

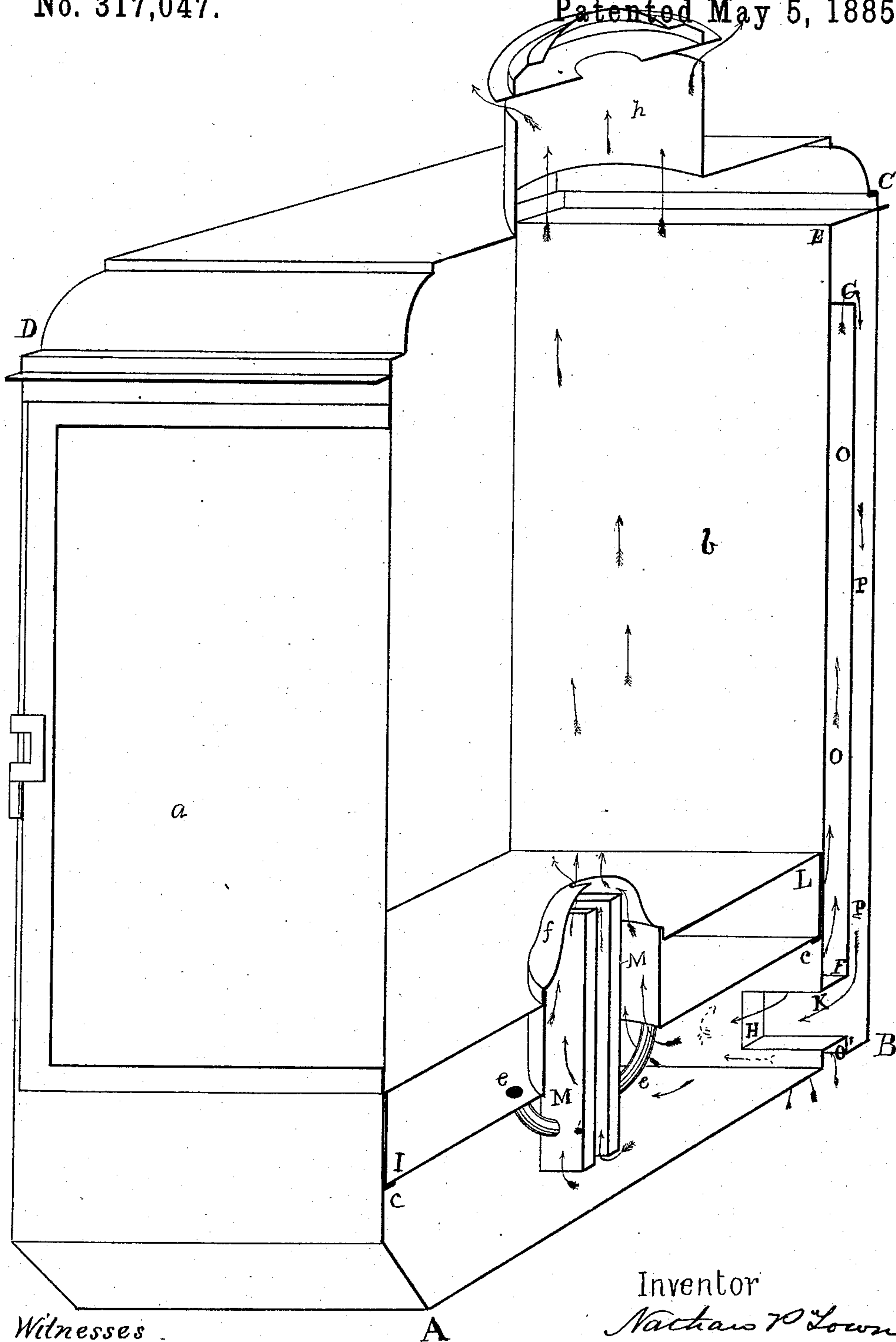
(No Model.)

N. P. TOWNE.

LANTERN.

No. 317,047.

Patented May 5, 1885.



Witnesses  
Alfred O. Blaisdell  
Wm B. Kisby

Inventor  
Nathan P. Towne

# UNITED STATES PATENT OFFICE.

NATHAN P. TOWNE, OF BROOKLYN, NEW YORK.

## LANTERN.

SPECIFICATION forming part of Letters Patent No. 317,047, dated May 5, 1885.

Application filed December 22, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN P. TOWNE, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Lanterns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to lanterns; and it consists in the details of construction and combination of parts hereinafter pointed out and claimed.

The object of the invention is to produce a lantern in which the air which supports combustion shall be heated while passing upward in a flue or pipe in proximity to the heated air in the body of the lantern, and subsequently passed to the flame, in contradistinction to such as heat the air while drawing, driving, or forcing it downward against the natural tendency of heated air to rise. This object I accomplish by such mechanism as is hereinafter described; but it must be understood that the construction may be varied within reasonable limits, the main idea being that of heating the air during its upward movement by the heat generated in the lantern.

In the drawing forming part of this specification is shown a central vertical section of a ship's "standing light" with my invention applied thereto.

A B C D indicate the outline of the lantern proper, the door *a* being in front, as usual. The back plate, *b*, of the lantern has a flue, O, leading upward, the walls of the flue in contact with the heated air in the lantern. This flue opens to the external air at or near the bottom of the lantern—as, for instance, at *o'*—and the flue presents a broad surface to the lantern-plate *b*. The flue O connects at G with a downward flue, P, which leads into the body of the lantern at H K below the level of the top of the burner. The lamp-body I L is supported a little above the bottom of the lantern on brackets or ledges *c c*, and has a central passage around the wick-tubes M M, which tubes are supplied with oil from the lamp-body by tubes *e e*. A single apertured deflecting-cone, *f*, surmounts the wick-tubes. The tubes may be braced, if necessary; but the oil-tubes will usually furnish a sufficient

support. As will be seen, the wick-tubes are practically surrounded by an air-space.

While I have described the upward flue for the air-feed as forming part of the back plate of the lantern, it must be understood that this is not essential. The flue may be in any part of the lantern. The external air which enters the flue O is heated by contact with plate *b*, and is driven upward. Passing over the top of the diaphragm, the heated current is impelled down the flue P and into the space under the lamp. The heated air then passes upward around the wick-tubes, being concentrated by the cone in the vicinity of the flame at the top of the burners. The escaping air passes out at the chimney *h*.

The general direction of the air-currents is indicated by the arrows on the drawing.

It is common in lanterns to take in external air near the top of the lantern, and the air thus taken in is heated while passing downward. In lanterns of this kind the instant the door is opened cold air rushes in, cooling down the lamp, and as the flue is still heated the draft is instantly reversed, and air is drawn down through or past the burner and out at the flue. This difficulty is overcome in my construction, which, being more in accord with natural laws, is more effective at all times.

I claim—

1. A lantern having an air-chamber beneath the burner and connected therewith, an air-flue communicating with the external air near the bottom, extending upward in contact with the contained air in the lantern-body, then leading downward and opening into said air-chamber, substantially as described.

2. In combination with a lantern-body having a side plate, (as *b*,) a flue having external orifice near the bottom of the lantern, a diaphragm dividing said flue into upward and downward passages, the upward passage being next the side plate, and an opening leading into the lantern-body below the plane of the burners, substantially as described.

3. In combination with a lantern-body, a contained lamp having central aperture and burner therein, and a flue leading upward in contact with the contained air in the lantern, then downward, and communicating with said



central aperture below the burner, substantially as described.

4. In combination with a lantern-body, a contained oil-reservoir having a central aperture and a plurality of flat wick-tubes therein, surmounted by a single cone, and a flue leading first upward in contact with the contained air in the lantern-body, and then downward and communicating with the aperture in the

reservoir from below, all substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

NATHAN P. TOWNE.

Witnesses:

ALFRED O. BLAISDELL,  
U. M. E. KISBY.