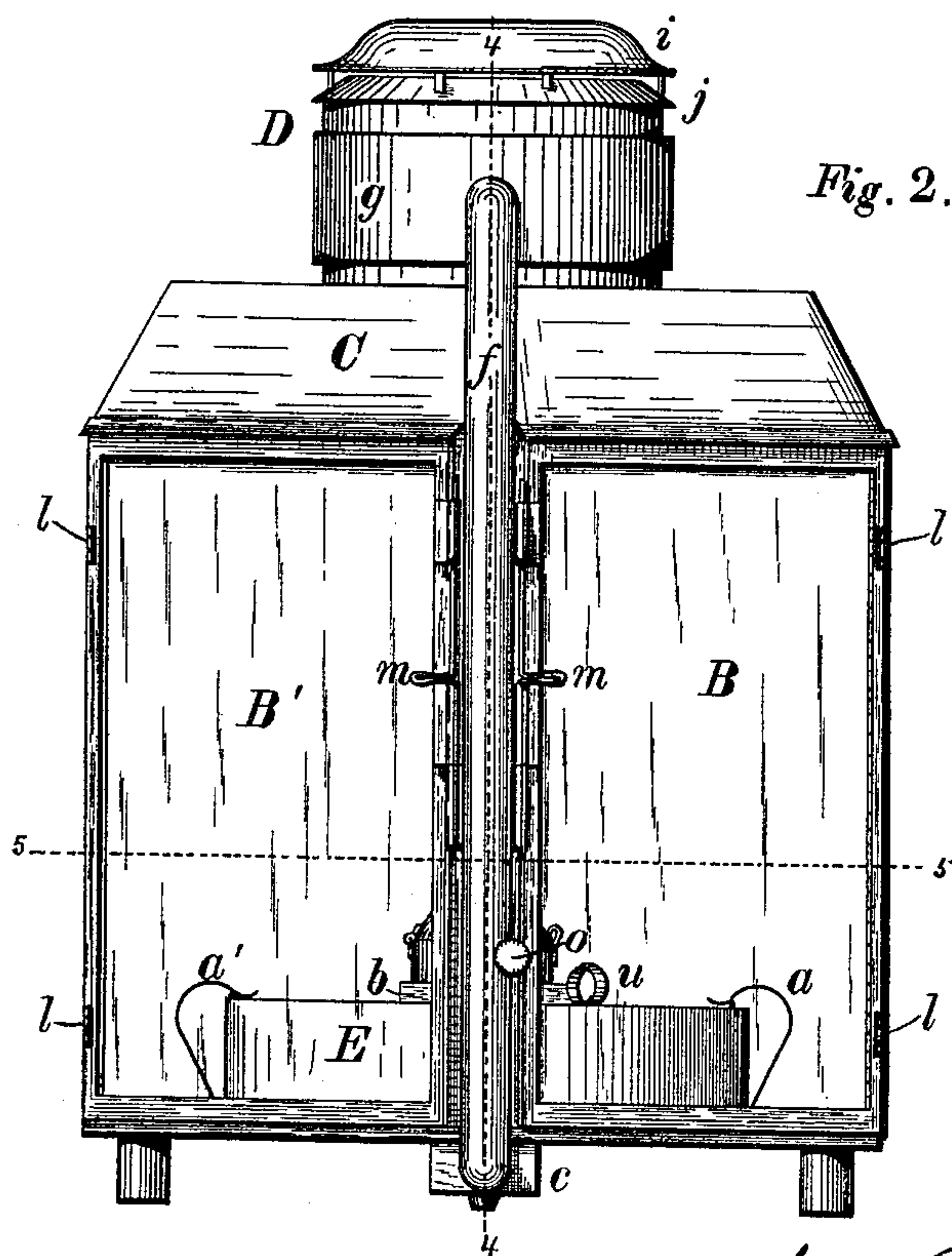
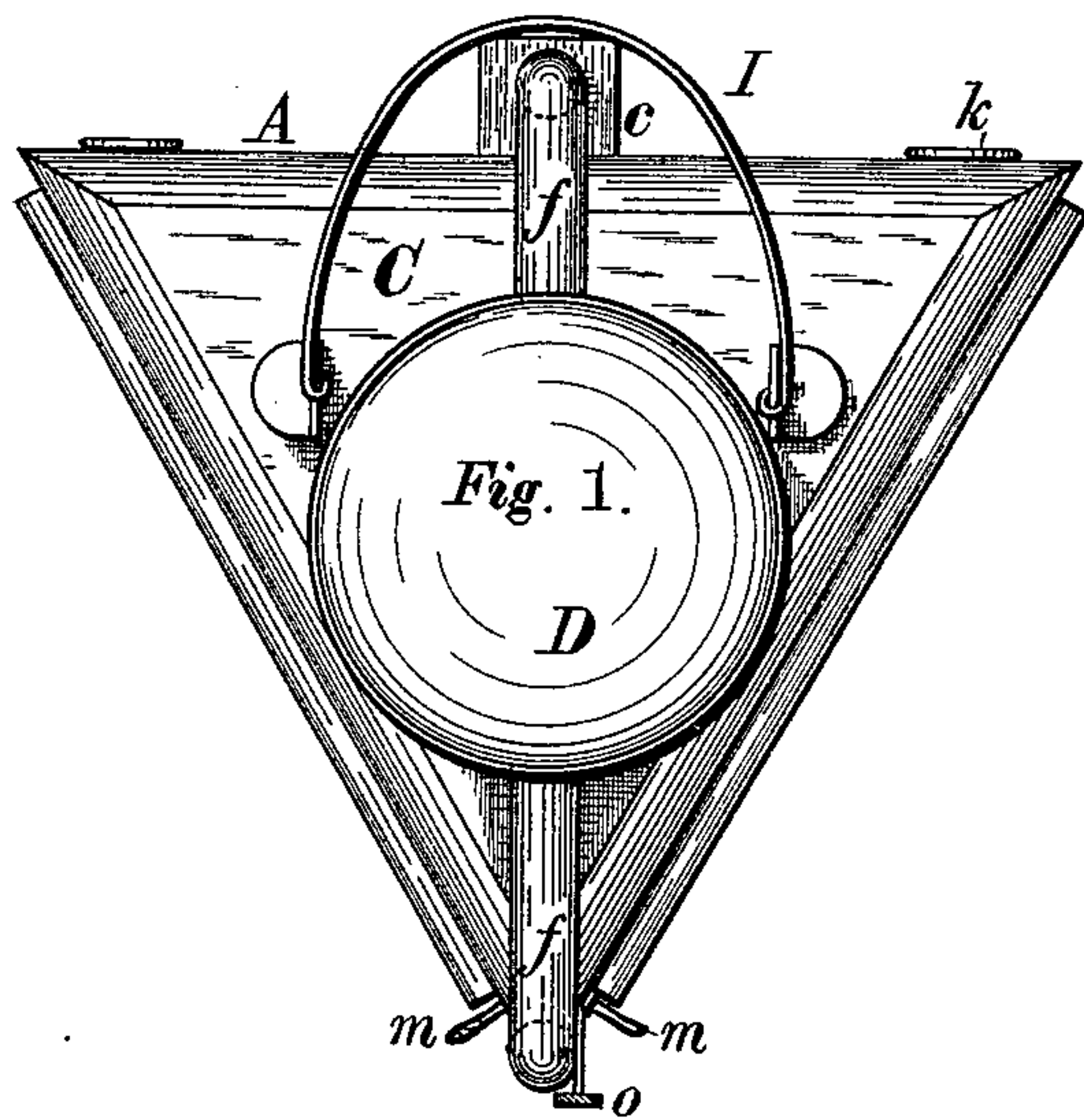
(No Model.)

3 Sheets—Sheet 1.

C. BERGENER.
TRIANGULAR TUBULAR LAMP.

No. 387,038.

Patented July 31, 1888.



WITNESSES-

H. G. Phillips.
C. J. Ham.

INVENTOR-

Chas. Bergener,
by Geo. B. Selden,
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(No Model.)

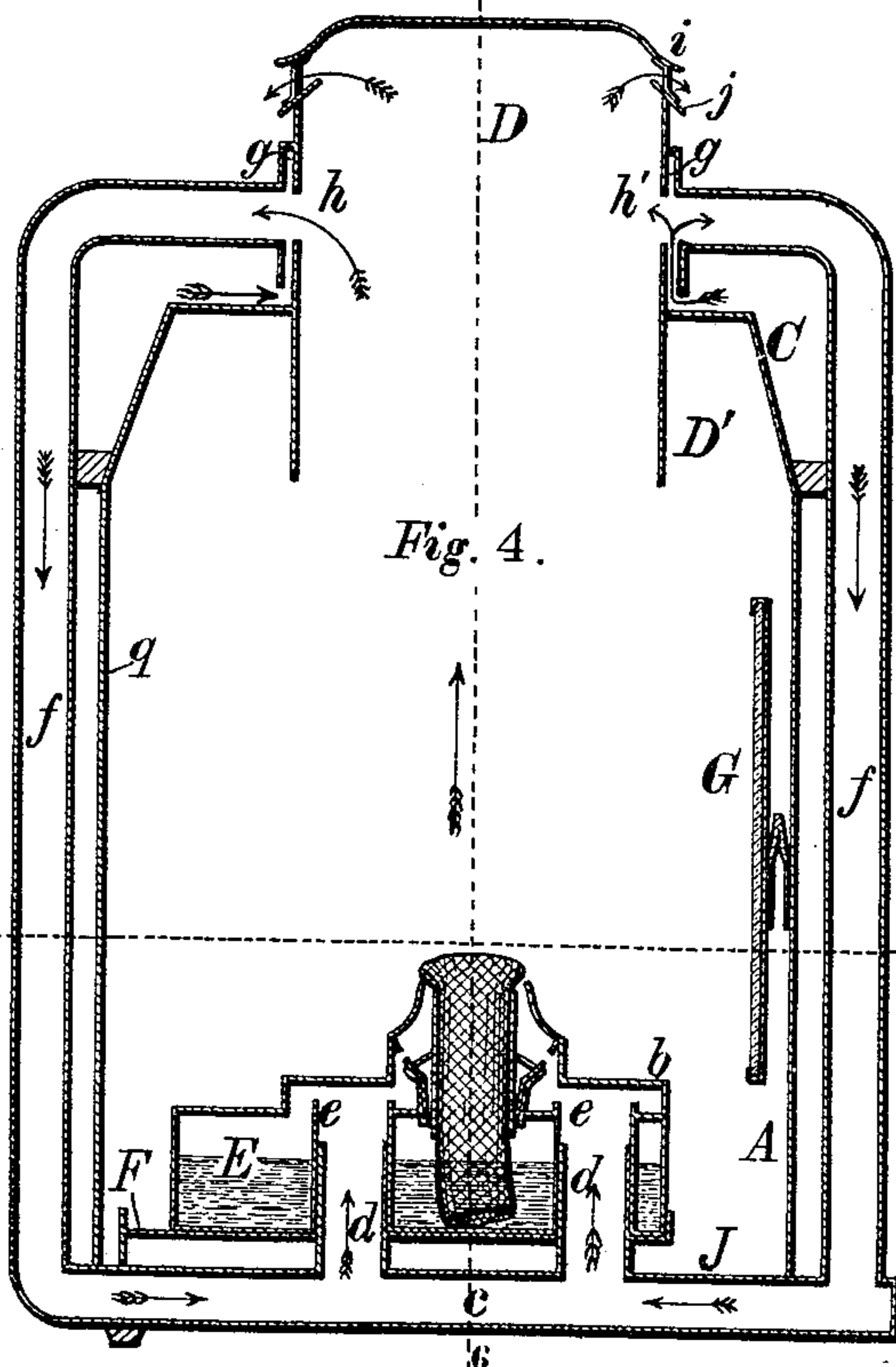
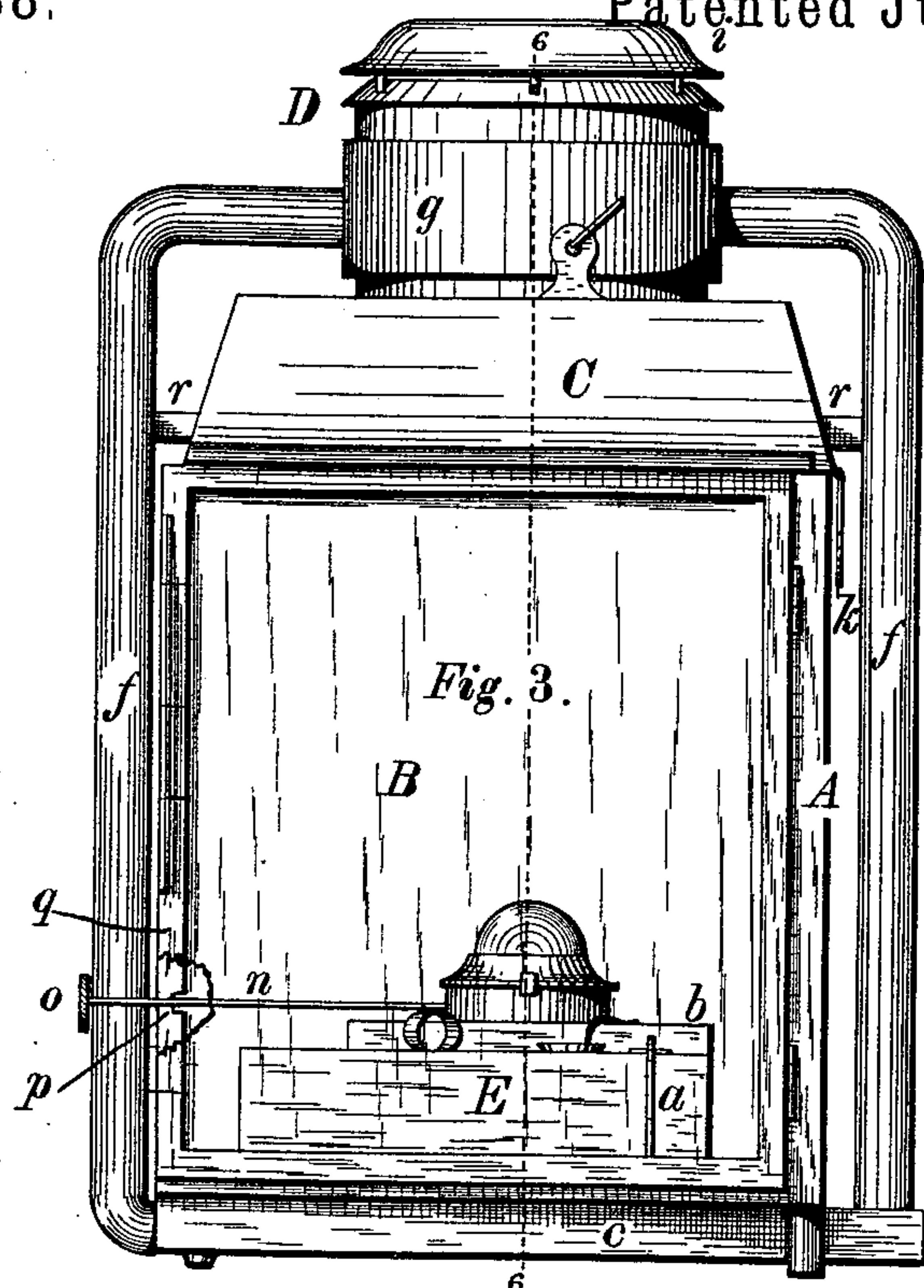
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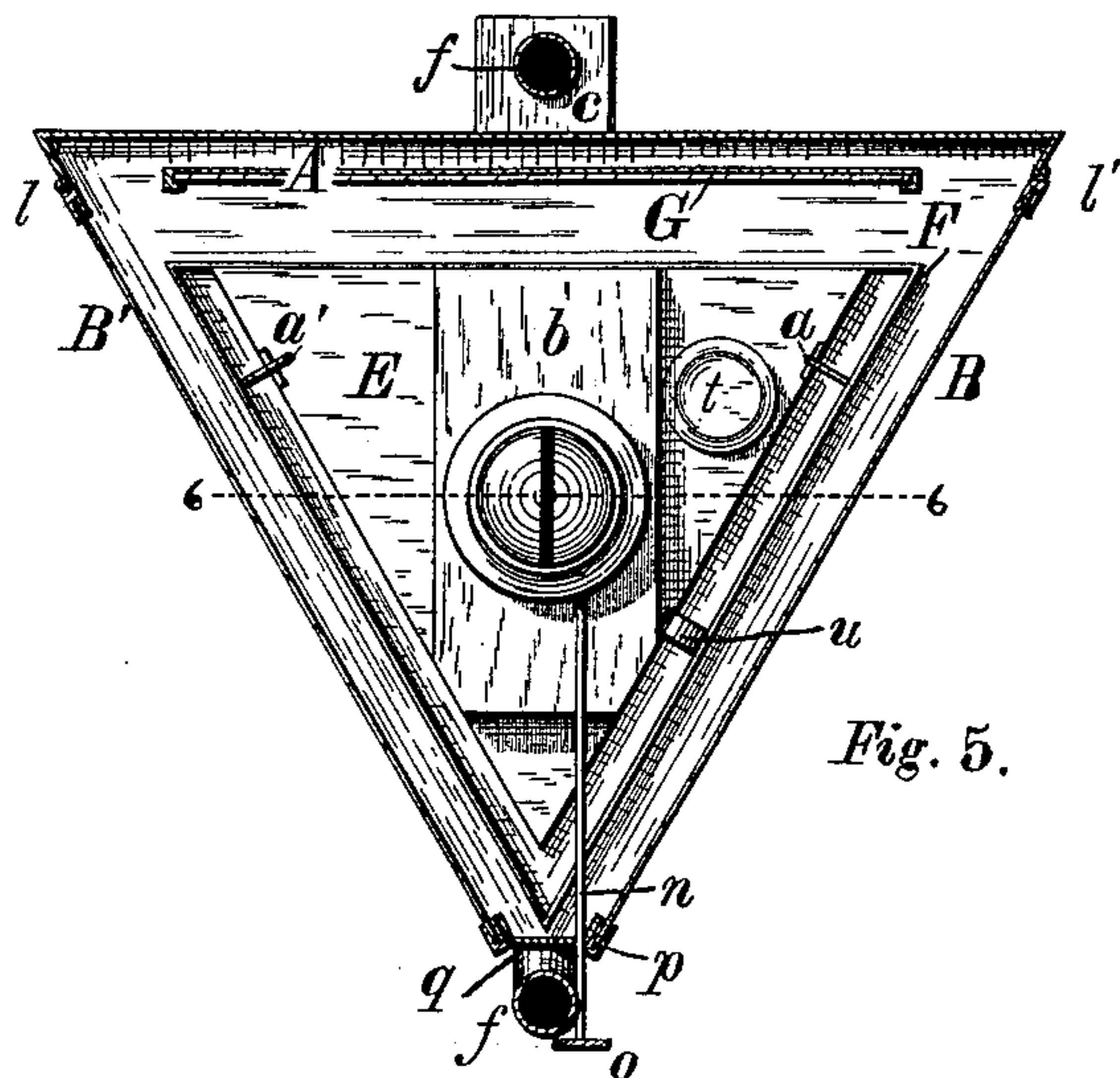


Fig. 5.

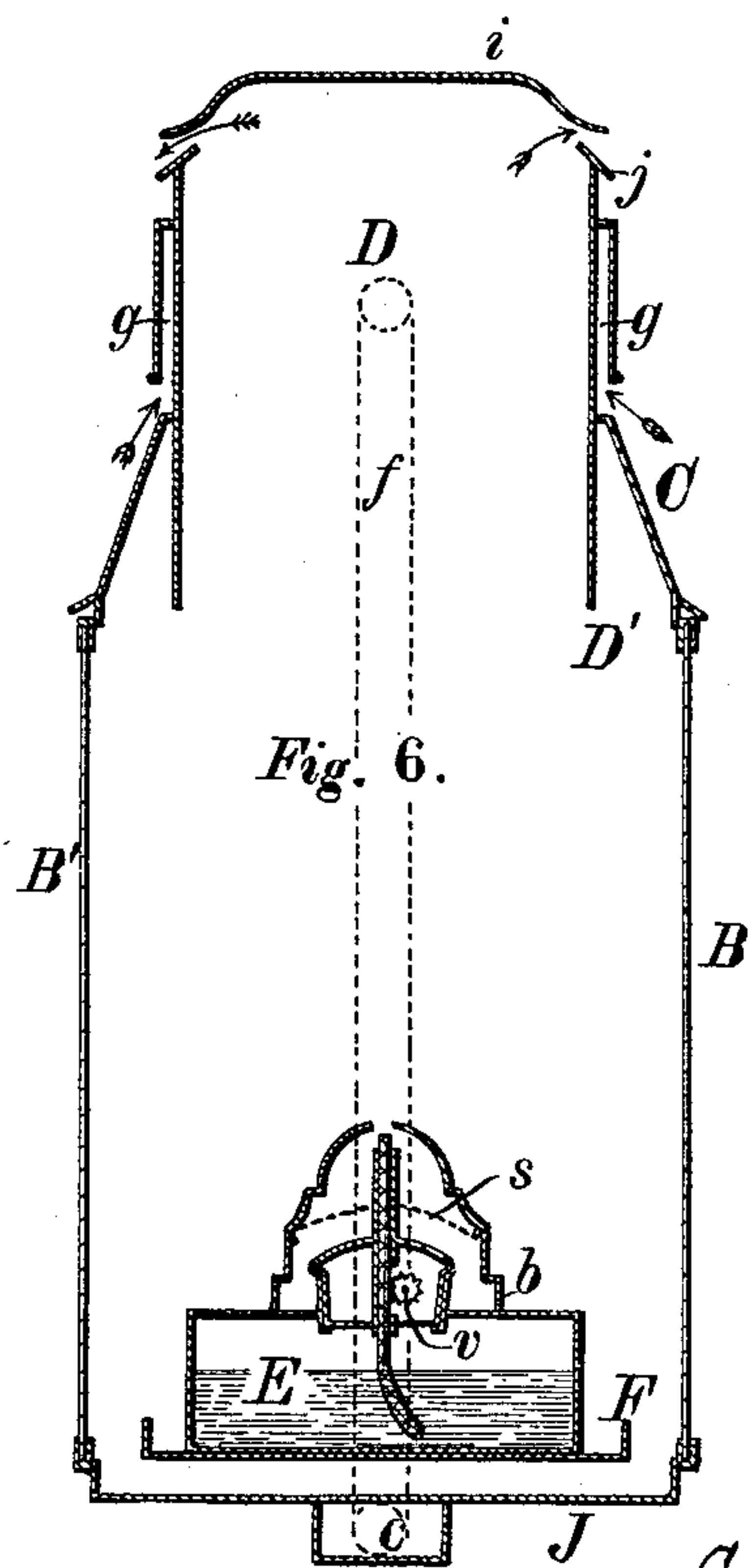


Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES BERGENER, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE C. T. HAM MANUFACTURING COMPANY, OF SAME PLACE.

TRIANGULAR TUBULAR LAMP.

SPECIFICATION forming part of Letters Patent No. 387,038, dated July 31, 1888.

Application filed January 6, 1887. Serial No. 223,507. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BERGENER, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented an Improved Triangular Tubular Lamp, of which the following is a specification, reference being had to the accompanying drawings.

My invention has for its object the application of the tubular principle to triangular lamps, a result which, so far as I am informed, has never been successfully realized in practice.

My improved triangular tubular lamp is fully described and illustrated in the following specification and accompanying drawings, and the novel features thereof specified in the claims annexed to the said specification.

In the accompanying drawings, representing my improved triangular tubular lamp, Figure 1 is a plan view. Fig. 2 is a front elevation. Fig. 3 is a side view. Fig. 4 is a central vertical section on the line 4 4, Fig. 2. Fig. 5 is a cross-section on the line 5 5, Figs. 2 and 4. Fig. 6 is a vertical section on the line 6 6, Figs. 3, 4, and 5.

My improved triangular lamp is illustrated in the accompanying drawings, in which A is the back, B B' are the glazed doors hinged thereto, and C is the top section which is surmounted by the dome D.

E is the oil-reservoir, provided with a suitable burner, and resting on a tray, F, secured to the bottom inside the lantern. Suitable catches, *a a'*, hold the oil-reservoir upon the tray F.

The glazed doors B B' are arranged at a suitable angle with the back, so as to give the lamp the desired triangular form, and, as indicated in the drawings, the oil-reservoir is preferably also made of a similar form. On top the reservoir is formed an air-space, *b*, which communicates with the air tube or chamber *c*, extending from front to back below the lantern-case, by means of the tubes *d d'* rising from the air-tube *c*, and extending into the corresponding tubes *e e*, formed in the reservoir, as shown in Fig. 4. These tubes *e e*, forming communication between the tubes

c d and the air space *b*, also serve to hold the oil-reservoir from lateral movement.

Outside the lantern-case, at the front and back, are the two air-supply tubes *f f*, which rise from the horizontal tube *c*, and are curved inward over the top of the lantern to the dome D, where they connect with an annular air-space, *g*, formed outside the dome, and communicating therewith by openings *h h'* placed opposite the mouths of the tubes *f f*. The wall of the dome D is continued downward into the lantern-case or the top section, C, as shown at D' in Figs. 4 and 6. The advantage of thus continuing the globe downward within the casing is that it directs the heated products to the top of the dome more directly, and by coming nearer the flame prevents flickering of the latter by providing dead air chambers at the sides, and does not subject the top of the lantern to as intense a heat as would be the case with a lamp with a lower top, and further facilitates the draft or circulation through the side tubes. The employment of this downward extension is an adjunct to lamps in which no chimney or globe is used, that greatly improves their operation.

The annular air-space *g* outside the dome is open all around at its lower edge, so as to permit fresh air to enter freely at any point around the circumference. The annular space *g* is closed at its upper edge. The top of the dome D is provided with the cap or cover *i*, below which and above the deflector *j* is left an open space through which the products of combustion escape.

My improved triangular tubular lamp may be provided with a bail, I, for convenience of transportation, and with suitable hinged rings or loops, *k*, by which it may be hung up against a wall or other suitable support. The bottom of the lamp may also be provided with suitable lugs or feet. The glazed doors or sides B B' are hinged to the back at *l l*, and provided at their forward edges with suitable hooks or catches, *m m*, by which they are fastened shut. The burner is provided with the usual star-wheel, *v*, for raising or lowering the wick, the stem of which star-wheel is extended outward in front of the lamp, as indicated at

n, Figs. 3 and 5, so as to permit the adjustment of the wick without opening either of the doors. At its outer end the stem *n* has the small thumb-wheel *o* attached thereto. The stem *n* passes through an orifice or notch, *p*, Fig. 3, in the edge of the upright post *q* at the front of the lamp, so as to permit the frame of the glazed door *B* to shut against the post. The top section, *C*, is made triangular in shape to correspond with the body of the lamp, its sides being preferably inclined inward, as represented in the drawings. The air-tubes *ff* are stayed to the top section, as shown at *r r*, Fig. 3.

A suitable reflector, *G*, may be placed inside the lamp, attached to the back.

From the air-space *b* above the reservoir the air rises upward within the burner-cone to obtain access to the flame. The tubes *d* and *e* serve to permit the removal of the oil-reservoir from the lamp, and also supply air to the burner from the lower tube, *e*, in the most direct manner.

s, Fig. 6, is a perforated plate introduced inside the burner-cone to equalize and control the air-current.

t is a filler, and *u* a ring, attached to the oil-reservoir. The tray *F* serves to separate the bottom of the oil-reservoir from the base-plate *J* of the lamp, thus preventing the chilling of the oil in cold weather.

The course of the air-currents in my improved lantern is indicated by the arrows on the various figures. When the lamp is burning in still air, the heated air passes into the dome *D*, and a portion of it, mixed with fresh air received through the annular air-space *g*, passes into the tubes *ff*, as indicated by the arrows on the left-hand side of Fig. 4, and thence is fed to the burner through the pipes *c d d*. When exposed to the wind or currents of air, a somewhat different action takes place in that the fresh air from the air-space *g* passes in part into the air-supply tubes *ff*, while a portion of it enters through the perforations *h h'* into the dome, and is discharged at the top thereof, as indicated by the arrows on the right-hand side of Fig. 4, little or none of the air passing into the supply-tubes. In this way the upward current inside the lamp is balanced against the downward current in the air-supply tubes, and, consequently, the flame, receiving a current of air at a uniform pressure, burns steadily and without flickering.

My improved triangular lamp will burn steadily and without flickering in the most exposed positions, and when subjected to violent blasts or currents of air. Its capacity in

this respect renders it eminently adapted to outdoor uses—such as lighting railway stations or platforms, docks, freight-houses, and similar localities. It may also be used for lighting steamers or sailing-vessels.

The improved construction of the dome and annular air-space herein described may also be employed in other forms of tubular lamps.

It will be noted that by placing an annular chamber entirely around the dome and open only at the bottom drafts of air from any direction, that would tend to extinguish the lamp, will, if they operate on the open top of the dome at all, operate on the downward draft as well.

I claim—

1. In a tubular lantern, the combination, with a suitable burner, oil-reservoir, and air-chamber, of a dome having perforations open to the air, the air space surrounding the said dome closed at the top and open to the air at the bottom, and having openings into the dome, and the air-tubes communicating at the base with the air-chamber and passing upward and communicating with the air-space at the dome, substantially as described.

2. The combination, in a lantern, with the casing thereof, of a top section having a dome which has perforations open to the air and extends downward within the casing, the air-space around the dome communicating therewith and open to the air at the bottom, the burner, the air-chamber, and the air-tubes communicating with the annular air-space and the chamber at the burner, substantially as described.

3. The combination, in a lantern, with the casing, of the perforated dome *D*, having openings *h h'* and extending downward within the casing, the annular air-space *g*, surrounding the dome and open at the bottom only, the burner and the air-chamber and the air-tubes *ff* communicating with the air-space at the openings *h* and with the air-chamber at the burner, substantially as described.

4. The combination, in a lantern, of the top section having the perforated dome, the openings *h h'*, the annular air-space surrounding the same, closed at the top and open at the bottom, the burner and air-chamber of the air-tubes communicating with the chamber at the burner and with the air-space opposite the openings *h h'*, substantially as described.

CHARLES BERGENER.

Witnesses:

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C. T. HAM.