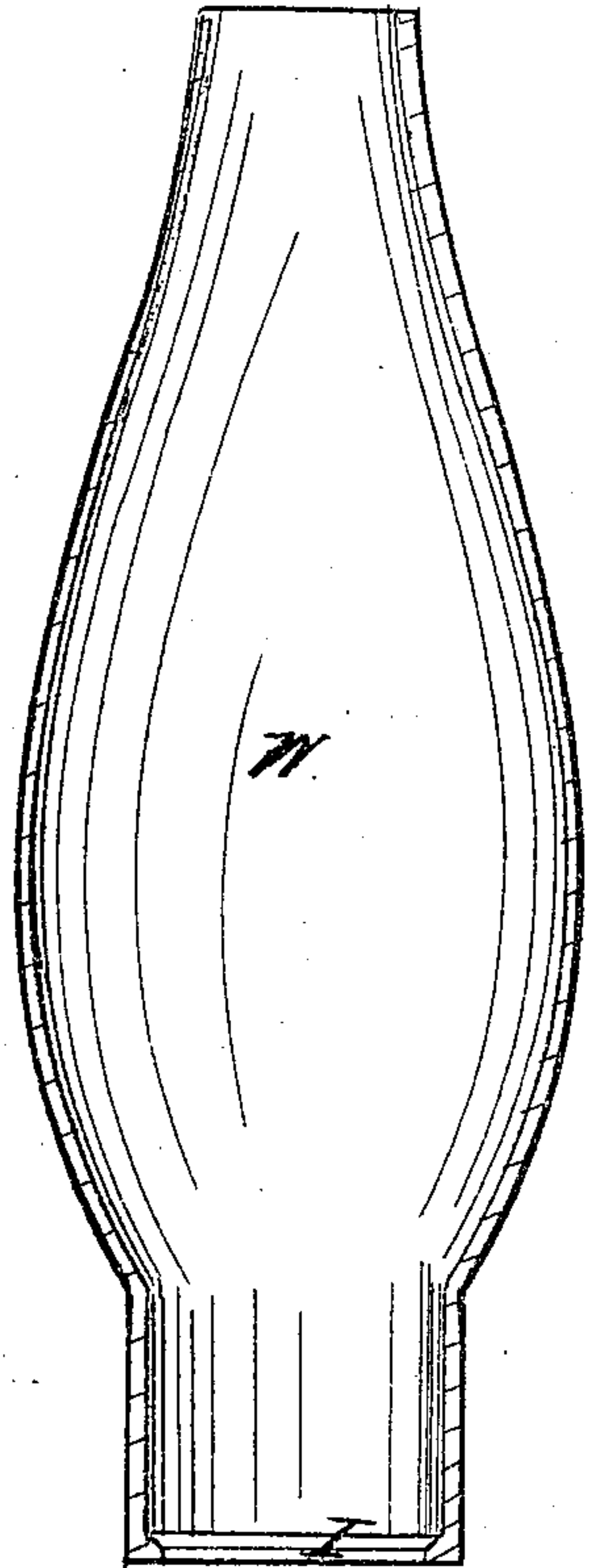


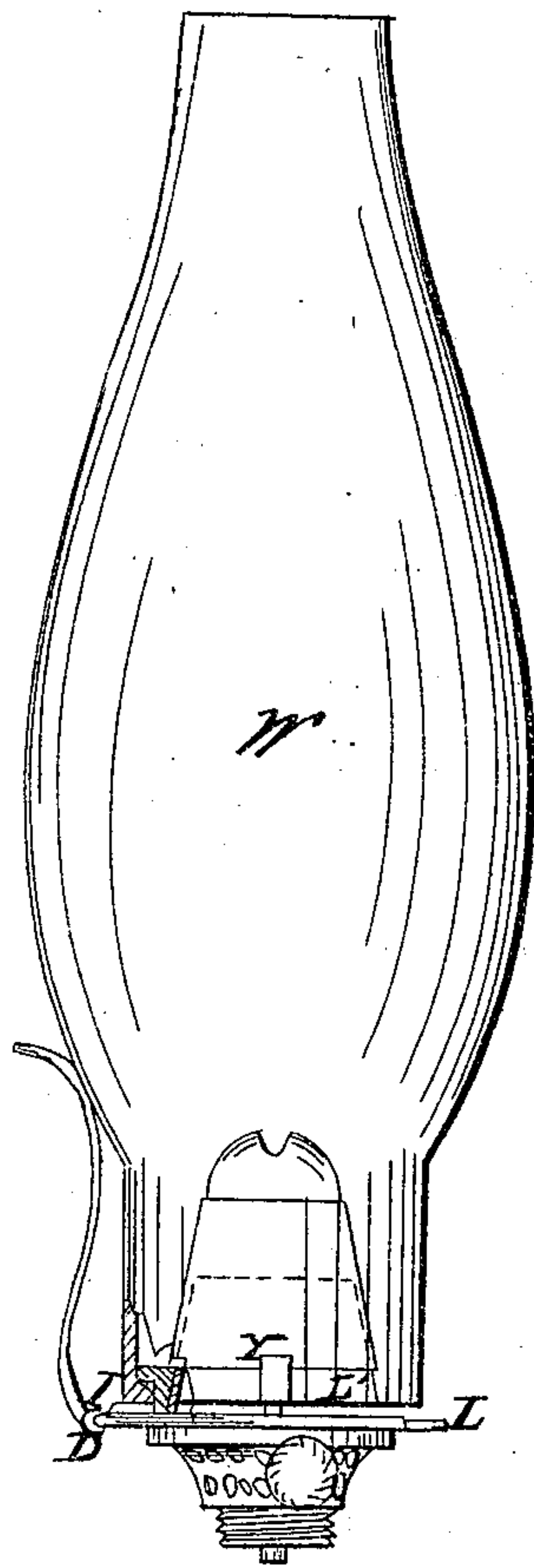
*J. D. Willoughby's*  
*Lamp-Top & Chimney*  
 PATENTED  
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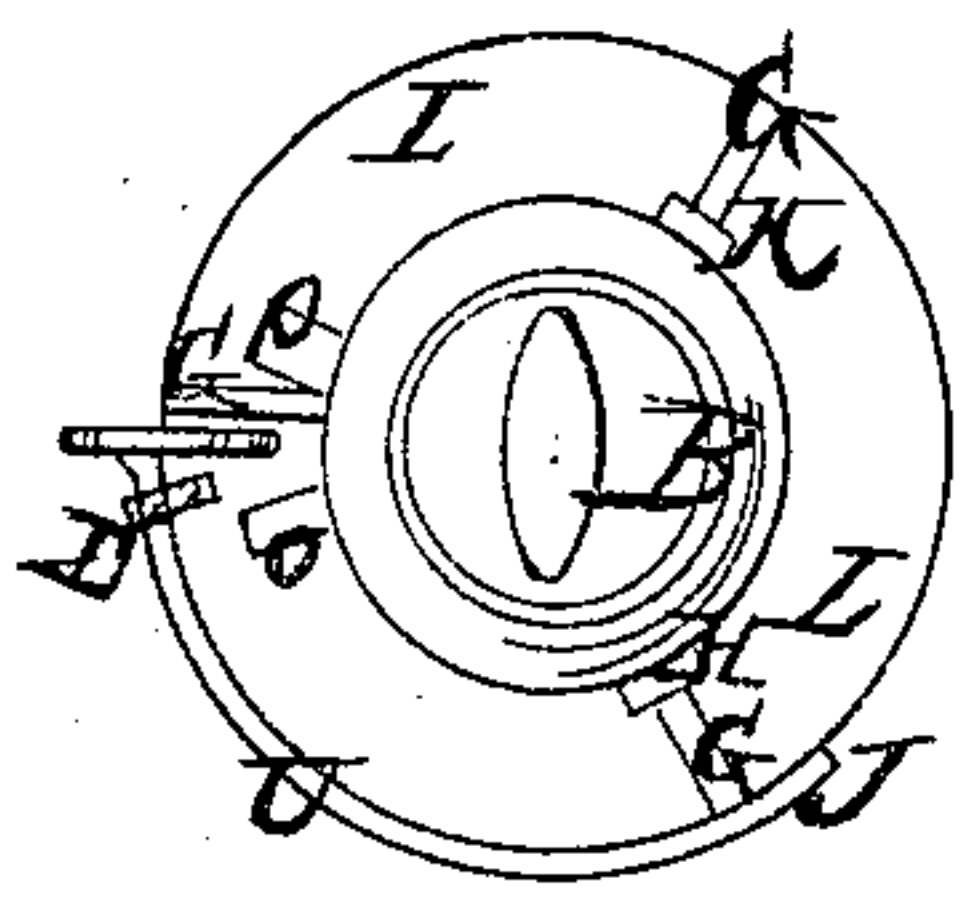
*Fig. 1.*



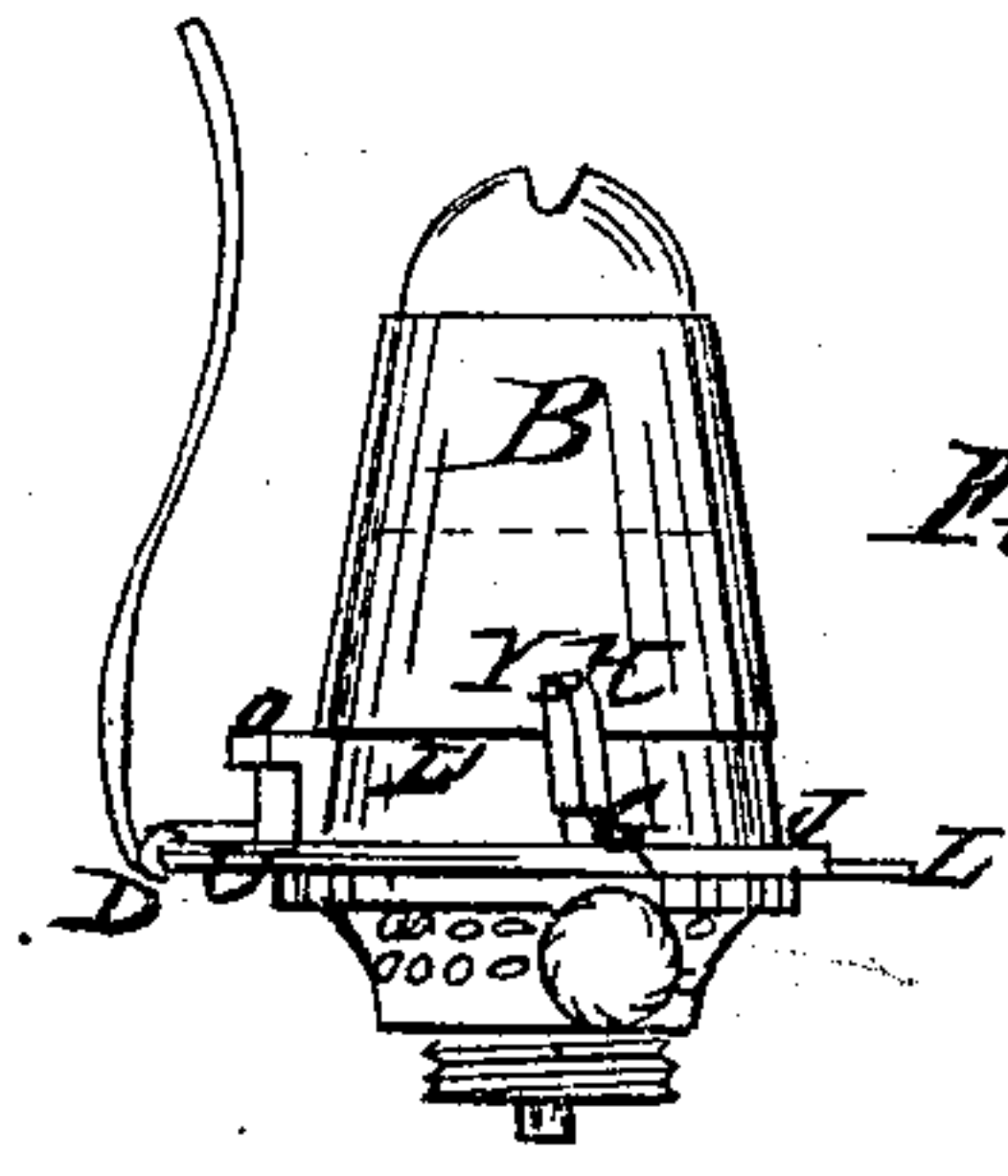
*Fig. 4.*



*Fig. 3.*



*Fig. 2.*



Witnesses.

*McO. Bannerman*  
*R. E. Hartwell*

Inventor.

*J. D. Willoughby*

# United States Patent Office.

J. D. WILLOUGHBY, OF SHIPPENSBURG, PENNSYLVANIA.

*Letters Patent No. 72,253, dated December 17, 1867.*

## IMPROVEMENT IN LAMP-CHIMNEYS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, J. D. WILLOUGHBY, of Shippensburg, in the county of Cumberland, and in the State of Pennsylvania, have invented certain new and useful Improvements in Lamp-Tops and Chimneys; and do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in an improved lamp-chimney, and lamp-top to receive and hold the chimney, as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents a vertical section of the lamp-chimney.

Figure 2 represents a side view of the lamp-top.

Figure 3 represents a top view of the lamp-top.

Figure 4 represents a side view of the lamp-top and chimney combined as they are when in use.

Fig. 1 represents a vertical section of the lamp-chimney W, made in the usual form, except the parts hereinafter named or referred to. I represents a flange on the lower end of the chimney, which is turned inward toward the centre instead of outward, as they are now made. This flange can be formed, when the chimney is made, by turning the lower end of the glass inward; or the lower end of the chimney may be formed or moulded into various shapes, so as to present what may be called a flange, a projection, a lip, or a shoulder, on the inside of the chimney; or the projection may be made by attaching any suitable material of the right form to the chimney after it is made. Neither is the flange necessarily confined to long-necked chimneys, as I have represented or shown in the drawing, but is suitable for various forms and sizes.

Fig. 2 represents a side view of the lamp-top, which is made in the usual form, except the parts hereinafter described or named. By the term lamp-top is meant all the parts, usually connected together, to be screwed into the oil-vessel or globe. L represents that portion of the lamp-top which is called the chimney-seat, and is without the old devices for holding the chimney. O O represent two catches, which are attached to the seat L, and to the flange L', which rises from the seat. These catches open or project outward from the centre of the top, so as to receive the flange I, which extends inward from the chimney, as seen in the drawing. These catches may be varied in form, size, mode, and place of attachment, and either one or more may be used.

Fig. 3 is a top view of the lamp-top, showing the catches O O, which assist in holding the chimney on its seat, and also shows the ribs G G G on the seat, to insure the passage of air under the chimney. Two projections, H H, are shown on opposite sides of the flange L', which are designed to nearly fill the neck of the chimney, to keep it at equal distance all around from the burner B, and thus avoid heating one part of the chimney more than another. The flange or tube L' extends upward about an inch, as shown in dotted lines in figs. 2 and 4. Over this flange the burner B is set, and made to rest on the catches O O, and on the projections H H. One of these projections extends up into a recess, y, in the burner, for the purpose of keeping the burner in its proper place. If glass burners are used, they should not fit tightly around the flange, to avoid the evils of the unequal expansion of the glass and metal, but should rest on the points before named. The height of the flange in the burner will keep it from being thrown from its seat.

When making the tops by machinery, it is intended to make the seat L and flange L' in one piece, and to stamp the catches O O, or their equivalents, and the ribs G G G and projections H H, in the piece when made. By making the burner oblong in the direction of H H, the neck of the chimney can be filled without the projections. The flange L' may be made to nearly fill the neck of the chimney, and may be so formed as to receive the burner on the inside, and hold it safely, whether made of glass or other substance.

U represents a spring, one end of which is attached to the outer edge of the seat L, as seen at J in fig. 3, and, for the length of two or more inches, bends around or along the edge of the seat. It is then bent upward and inward, as seen in figs. 2 and 4, so as to press against the chimney an inch or more above the flange I. If the strength of the spring is increased, the pressure may be applied nearer the base of the chimney. The spring can also be put on the inside of the chimney, and be made to press outward against the side farthest from the catches O O. The part of the spring near the bend is held by a loose sleeve or keeper, D, as seen in fig. 3. This



keeper holds the spring securely in its place, but allows the part from the bend toward the fastening, or from D to J, to be contorted or twisted when the upper end of the spring is forced outward to receive the chimney. The torsion of the spring is the force here relied upon to hold the chimney in its place. The spring U may be fastened at one end under the seat near where it is now fastened, and extend in a straight line on the under side to the point from which it now rises to press against the chimney. Various other points of attachment could be used, but I prefer the one shown, because, when the upright part of the spring is forced outward to receive the chimney, the motion is at right angles, and around the horizontal part where it joins the upright part, just as the motion of a crank is at right angles, and around the shaft to which the crank is attached. When this relationship between the two parts of the spring are far departed from, the tendency is to strain the spring at the bend rather than to contort or twist it. Springs not acting by torsion can be used. This spring is so far from the flame that it escapes the injury done to others by heat.

Fig. 4 shows the chimney and top put together as they are when in use. The drawing in fig. 4 represents a small portion of the chimney cut away to show the flange I in or under the catches O O, where it is firmly held by the spring U. The pressure of this spring against the chimney some distance above the flange I not only holds the flange in the catches, but, being aided by the catches, presses the chimney against the seat L, and holds it firmly at a right angle to the seat.

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

1. I claim a lamp-chimney, with the flange I, or its equivalent, as and for the purpose set forth.
2. I claim a lamp-top, with the catches O O, or their equivalents, as and for the purpose set forth.
3. I claim the lamp-chimney, with the flange I, and the lamp-top, with the catches O O, in combination with the spring U, or its equivalent, as and for the purpose set forth.

In testimony that I claim the foregoing, I have hereunto set my hand, this 21st day of September, 1867.

J. D. WILLOUGHBY.

Witnesses:

M. O. BANNERMAN,  
R. E. HARTWELL.