E. F. CASH.

Lantern.

No. 207,104. Patented Aug. 20, 1878.

Fig. 1.

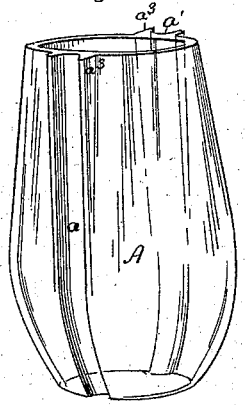


Fig. 2.

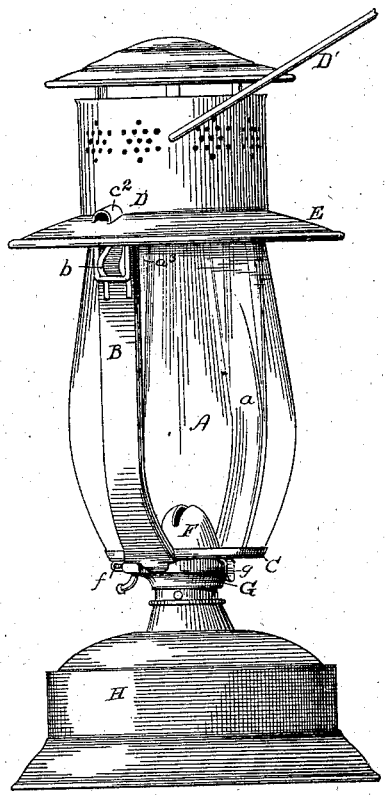
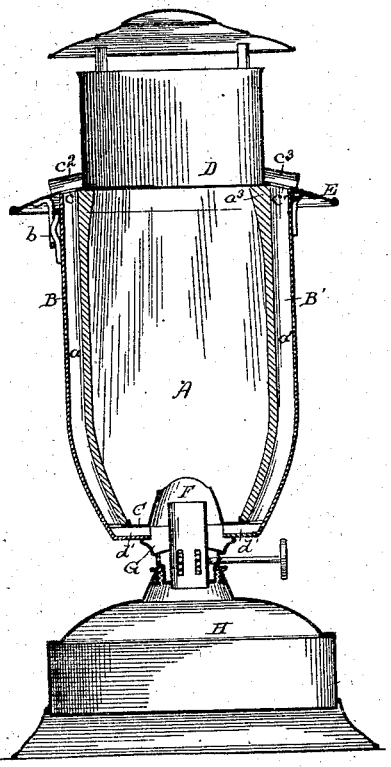


Fig. 3



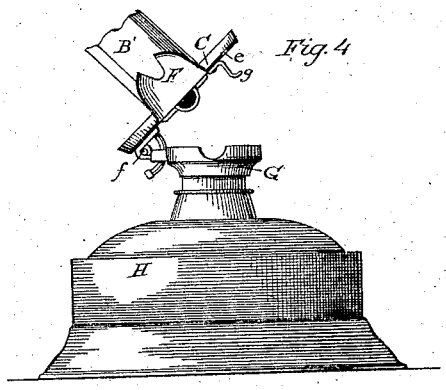


Fig. 4

Witnesses:

C. Clarence Poole.

R. F. Dyer

Inventor:

Evan F. Cash

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UNITED STATES PATENT OFFICE.

EVAN F. CASH, OF BELLAIRE, OHIO, ASSIGNOR TO HIMSELF, ALFRED L. BARON, AND DAVID RANKIN, OF SAME PLACE.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **207,104**, dated August 20, 1878; application filed June 24, 1878.

To all whom it may concern:

Be it known that I, EVAN F. CASH, of Bellaire, in the county of Belmont and State of Ohio, have invented a new and useful Improvement in Lanterns; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is to produce a single-globe kerosene-lantern which will have means for effectively counterbalancing the air-currents, and will be simple and cheap in construction; and my invention therein consists, mainly, in forming the passage or passages which feed air to the flame on the outside of the globe, and between the same and one or more vertical plates of proper shape placed against the globe; in making the globe with one or more grooves on its exterior, which are inclosed by the vertical plate or plates; in joining the plates which form the air-passages to the base and the top, the plates supporting the top and doing away with the necessity of providing the lantern with a guard; in the manner of connecting the peculiarly-formed air-passages to the interior of the cone; and, further, in the various combinations of the several parts of the lantern, all as fully hereinafter explained.

In the drawings, Figure 1 is a perspective view of the globe; Fig. 2, an elevation of the lantern with the globe mounted therein; Fig. 3, a sectional view of the same on the line of the air-passages; and Fig. 4, a view of the bottom of the lantern, showing the hinged connection of the supporting-plate with the burner.

Like letters denote corresponding parts.

The globe A may be made in the ordinary curved or bulged form, or of any convenient shape. It has one or more exterior grooves, a a^1, formed in it, extending throughout the length of the globe. Two grooves are preferably used, and are situated on opposite sides of the globe. These grooves make air-passages, as will be presently described. They can be blown in the globe, and consequently the globes can be made much cheaper than where tubes are pressed in them for the same purpose.

The grooves a a^1, of any proper form in cross-section, may be wholly in the walls of the globe, projecting into the same, and not extending outwardly beyond the ordinary surface of the globe; or these grooves can be made in ridges of glass wholly on the outside of the globes; or the grooves at their lower ends can be made in the walls of the globe, and at their upper ends above the line of the greatest diameter, in wedge-shaped projecting portions a^3 of the globe, which is the construction preferred by me, since it allows the globe to be removed from the lantern and from contact with the plates which cover the grooves by sliding it upwardly.

The grooves a a^1 are covered, when mounted in the lantern, by straps or narrow plates B B′, which are rigidly connected at their lower ends to the sides of the supporting-plate C, upon which the globe rests. These plates extend upwardly close against the grooves in the globe, covering the same, and support at their upper ends the top D of the lantern, to which the bail or handle D′ is attached.

The top D is hinged to one of the plates B B′, and locks with the upper end of the other plate by means of a spring-catch, b. The plates B B′ are of sufficient width to cover the grooves in the globe, and in cross-section may be flat, with inwardly-turned edges, or may be in the form of half-tubes. Openings c c^1 are made through the deflector E, leading, when the top is secured, down into the air-passages formed by the grooved globe and the plates. These openings supply the air to feed the flame, and may be covered by hoods c^2 c^3, to prevent the disturbance of the air circulation by the blowing of the wind through the openings.

The air-holes c c^1 through the deflector can be dispensed with by shortening the air-passages at the top one-quarter ($\frac{1}{4}$) of an inch or more and allowing the air to enter them below the deflector. The cone F is secured centrally to the supporting-plate C, and horizontal air-tubes d d' are secured to the under side of the supporting-plate, connecting the air-passages at the lower ends of the plates B B′ with the interior of the cone.

It is evident that the air-passages down the side of the globe may be connected with the interior of the cone by tubes above the sup-

porting-plate, or in any other convenient manner. The supporting-plate C, outside of the cone, is perforated, as shown at *e*, to admit air to the flame around the cone. The perforations being wholly outside of the case G of the burner, the air-currents leading to the interior of the cone are kept separate from those which enter through the perforations *e*.

The supporting-plate C is hinged at one side to the case G by means of a hinge, *f*, so that the upper portion of the lantern can be turned back to trim and light the wick. A spring-catch, *g*, holds the supporting-plate down upon the burner. The oil-reservoir H, which forms the base upon which the lantern sits, is attached to the burner preferably by screw-threads, and the oil-reservoir is filled by removing the burner; or it may be provided with a screw-plug for that purpose.

When the globe is in the lantern, the wick lighted, and the supporting-plate locked to the burner, an upward draft will be created by the flame in the globe. To supply this draft and feed the flame, air will be drawn through the openings *c c*^{1} down through the air-passages on the sides of the globe, and then through the tubes *d d'*, into the interior of the cone. At the same time air will be drawn through the perforations *e* on the outside of the cone, the said currents balancing each other.

The lantern, as thus constructed, can be moved violently or carried where the wind is blowing without being extinguished. It is also very simple, and is cheap to manufacture.

It will be readily understood that the grooves in the globe could be dispensed with, and the air-passages formed by making the plates B, B' in cross-section of semicircular or other bulging form and placing them directly against the sides of the globe. With this construction, as where the grooves are provided, the globe constitutes a portion of the air-passages.

What I claim as my invention is—

1. In a single-globe lantern, the passage or passages for feeding air to the flame, situated between the outside of the globe, and a vertical plate or plates placed against the same, substantially as and for the purpose set forth.

2. The lantern-globe A, having one or more exterior grooves, *a a*^{1}, which are constructed to form air-passages when the globe is mounted in the lantern, substantially as and for the purpose set forth.

3. In a lantern, the combination of the grooved globe with vertical plates covering such grooves, substantially as and for the purpose set forth.

4. In a lantern, the plates B B', forming part of the air-passage and supporting the top D, substantially as described and shown.

5. In a lantern, the combination of the grooved globe A, supporting-plate C, plates B B', and top D, substantially as and for the purpose set forth.

6. In a lantern, the combination, with the plates B B', forming part of the air-passages, of the top D, hinged to one plate and secured by a spring-catch to the other, substantially as described and shown.

7. In a lantern, the combination of the grooved globe A and plates B B', supported on the plate C, carrying the cone and hinged to the shell of the burner, substantially as described and shown.

This specification signed and witnessed this 12th day of June, 1878.

EVAN F. CASH.

Witnesses:

D. W. COOPER,

S. T. SATTERTHWAITE.