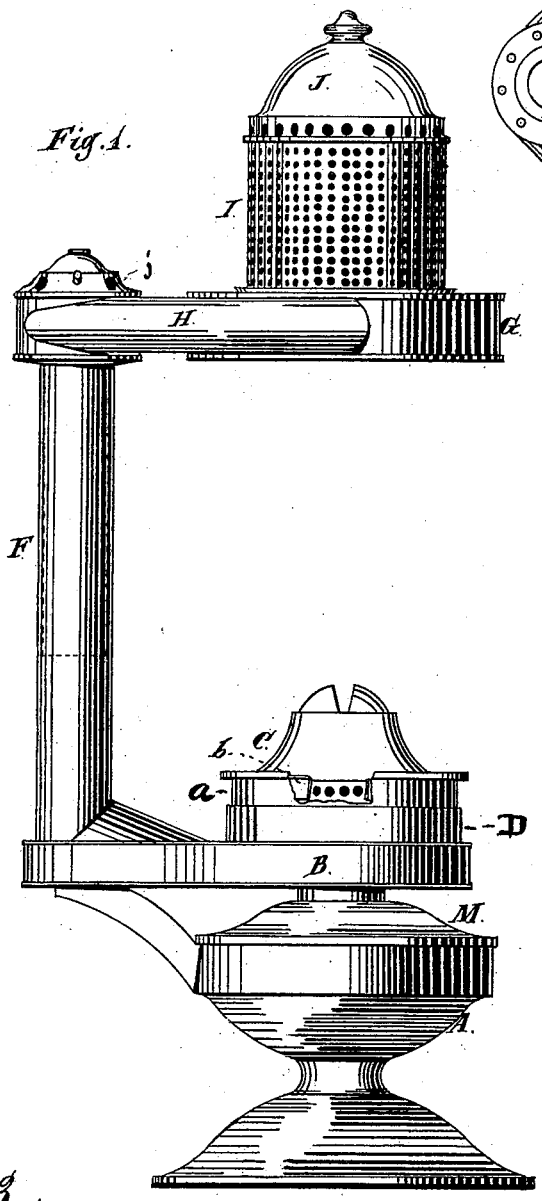
2 Sheets—Sheet 1.

W. WESTLAKE.

LAMP.

No. 188,270. Patented March 13, 1877.

Fig. 1.



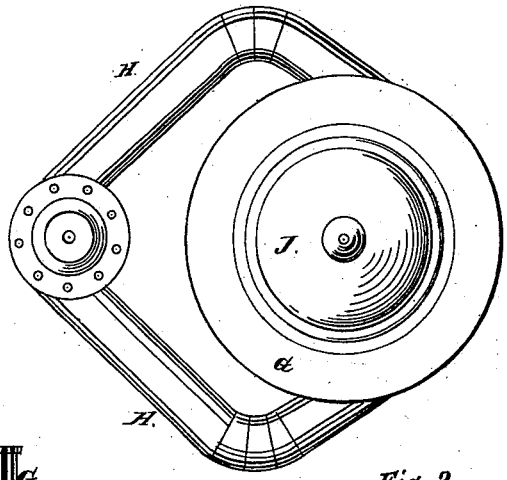


Fig. 2.

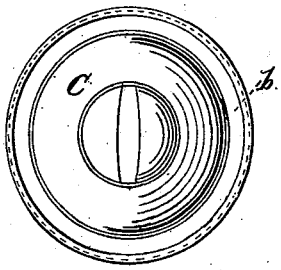


Fig. 3.

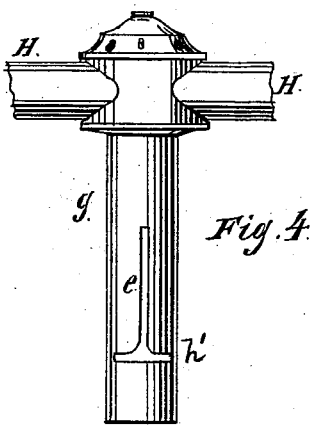


Fig. 4.

Witnesses:
F. P. Brund.
O. W. Brund.

Inventor
William Westlake

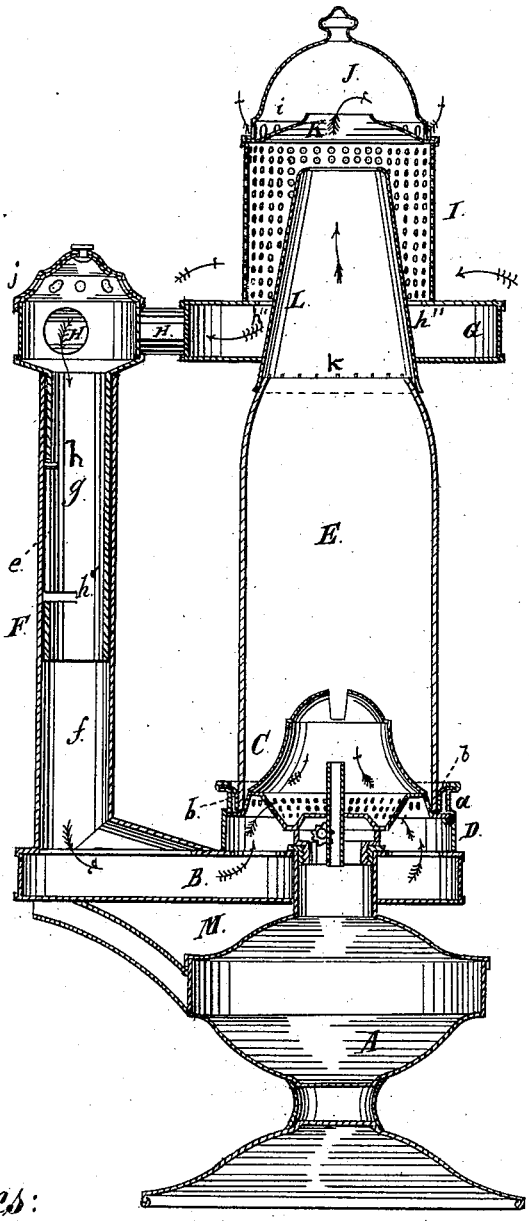
2 Sheets—Sheet 2.

W. WESTLAKE.

LAMP.

No. 188,270. Patented March 13, 1877.

Fig. 5.



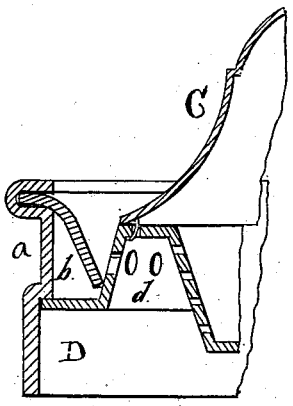


Fig. 6

Witnesses:

A. F. Barnes.

C. W. Bond

Inventor.

William Westlake

UNITED STATES PATENT OFFICE.

WILLIAM WESTLAKE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **188,270**, dated March 13, 1877; application filed October 19, 1876.

To all whom it may concern:

Be it known that I, WILLIAM WESTLAKE, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Lamps, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a plan view of the top of the lamp; Fig. 3, a plan view of the cone, gallery, and device for making the chimney air-tight at the base; Fig. 4, a detail; Fig. 5, a vertical section; Fig. 6, an enlarged detail.

In this lamp I use the common chimney.

The object of the invention is to provide a lamp so constructed that the flame shall be well supplied with air, and not be materially affected by the movement of the lamp, and by winds and other air-currents. Air to feed the flame is brought into a close chamber below the cone from a chamber above the flame through one or more tubes. The chimney is so fitted or packed at its base, and the cone and its jacket are so connected with the lamp, that no air comes to the flame except through the tube or tubes. The upper portion of the lamp is so constructed and arranged that the movements of the lamp, winds, and other air-currents do not produce a disturbing downward current in the chimney, while the air-chambers, the inlets for the air, and the outlets for the products of combustion are so arranged that the air-supply to the flame is constant and substantially uniform, producing a flame practically unvarying in size and brilliancy.

In the drawings, A represents the oil-pot. B is a large air-chamber above the oil-pot. C is the cone; D, the jacket, permanently connected with the cone. The chamber B opens at the top into this cone. I use an ordinary burner, connected with the oil-pot in the usual manner. E is the chimney. F is a tube, communicating at its lower end with the chamber B. As represented, this tube is made of two parts, *f g*, one sliding in the other. G is a large air-chamber surrounding the top of the chimney. H H are two tubes, communicating with the top of the tube F and the chamber G. I is a cylinder of perforated sheet metal, permanently secured to the top of the air-chamber G. J is a cap, provided with a series of holes, *i*. K is a wind-breaker. L is practically an extension of the glass chimney, the upper end of the chimney fitting tightly into it. The upper end of this part L extends up very nearly to the top of the perforated sheet metal I, and around it is a narrow opening about one-fourth of an inch in width, through which air passes into the chamber G. *a* is a gallery, upon which the chimney rests. *b* is a piece of rubber or other suitable flexible material, permanently secured at its upper edge to the top of the gallery *a*, its design being to form a close packing at the base of the chimney for the purpose of excluding air. *c* are holes in the base of the cone, as usual; *d*, holes through which the air passes into the chimney, between it and the outside of the cone, for the purpose of supplying air to the outside of the flame. *e* is a slot in the portion *g* of the tube F, and *h* is a pin secured to *f*, and extending into this slot *e*; *h'*, a cross-slot to permit the turning of the cup when elevated.

The jacket D must fit tightly upon the chamber B, so as to prevent the passage of air at the point of connection. The air-chamber B and the oil-pot A are so constructed and arranged that there is an open air-space between them, M, which effectually prevents the heating of the oil in A.

In use, the products of combustion pass directly into the chamber covered by the cap J, and escape through the openings *i*. In some cases a portion of the products may escape through the upper perforations in I, while air to feed the flame passes through the openings in the lower portion of I; thence down through the opening *h''* into the chamber G; thence through the tube or tubes H, and down the tube F into B, from which a greater portion of the air passes directly beneath the cone, while a small portion escapes through the holes *d* into the space between the chimney and the outside of the cone. The chamber G should have no opening of any magnitude for the admission of air, except that in the top *h''*. It must be of considerable size, as shown.

It is important to use at least two tubes, H H, leading from the air-chamber G, if the lamp is to be exposed to changing cur-

rents of air; but if it is to remain stationary or unexposed to air-currents, a single tube may be used.

I have shown a series of holes, *j*, in the top of the tube F, controlled by a register. These holes may be open when the lamp is standing still; but for general use it will be better to have them closed or omitted. I find that it is important that the top of the part L should be carried up, as represented in the drawings, and that but a small space, *h''*, should be left around L in the top of the chamber G, for admitting air from I.

To remove the chimney and to light the lamp, the slip-tube *g* can be raised, carrying with it the air-chamber G, and parts connected therewith, which can be turned around or away from the chimney, and will be supported by the pin *h*. The lamp may be used as a wall-lamp in halls, barns, and other places, in which case the tube F should be made flat, or some other way might be used to keep the lamp from turning. The chimney-extension L may be straight instead of tapering, though I prefer the tapering form. It is permanently attached to the chamber G, so as to be lifted with said chamber. It may, however, be removably attached for convenience in repairs. Its lower extremity is provided with slits *k*, to fit variations in chimneys and allow for expansion of the glass. When the glasses to be used are uniform in size, the slits may be omitted.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a suction-lamp, the combination of the close-fitting jacket D *a* and packing *b* with a chimney-cone, C, and air-chamber B, for preventing the entrance of any disturbing currents of air at the base of the chimney, substantially as specified.

2. The air-chamber G, having an opening, *h''*, around the chimney L, in combination with the chimney L, one or more tubes, H, tube F, and air-chamber B, substantially as described.

3. The combination of the air-chamber G, open space *h''*, chimney L, perforated cylinder I, and cap J, all constructed and arranged substantially as and for the purposes set forth.

4. The slip-tube *g*, provided with the slot *e*, in combination with the tube *f* and pin *h*, substantially as and for the purpose specified.

5. The air-chamber B and oil-pot A, arranged with an air-space, M, between them, in combination with the tube F, air-chamber G, and one or more tubes, H, substantially as and for the purposes specified.

WILLIAM WESTLAKE.

Witnesses:
O. W. BOND,
E. A. WEST.