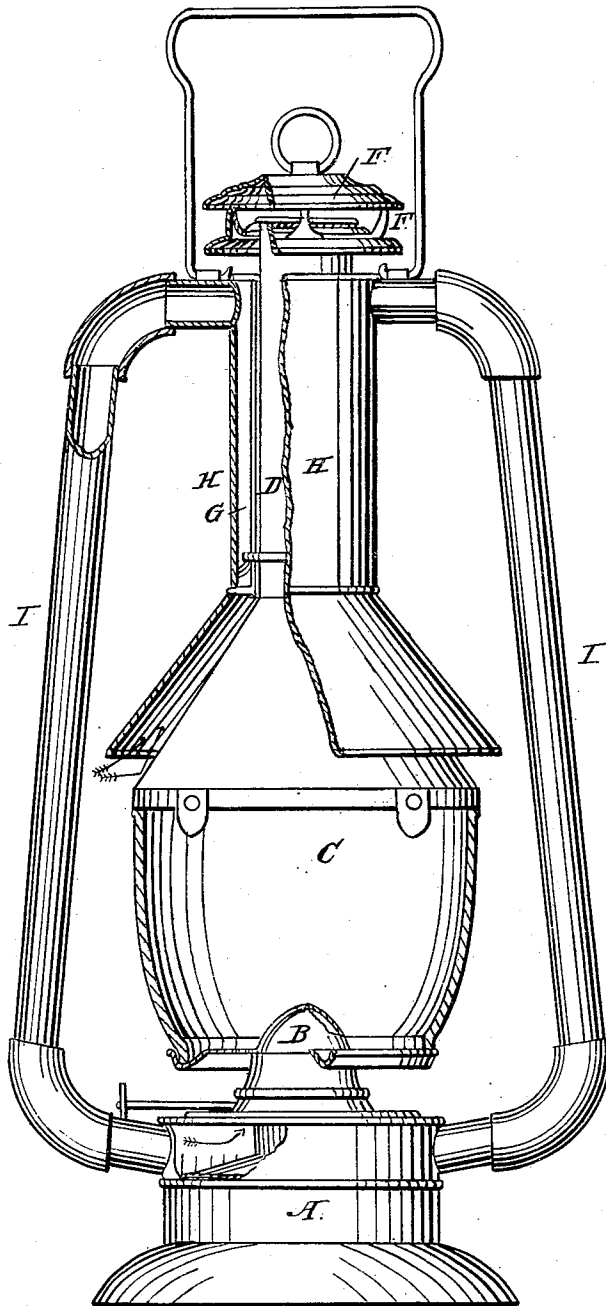


J. H. IRWIN.

Lantern.

No. 105,083.

Patented July 5, 1870.



witnesses
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UNITED STATES PATENT OFFICE

JOHN H. IRWIN, OF NEW YORK, N. Y.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **105,083**, dated July 5, 1870.

To all whom it may concern:

Be it known that I, JOHN H. IRWIN, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Lamps and Lanterns; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which the figure represents my invention in sectional elevation.

This invention relates to an improvement in illuminating apparatus heretofore invented and patented by me, wherein the atmospheric air to support combustion is conducted by feeding-tubes from a point near the outlet of the chimney to the air-space beneath the burner-cone, and the effect of external atmospheric disturbances upon the flame is thereby neutralized, in the manner heretofore explained in the letters issued to me; and it consists in the arrangement of an annular chamber surrounding the chimney, and connecting with the air-feeding tubes, through which a current of air is induced by means of heat, and it is more particularly designed for use in a comparatively calm atmosphere, as for illumination indoors.

That others may fully understand the construction and effect of my invention, I will particularly describe it.

A is the oil-pot, and B is the burner-cone. Above the oil-pot, and communicating with the interior of the cone B, is an air chamber or space, through which the air passes to the burner-flame. Above the burner, and surrounding it, is a globe or chimney, C, the lower part of which is made of some transparent or translucent material, as is usual, and the upper continuation of which may be a metallic flue, D, which is surmounted by a cap-plate, E, and its orifice surrounded by a deflecting plate or flange, F, the purpose of which is to impart a slightly-upward deflection to a current of air moving across the open top of the chimney or flue D. An annular chamber, G, in form and length corresponding to the chim-

ney D, is formed by the jacket H. The chamber G is open at the bottom, but closed at its top, and its bottom portion is made flaring outward, not only to conform to the shape of the chimney, but to present a more extended opening to admit an inflowing current of air. The feeding-tubes I I communicate with the upper end of the chamber G, and connect it with the air-space beneath the burner-cone B, so that all the air which passes upward through the flame-opening in said cone enters through the tubes I I and chamber G. The chimney D is heated by the hot products of combustion ascending from the burner-flame, and a large portion of said heat is imparted to the air within the chamber G. The air within said chamber, becoming thereby rarefied, ascends and flows off laterally through the tubes I I, where it loses a portion of its heat, and is conducted to the air-chamber beneath the cone B.

It will be readily perceived that the currents of air moving through the tubes or feeders I when the lamp is at rest are impelled by two independent forces—first, by the ascending current of hot products of combustion within the chimney C D, and, second, by the ascensive force of a column of air rarefied within the chamber G. Thus, while the ascending hot air within the chimney D would draw a current of cold air through the tubes I, the rarefied air within the chamber G would also force a similar current through said tubes, and the supply of air to the flame is much more abundant than would be effected by either of these forces alone.

Having described my invention, what I claim as new is—

A heating-chamber, G, formed by the chimney D and jacket H, or its equivalent, in combination with the feeding tube or tubes I I, to conduct fresh air to the burner B, substantially as and for the purpose set forth.

J. H. IRWIN.

Witnesses:

THOS. RICART,
FRED. DIETZ.