

S. B. H. VANCE.

Coal Oil Lantern for Railroad Cars.

No. 37,553.

Patented Jan'y 27, 1863.

Fig. 1,

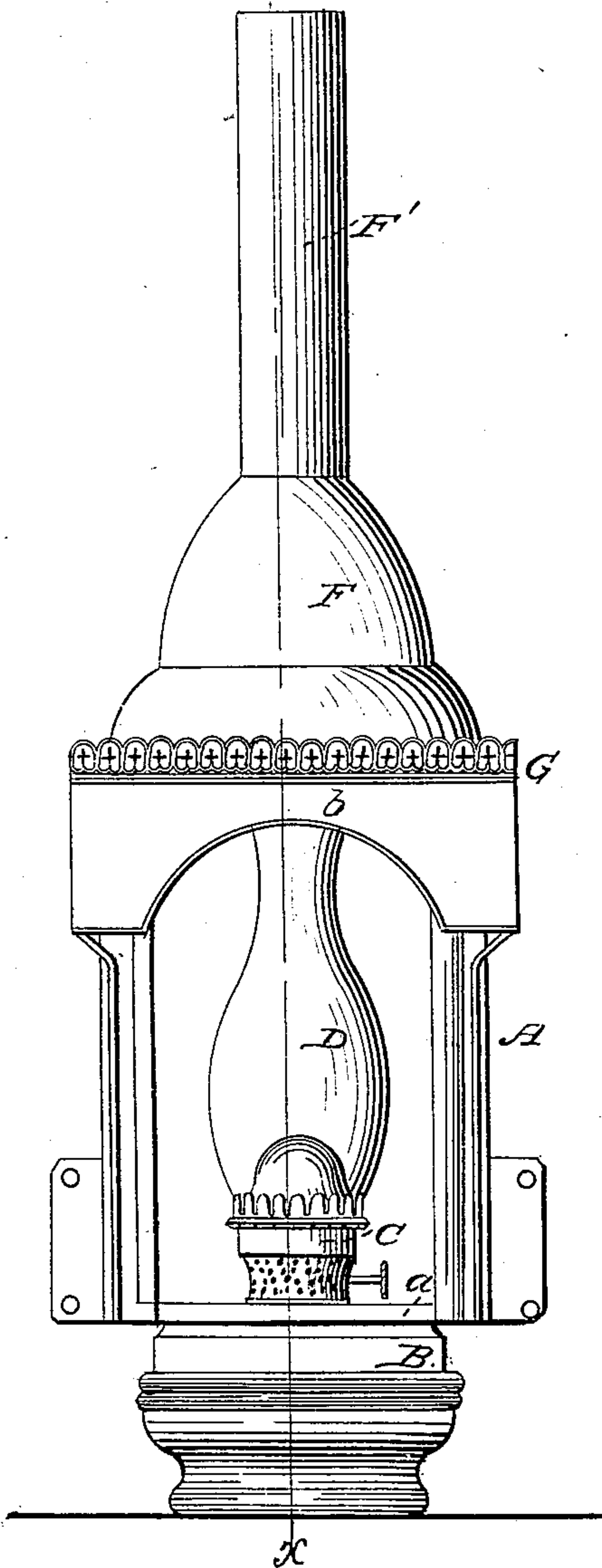
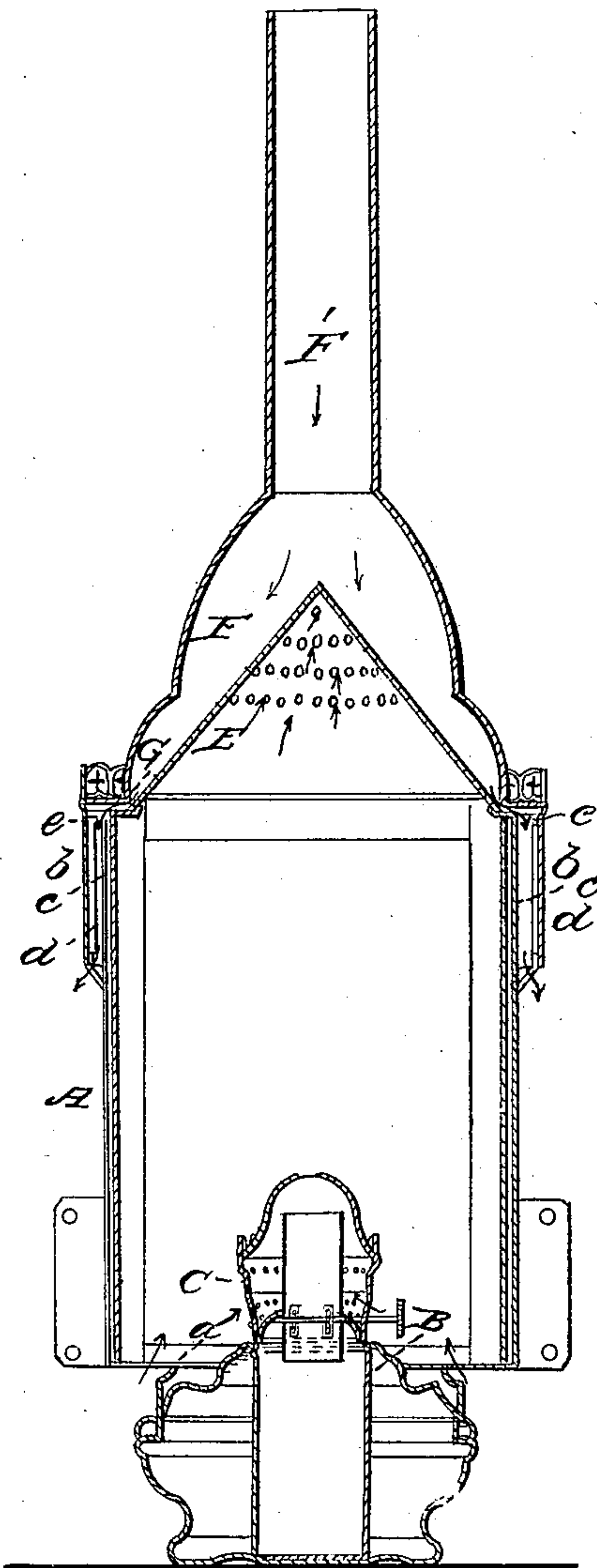


Fig. 2,



Witnesses:

Daniel Roberts  
W. S. Fiskridge

Inventor:

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# UNITED STATES PATENT OFFICE.

SAMUEL B. H. VANCE, OF NEW YORK, N. Y., ASSIGNOR TO MITCHELL,  
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## IMPROVEMENT IN COAL-OIL LANTERNS FOR RAILROAD-CARS, &c.

Specification forming part of Letters Patent No. 37,553, dated January 27, 1863.

*To all whom it may concern:*

Be it known that I, SAMUEL B. H. VANCE, of the city, county, and State of New York, have invented a new and Improved Lantern or Lamp for Burning Coal-Oil, designed for Railroad-Cars, Steamboats, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of my invention; Fig. 2, a vertical section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain a coal-oil lantern or lamp for railroad-cars, steamboats, and similar places where the flame is exposed to drafts of air.

Coal-oil lanterns or lamps have not hitherto been successfully used for such places, owing to the sensitiveness of the flame and the liability of the same to smoke on account of downward or back drafts and an unequal supply of air. To obviate this difficulty, I attach a perforated cone to the upper part of the lantern, and inclose said cone within a chamber which is provided with a draft-tube at its upper end, and is made to communicate at its lower end with the external air, the parts being so arranged as to allow a free escape of all downward currents of air without the same passing within the lantern, and at the same time admitting of a free upward draft or current of air through the lantern to supply the flame with a requisite amount of air to insure proper combustion.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a lantern, which may be of quadrilateral or other proper form, provided with glass sides and a metal frame.

B represents a lamp, which is fitted in the bottom of the lantern in any suitable way to admit of being readily removed from and attached to the lantern. This lamp is provided with a coal-oil burner, C, having the usual glass chimney, D, attached to it. The bottom plate, *a*, of the lantern is perforated to admit of air passing into the lantern to supply the flame.

On the upper part of the lantern there is attached a cone, E, which is perforated from its apex downward a suitable distance. (See Fig. 2.) This perforated cone forms the top proper of the lantern, and it is inclosed within a sheet-metal chamber, F, which has a chimney, F', at its upper end.

The chamber F may be of bell shape, and is attached to a base, G, which has a pendent plate, *b*, at each side of it, said plates extending down a short distance at the sides of the lantern, and at such a distance from them as to admit of spaces *c* between the plates *b* and the sides of the lantern, said spaces affording a communication between the chamber F and the external air, as shown clearly in Fig. 2.

The chamber F is secured to the upper part of the lantern by having sockets or tubes *d* attached to the inner sides of the plate *b*—one at or near each corner—said sockets or tubes fitting on vertical rods *e*, attached to the sides of the lantern. By this arrangement the chamber F may be readily fitted on and removed from the lantern.

In case of a downward or back draft, the descending air will not pass through the perforated cone E, but will be deflected by it down through the spaces *c*, as indicated by the red arrows, while the draft of air through the lantern which supplies the flame with oxygen to support combustion will pass up through the perforated cone, as indicated by the black arrows, and follow the downward draft through the spaces *c*, the draft from the lantern passing up through the chimney F' when the downward draft ceases.

Thus by this simple arrangement a coal-oil lantern is adapted for use in the places specified. The cost of construction is not materially augmented by the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The perforated cone E, in combination with the chamber F and draft-chimney F', applied to the lantern A, as and for the purpose herein set forth.

SAML. B. H. VANCE.

Witnesses:

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