

J. A. GREENFIELD & C. H. FRY, Jr.  
Lamp-Chimney.

No. 219,716.

Patented Sept. 16, 1879.

Fig. 1.

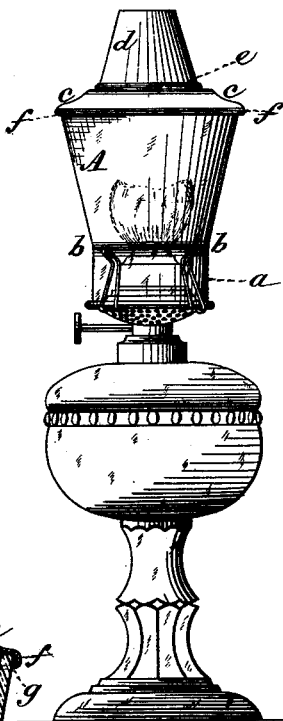


Fig. 2.

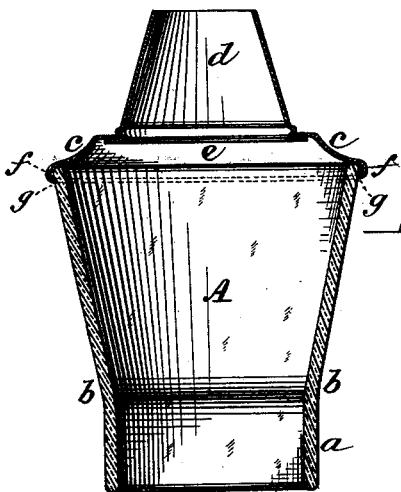
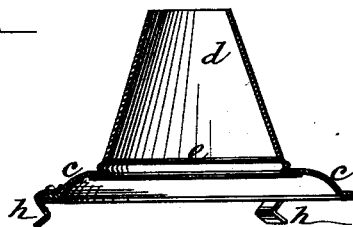


Fig. 3.



WITNESSES

Jacob Hutchinson.  
Floyd Harris

INVENTORS

John A. Greenfield.  
Charles H. Fry, Jr.  
by Johnson & Johnson

# UNITED STATES PATENT OFFICE.

JOHN A. GREENFIELD AND CHARLES H. FRY, JR., OF BELLAIRE, OHIO.

## IMPROVEMENT IN LAMP-CHIMNEYS.

Specification forming part of Letters Patent No. **219,716**, dated September 16, 1879; application filed March 12, 1879.

### *To all whom it may concern:*

Be it known that we, JOHN A. GREENFIELD and CHARLES H. FRY, Jr., of Bellaire, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Lamp-Chimneys, of which the following is a specification.

The base portion of our improved lamp-chimney has vertical sides from its seat upon the lamp-plate as far as the top of the burner or inception of the flame, and from this point the sides flare to the top in straight lines, thereby avoiding all sharp bends or curves in the chimney, and diminishing its liability to break from the effects of the heat and cold, while increasing the distance of the sides of the chimney from the flame from its point of inception. This construction, while it prevents the impingement of the flame upon the sides of the chimney, gives a symmetrical form, and, in connection with a metallic cap having a base-rim with an upwardly-tapering flue termination and a narrow draft-throat, gives an increased surface of white light in the flame, with a direct center draft. The chimney flaring outward and the flue of the cap flaring downward to its base gives a direct central draft, with the effect of rounding the edges of the flame without elongating it.

The base of the cap rests upon the chimney, and is held by a circumferential under and inward edge bend fitting against the outer side of the chimney; or it may be held by spring-hooks.

Referring to the drawings, Figure 1 represents a lamp with our improved chimney; Fig. 2, a vertical section through the chimney and its metallic cap, and Fig. 3 shows a cap with spring-hooks.

The glass-chimney A has its base rising vertically to a point, *b*, which is on a line with the commencement of the flame, and from this point its sides flare outwardly in straight lines to the top, so that it commences to widen from the inception of the flame, and, having no sharp bends or curves, is thereby rendered less liable to break from expansion and contraction. With a glass chimney thus formed I combine a metallic cap having a curved or substan-

tially flat base, *c*, and an upwardly-tapering flue termination, *d*, forming a draft-throat, *e*, at the junction of the base and flue part for the escape of the smoke and gas in a direct line from the flame, thereby causing the edges of the flame to be rounded and increasing its surface of white light.

The effect of the direct central draft caused by the form of the cap is to prevent the flame spreading by rounding the edges of the flame and lessening the darting blue portion without making it longer, but increasing its brightness.

The cap rests upon the chimney, and is held in place by having its edge turned under and inward, with an edge bearing upon the outer sides of the chimney, fitted to allow of the removal of the cap for cleaning. The base of the cap, however, may have spring-holds *i*, adapted to bear upon the chimney to hold said cap thereon. This form of cap causes the draft to be more central, keeps the flame from the sides of the chimney, and we have found, in practice, that it gives less smoke and a more steady flame.

We are aware that metal caps have been combined with lamp-chimneys in various ways, and that glass chimneys have been made wider at the top than at the bottom, with curved base and flaring straight body; but our improvement embraces the specific construction shown, and which we find gives the best results in use.

We claim—

1. A lamp-chimney having a vertical cylindrical base, *a*, from which the part A flares outwardly in straight lines, joining the base at a point, *b*, coincident, or nearly so, with the top of the burner, substantially as and for the purpose described.

2. A lamp-chimney having a vertical cylindrical base, *a*, from which the part A flares outwardly in straight lines, joining the base at a point, *b*, on a line, or nearly so, with the top of the burner, in combination with a metallic cap having an upwardly-tapering flue termination, *d*, joining the base of said cap, with a direct-draft throat, *e*, as and for the purpose described.

3. A metal cap for lamp-chimneys having an upwardly-tapering flue termination, *d*, joining the base of said cap with a direct-draft throat, *e*, and having the circumferential under and inward edge bend *f g*, adapted to fit against the outer side of the glass chimney, as specified.

In testimony whereof we have hereunto set our hands in the presence of two witnesses.

JOHN A. GREENFIELD.

CHARLES H. FRY, JR.

Witnesses:

G. C. MCCOY,

W. CLOUSE.