2 Sheets—Sheet 1.

H. L. IVES.

Lamps.

No. 196,581 Patented Oct. 30, 1877.

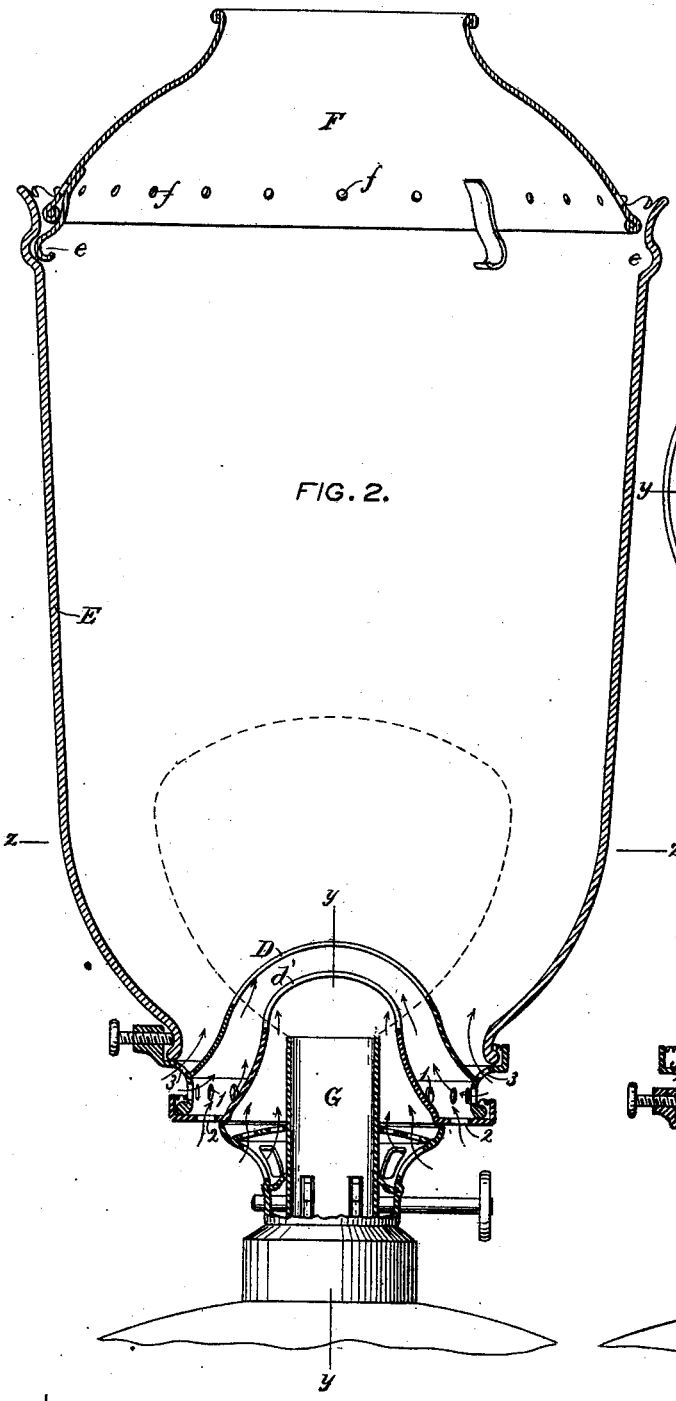


FIG. 2.

FIG. 1.

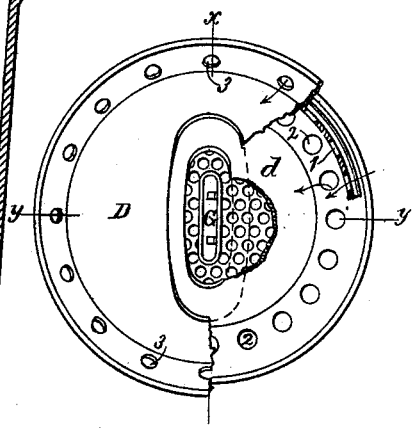
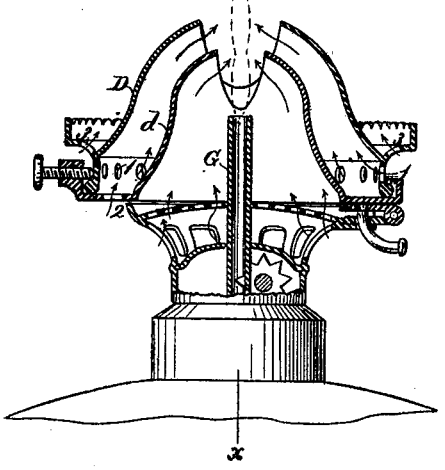


FIG. 3.



WITNESSES.

E. W. Palmer

J. T. Goodfellow

INVENTOR

Hiram L. Ives.

2 Sheets—Sheet 2.

H. L. IVES.
Lamps.

No. 196,581 Patented Oct. 30, 1877.

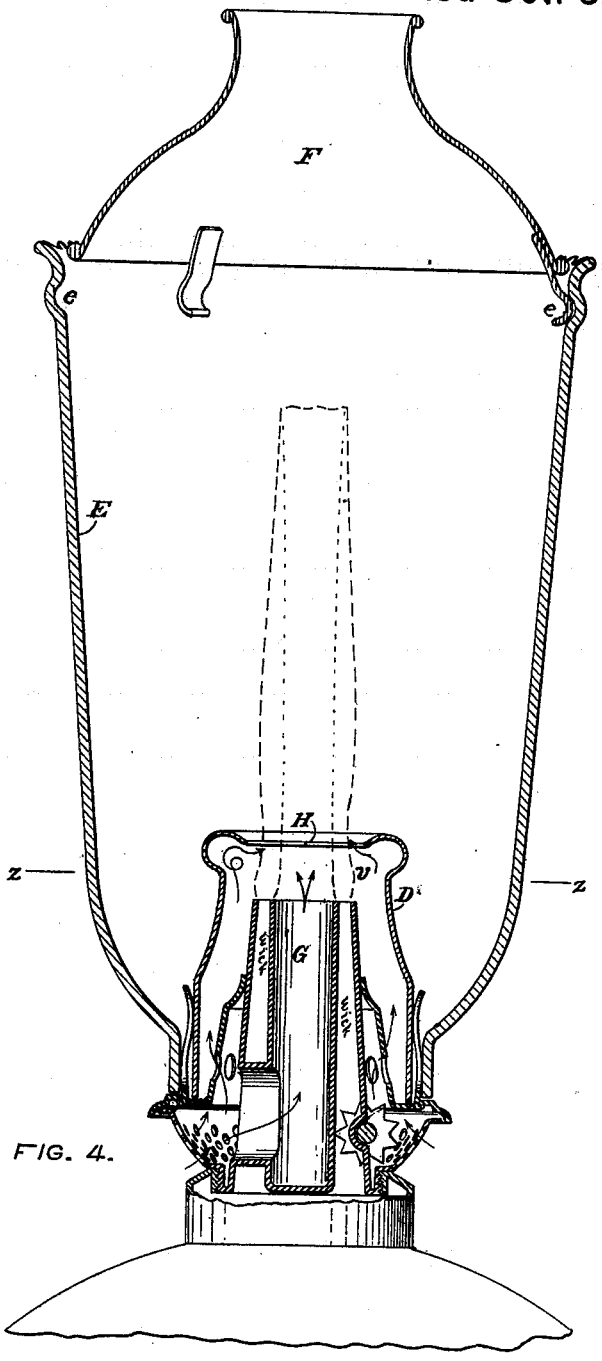


FIG. 4.

WITNESSES
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UNITED STATES PATENT OFFICE.

HIRAM L. IVES, OF TROY, NEW YORK.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **196,581**, dated October 30, 1877; application filed July 24, 1877.

To all whom it may concern:

Be it known that I, HIRAM L. IVES, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Lamp Burners and Chimneys; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is to furnish a more abundant supply of air to the burner of the lamp, and to more intimately commingle the same with the burning gases, and thereby produce a greater illuminating power; and the nature of my invention consists in a bell-shaped or flaring chimney with interior recess at the top and a regulating draft-cap, in combination with a burner and lamp, and also in combining, with an Argand burner or round wick, a deflector, a bell-shaped recessed chimney, and cap, all as hereinafter more fully set forth.

In the annexed drawings, which fully illustrate my invention, and to which reference is made, Figure 1 is a plan view of a burner embodying a part of my invention, portions being broken away. Fig. 2 is a vertical sectional view of my invention on the line *x x*, Figs. 1 and 3. Fig. 3 is a vertical section on the line *y y*, Figs. 1 and 2. Fig. 4 is a central vertical section, showing my invention as applied to an Argand burner.

The lamp-burner is constructed, in the usual manner, with wick-tube G and cone *d* around and over the same, and a suitable disk or support for the chimney E. For the purpose of increasing the draft and promoting combustion, and at the same time to prevent the danger of breakage of glass when used, this chimney is made sufficiently broad or substantially bell-shaped and flaring outward and upward from the line *z z* in Figs. 2 and 4.

Near the upper end of the chimney, on the inside, is formed a seat or recess, *e*, within which, by suitable springs, is closely adjusted the cap or dome F. This cap has a central opening, amply large for the escape of hot air, and may also have a series of small apertures, *f*, around its outer edge.

In operation my improved chimney and cap tend to increase the draft, carrying off the escaping hot currents sufficiently fast to give a steady and uniformly intense flame with no apparent smoke or waste of carbon.

The cap F may be made of metal, and used also as a reflector, or of porcelain, mica, or other suitable material.

Over the cone *d* of the burner is placed a deflecting-shell, D, made of metal, glass, or other translucent material. This deflector is sufficiently large, and extends far enough around and over the cone of the burner, so as to form a chamber through which the air in full volume impinges upon the flame, and produces complete combustion of the escaping burning gases. The burner is, of course, provided with suitable openings to admit the air, allowing it to pass both within and outside of the shell to the point of combustion.

The main object to be accomplished by my invention is to accumulate and employ the greatest amount of air that can be conveyed within a limited space to be brought in direct contact with all parts or atoms of the escaping carbon, so that there may be no waste of illuminating power.

With an Argand burner the deflector D is preferably made in the form shown in Fig. 4, its upper end below the top of the wick-tube being gradually contracted to such a height above the wick-tube as to make an ample chamber, *v*, around and above said tube; and around the upper periphery is formed a bulbous opening, H, by turning forward and downward the upper edge of the deflector.

I thus form a directing or regulating chamber, *v*, through and around which the air, in constant and impinging currents, acts upon the outer edge of the circular flame, while the currents pass within the wick-tube in the ordinary manner, and as a consequence all the currents of air are efficiently utilized, and, in connection with the chimney and regulating draft-dome, perfect combustion ensues, and a constant and high illuminating power is kept

up, while no disagreeable odors from smoke or imperfect combustion follow.

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

1. A bell-shaped or flaring chimney, E, with recessed top *e* and regulating draft-cap F, in combination with a burner and lamp, as set forth.

2. In combination with an Argand-burner or round wick, the deflector D, constructed substantially as described, the bell-shaped recessed chimney E, and cap to the same, for the purposes set forth.

HIRAM L. IVES.

Witnesses:
J. W. PALMER,
J. T. GOODFELLOW.