

(No Model.)

2 Sheets—Sheet 1.

O. M. SMITH.
TUBULAR LANTERN.

No. 410,460.

Patented Sept. 3, 1889.

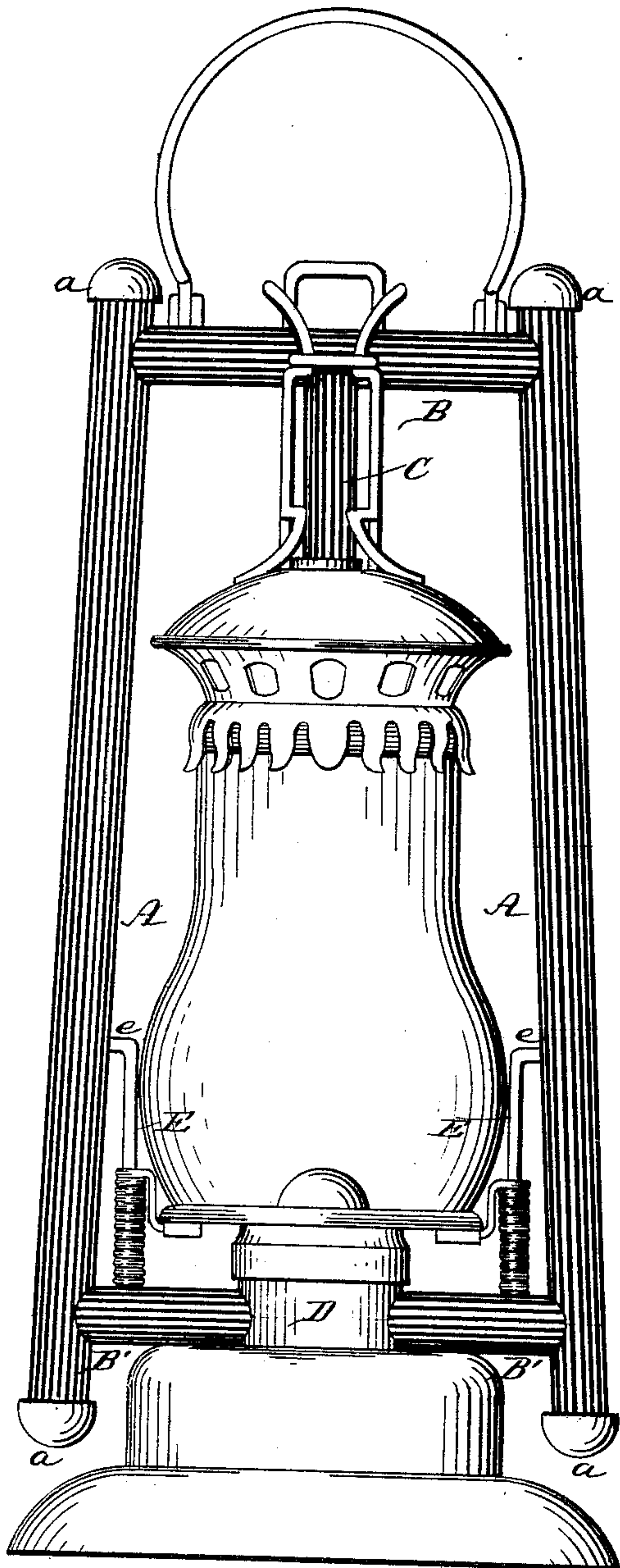


Fig. 1

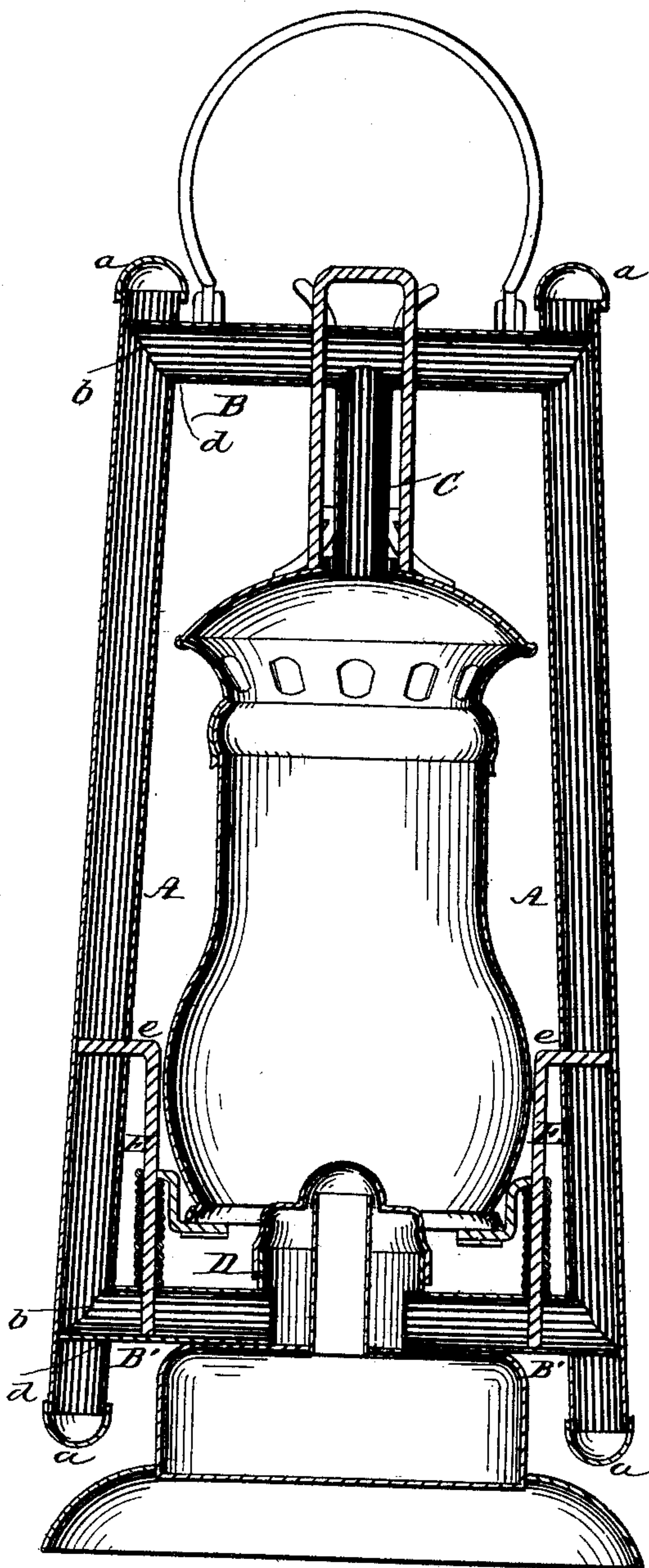


Fig. 2

O. M. Smith

WITNESSES—

Albert B. Blackwood
Oscar W. Humphrey

INVENTOR—

by Connolly Bros.
attys

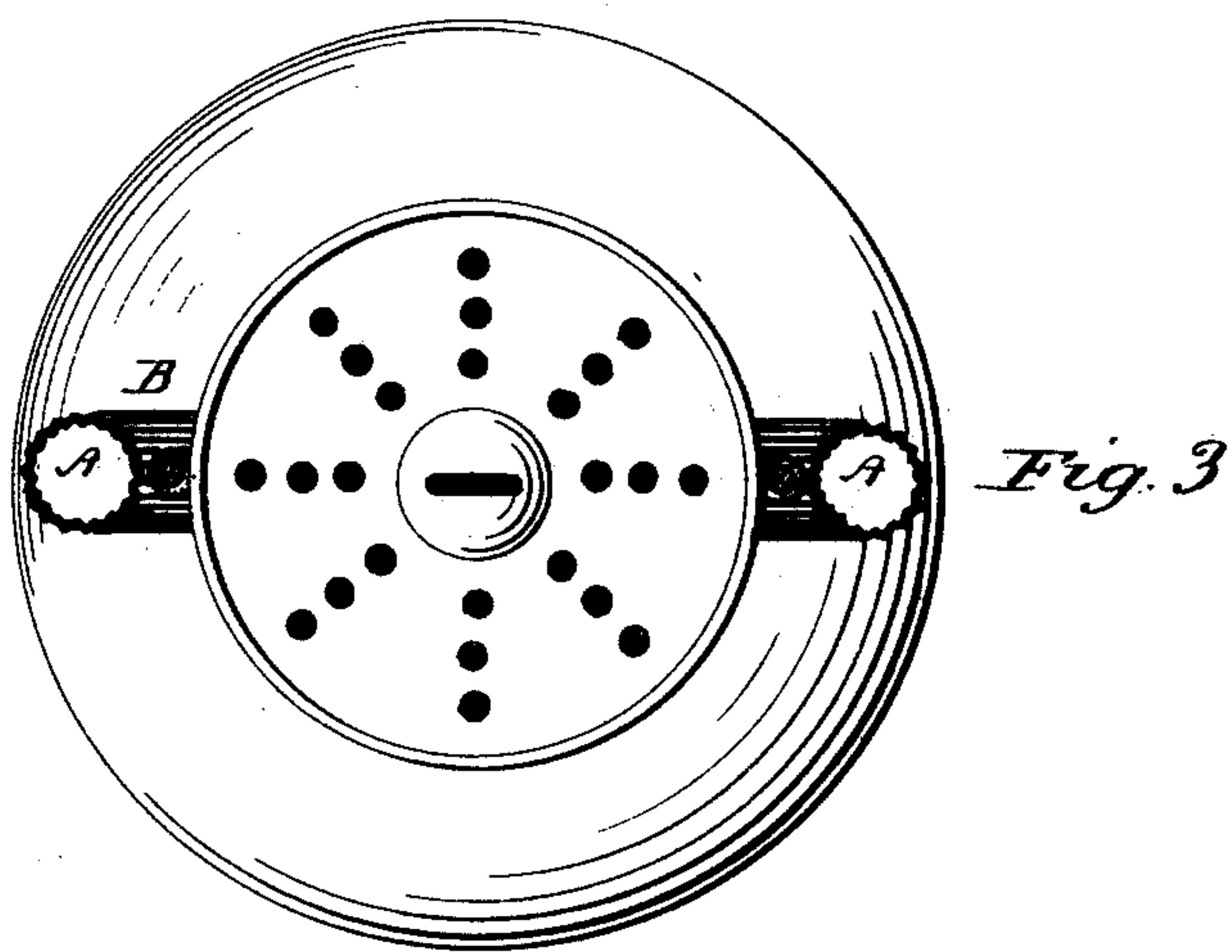
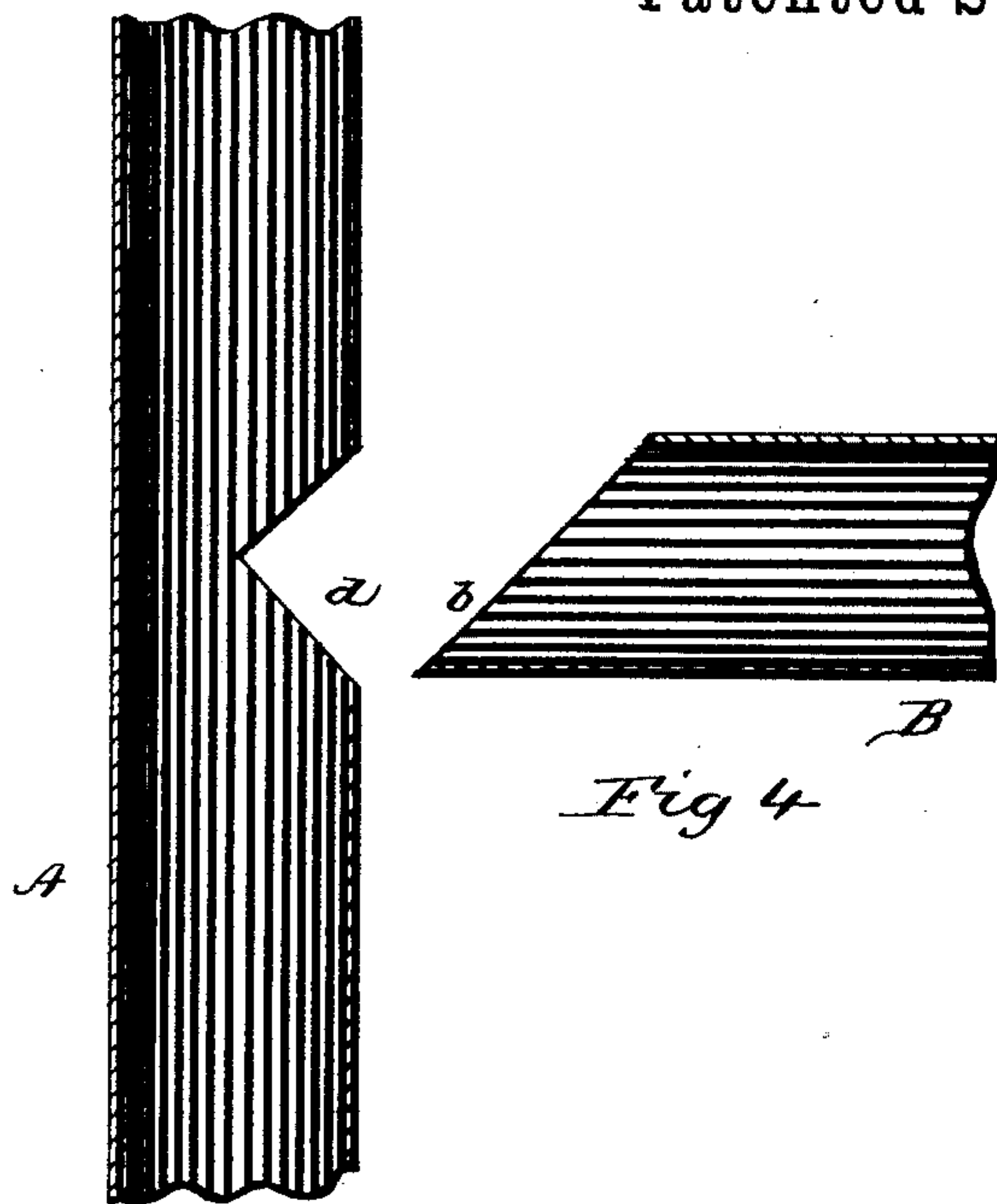
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UNITED STATES PATENT OFFICE.

ORREN M. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM GRANGE, OF SAME PLACE.

TUBULAR LANTERN.

SPECIFICATION forming part of Letters Patent No. 410,460, dated September 3, 1889.

Application filed March 19, 1888. Serial No. 267,732. (No model.)

To all whom it may concern:

Be it known that I, ORREN M. SMITH, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Tubular Lanterns; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

My invention has relation to tubular lanterns; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and specifically claimed.

Referring to the accompanying drawings, Figure 1 is an elevation of a tubular lantern constructed according to my improvements. Fig. 2 is a vertical sectional view; Fig. 3, a horizontal sectional view of the same, and Fig. 4 an enlarged sectional detail view of portions of the tubular frame before joining the same.

A A designate the side tubes of the lantern, which are in a nearly-vertical position on each side of the lantern-chimney, being slightly convergent toward the top of the same. These, as well as all the other tubular portions of the lantern, are corrugated or ribbed in the direction of their length; and by so corrugating these parts I am enabled to use a lighter material in their manufacture, while still preserving a sufficient degree of strength for all purposes. The side or vertical tubes A A are of such length that the upper and lower ends of the same project somewhat above and below the horizontal tubes of the lantern, and to the upper and lower ends of the said side tubes I attach, by soldering or otherwise, ornamental caps *a a*.

B designates the upper horizontal tube; B' B', the lower horizontal tubes, which enter the burner D of the lantern on each side; and C, the vertical tube, which extends from the center of the upper horizontal tube down into the dome of the lantern. The several tubes B B' C are corrugated or ribbed in the direction of their length in similar manner to the tubes A A, and are of the same or about the same diameter as said tubes A A.

The manner in which the side tubes A A and the horizontal tubes B B are joined together is best shown in the sectional view, Fig. 2, and the detail view, Fig. 4. Referring to said figures, it will be observed that the vertical or side tube is provided with a V-notch *d* a short distance from its end, while the horizontal tube B is beveled at an angle of about forty-five degrees, as at *b*. The beveled end of the horizontal tube is fitted into the notch *d*, and is held in position by being soldered within and without to the side tube A. It is to be observed that the bevel of the tube B and the size of notch *d* are relatively so proportioned that the lower half of the beveled portion bears against the outer surface of the vertical or side tube A just along the lower edge of the notch *d*, and by this means the tubes are more firmly braced against one another than if the horizontal tube entered entirely within the notch in the side tube. The upper and lower horizontal tubes B B' B' are secured to the side tubes A A all in the same manner; but the bevels on the upper are in opposite directions to those on the lower tubes, so that when joined together a continuous and uninterrupted passage is afforded through all for the passage of heated air to the burner.

As an additional means of bracing and strengthening the joints of the lower horizontal tubes with the vertical or side tubes, I provide vertical rods E E, bent over laterally at top, as at *e e*. The lower ends of the rods E E pass through holes in the tops of the tubes B B, and the laterally-bent ends *e e* pass through holes in the inner sides of the vertical or side tubes A A, and the said rods at both upper and lower ends project completely through the bore of the tubes and impinge against the walls of the same, to which they are soldered. The rods are also soldered at the points where they enter the tubes and serve to firmly brace the tubes together.

Having described my invention, I claim—
1. In a tubular lantern, the combination, with the side tubes A A, having notches *d d*, of the horizontal tubes having their ends beveled and projected into said notches, substantially as described.

2. In a tubular lantern, the combination,
with the vertical or side tubes A A and the
horizontal tubes secured thereto, of the brac-
ing-rods E E, the lower ends of which project
5 through the walls of the said horizontal tubes
and are soldered thereto, and which have lat-
erally-bent upper ends which project through
and are soldered to the walls of the said ver-
tical or side tubes, substantially as described.

In testimony that I claim the foregoing I do
have hereunto set my hand this 9th day of
March, 1888.

ORREN M. SMITH.

Witnesses:

SAML. A. LEWIS,
CHAS. E. GRANGE.