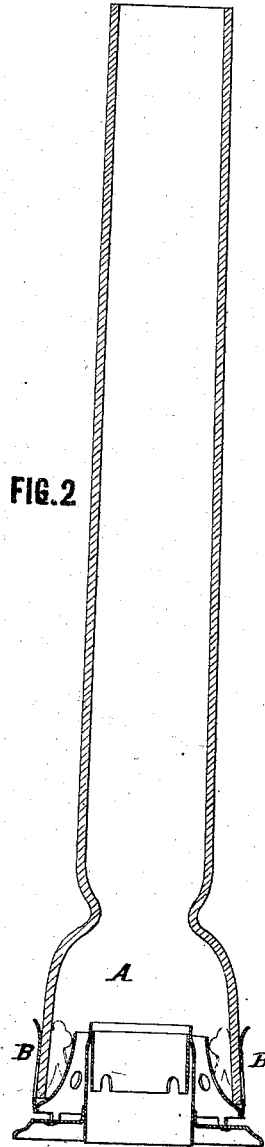
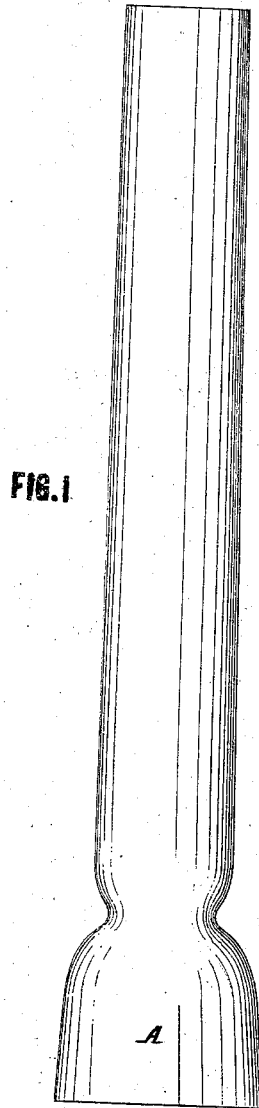


R. S. MERRILL.
Lamp Chimney.

No. 111,073.

Patented Jan. 17, 1871.



WITNESSES

In Sight
W. B. Nottingham

Rufus S. Merrill
by his attorney
A. Pollok

UNITED STATES PATENT OFFICE.

RUFUS S. MERRILL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF,
WILLIAM B. MERRILL, AND JOSHUA MERRILL, OF SAME PLACE.

IMPROVEMENT IN LAMP-CHIMNEYS.

Specification forming part of Letters Patent No. 111,073, dated January 17, 1871.

To all whom it may concern:

Be it known that I, RUFUS S. MERRILL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Lamp-Chimneys, of which the following is a specification.

My invention relates to "slip-chimneys," so called, for Argand burners—that is to say, chimneys having a contracted neck, and fitting at their lower end within external springs attached to the burner. That portion of the chimney slipped within or between the springs, which, for convenience' sake, I will term the "base" of the chimney, has heretofore been made cylindrical, or of the same diameter throughout its length. The use of a chimney with its base thus formed is attended with considerable disadvantage, arising, mainly, from the fact that the springs, when the lamp is jostled or shaken about—in a railway-car, for instance—will not prevent the chimney from rising or being gradually thrown up away from the burner until it finally slips out from between the springs and falls from the lamp. This arises from the fact that the base is cylindrical, and the springs therefore exercise the same pressure upon its straight or perpendicular sides, whether it be inserted for a greater or less distance between the springs; and consequently when the chimney has been raised from the burner by being tilted or jostled, the springs not only have no power to compel its return to its first position, but, indeed, actually prevent it.

My object has been to overcome the difficulty referred to, and this I have accomplished by giving the base of the chimney a conical form, the greatest diameter being at the bottom, and by combining with it external springs, between which the conical base is slipped. In this manner two distinct effects are produced, viz:

First. Suppose the chimney, through any accident or mischance, to be raised from the base of the burner, the springs will press upon the chimney with an increased force proportionate to the distance the chimney is lifted from the base of the burner. This is due to the fact that when the chimney is in its lowest position the springs grasp the smallest part of the conical base, and consequently

in proportion as the chimney is raised the diameter of that portion of it with which the springs are in contact will be increased.

Second. The chimney tends continually, in case it is raised from the base of the burner, to return to its lowest position, this being due to the pressure of the springs upon the inclined or conical surface of the chimney-base, which at all times has a tendency to crowd the chimney down into place. The combined result is that the chimney is held most securely in place, and its tendency to separate from the burner and to slip up and out from between the springs is removed.

The accompanying drawings represent clearly the manner in which my invention is carried into effect.

Figure 1 is an elevation of the chimney, the conical base being represented at A. Fig. 2 represents a vertical central section of the chimney, with the base inserted between the chimney-holding springs B of an Argand burner.

The base may be more or less inclined or conical, as desired, and the external springs between which it is slipped may be of any suitable length. The springs press against the conical base with the greatest force at their upper ends, which are in contact with the most contracted portion of the conical base that their length adapts them to receive.

The results of this formation of the chimney, and of the combination, with the external holding-springs, of the chimney thus formed, have been above stated and need not here be repeated.

I am aware that lamp-chimneys have been made with flaring lower ends; and this I do not broadly claim; but I am not aware that a chimney for an Argand burner, having a contracted neck, a cylindrical body above the wick, and a conical or tapering base, has ever before been made. The lower part of the chimney below the contracted neck acts as the deflector, and it is indispensable that the contracted opening should occupy a fixed and invariable position at a certain height above the wick in order to produce a good flame. As the sides of the deflector portion of the chimney have hitherto been made perpendicular instead of inclined, it has not been possible

to assure the chimney in its proper position, and this has resulted in the frequent imperfect combustion of the oil and production of an inferior flame, and the imperfect combustion gives rise to another inconvenience, as it is the occasion of the discoloration of the chimney by smoke.

These disadvantages are peculiar to the kind of chimney to which my invention relates, and to my knowledge they have never before been remedied or prevented.

What I claim, therefore, and desire to secure by Letters Patent, is—

A slip-chimney for Argand burners, made with a contracted neck, a cylindrical body above the neck, and a conical or tapering base or deflector below the contracted neck, as and for the purposes shown and set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

RUFUS S. MERRILL.

Witnesses:

M. BAILEY,
EDM. F. BROWN.