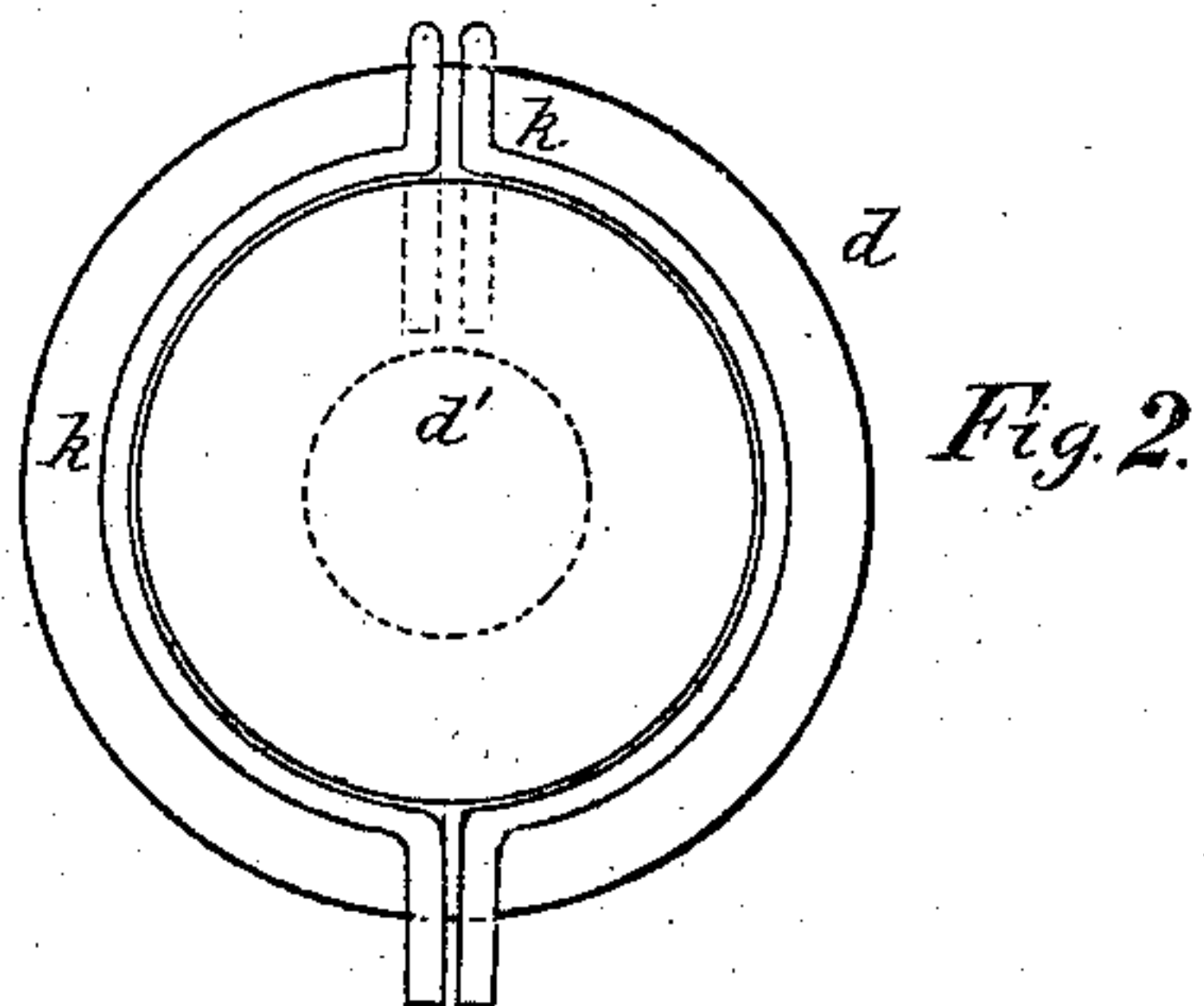
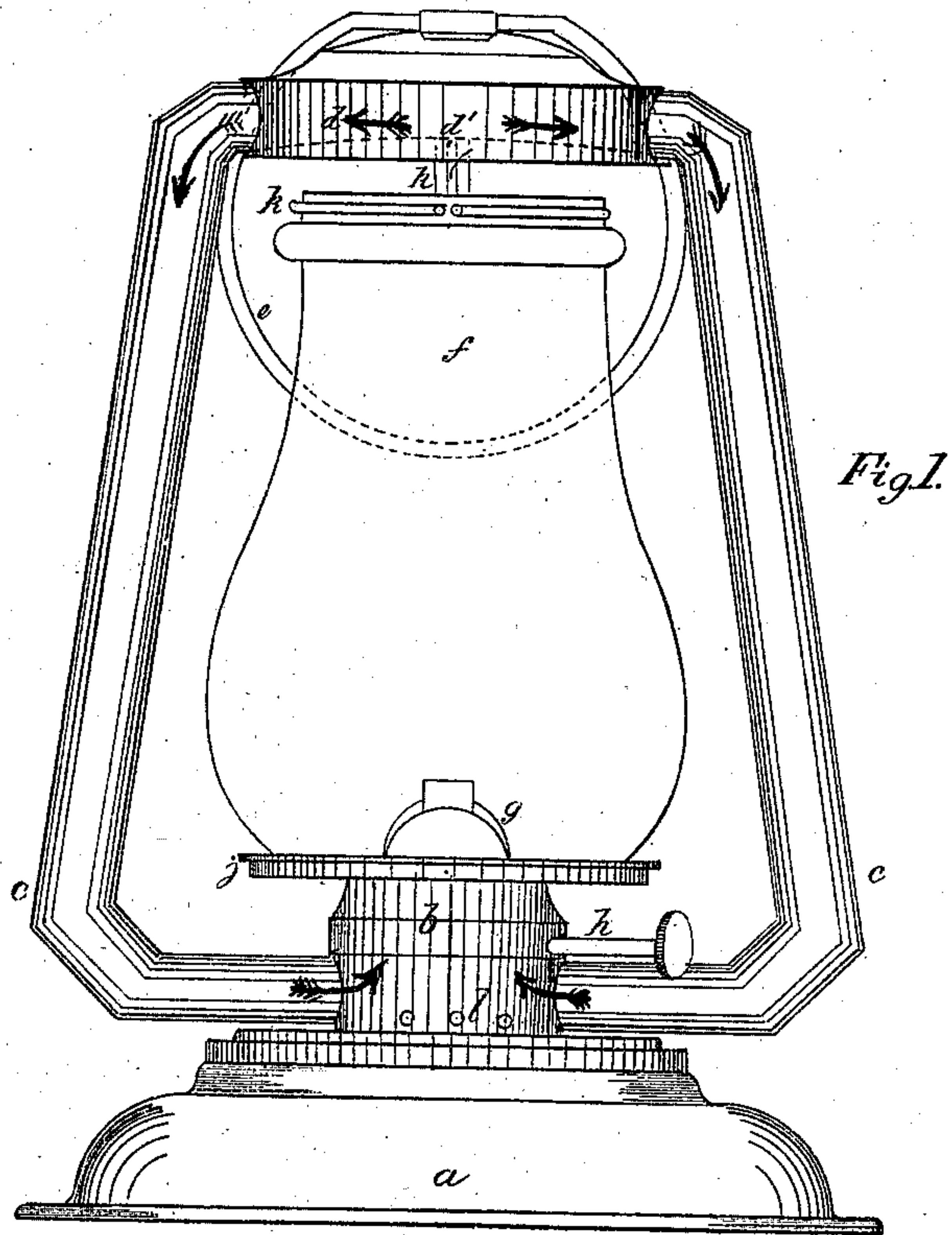


J. H. STONE.
Tubular Kerosene Lanterns.

No. 150,628.

Patented May 5, 1874.



H. P. Puce }
W. G. Puce } Witnesses. *John Henry Stone*

UNITED STATES PATENT OFFICE.

JOHN HENRY STONE, OF HAMILTON, CANADA.

IMPROVEMENT IN TUBULAR KEROSENE-LANTERNS.

Specification forming part of Letters Patent No. **150,628**, dated May 5, 1874; application filed April 1, 1872.

To all whom it may concern:

Be it known that I, JOHN HENRY STONE, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, have invented certain Improvements in Tubular Kerosene-Lanterns; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain improvements upon that class of lanterns which are provided with top and bottom air-chambers and communicating tubes; and it has for its object to furnish a lantern compact and simple in construction, and in which effectual means are provided for supplying the illuminating flame with the requisite quantity of oxygen to support combustion. The invention consists in the arrangement above the globe or chimney of the lantern of a flat or horizontally enlarged air-chamber in contradistinction to a long cylinder, as heretofore employed, said air-chamber being located immediately over the globe, and being provided with a central opening in the bottom and with a closed top, and having downwardly-extending tubes, which are in direct communication at their lower ends with a tubular collar or secondary air-chamber arranged below the burner, and provided with perforations or openings for admitting cold air, which encounters the heated or rarefied air descending from the upper air-chamber through the tubes, and thus creates an upward draft for supplying the burner or illuminating flame with a large quantity of air, which is conducive to increasing the brilliancy of the flame.

In the accompanying drawings, Figure 1 is a side elevation of a lantern constructed according to my invention. Fig. 2 is a top view, showing the manner of holding the globe in position.

Lanterns provided with top and bottom air-chambers, and communicating draft or circulating air-tubes, are, as heretofore constructed, defective, for the reason that the air-chambers must be made high or long, which increases the size of the lantern to such an extent as to render the same objectionable in general use, and, furthermore, in all instances of tubular lanterns, the globe or chimney extends into the upper air-chamber, which necessitates the

employment of a central tube for the escape of the products of combustion.

I avoid the defects or objections incidental to the ordinary tubular lanterns by making the upper air-chamber of such a size and shape as will, in connection with a tubular or hollow base serving also as an oil-reservoir, tend to materially reduce the height or size of the lantern, and to render the same more compact and simple in construction.

Referring to the drawings, *a* designates the base or support of the lantern, which is made hollow, in order to serve as an oil-reservoir. *b* is a tubular collar or air chamber, located immediately above the hollow base, and having the burner *g* and globe-stand *j* applied thereto. *c c* are a series of tubes, two or more, which extend from the collar *b* to an air-chamber, *d*, located above the globe or chimney *f*. The tubes which are in direct communication with the air-chamber and bottom collar serve to convey heated air to the burner or illuminating flame, so as to properly support combustion. The air-chamber is enlarged horizontally and is made flat, and generally of a circular form, and is provided in its lower side with a central opening, *d'*, located immediately above the chimney or globe, and with a solid or closed top. The air which enters the upper air-chamber through the opening in the bottom of the same is heated or rarefied, impinges against the top of the air-chamber, and is diverted through the tubes *c* to the bottom air-chamber *b*, where it encounters a current of cold atmospheric air entering said air chamber or collar through the perforations or openings *l* made in the wall of the same.

The admixture of heated and cold air in the manner set forth will create a proper downward draft in the tubes *c*, in order to supply the illuminating flame in a regular manner with the requisite quantity of oxygen necessary to support combustion.

The products of combustion ascending in globe or chimney will, by reason of the fact that the top of the globe terminates below the air-chamber be deflected or spread partially over the entire bottom surface of the same, so as to draw cold air, together with a portion of the heated gases, into the central opening *d'* of the air-chamber, and as the latter is highly

heated, the air will be rarefied or heated to such an extent as to cause the same to descend the tubes *c* by the suction created by the current of cold air entering the openings *l* in the bottom chamber or collar *b*.

The appendages of a lantern forming no part of the present invention, are the wick-raising device *h*, the guard-wires *i*, the handle or bail *l*, and the globe-fastening device *k*. The globe is held in place by means of the fastening *k*, which consists of a wire soldered to the under side of the air-chamber and passing around the globe, as shown in Fig. 2, projecting outward on the opposite side, so that it can be raised high enough to remove the globe.

I claim—

A lantern having a horizontally-enlarged top air-chamber, *d*, with a central bottom opening, *d'*, and a lower air-chamber or collar *b* provided with openings *l*, the communication between the two chambers being formed by the draft-tubes *c*, and the upper chamber being arranged above the top of the globe or chimney and out of contact with the same, as and for the purpose specified.

Dated at Hamilton, Canada, this 4th day of March, A. D. 1873.

JOHN HENRY STONE.

Signed in the presence of—

WM. BRUCE,
W. B. BRUCE.