

J. F. RUSSELL.

Lamp Burner.

No. 99,482.

Patented Feb. 1, 1870.

Fig. 1

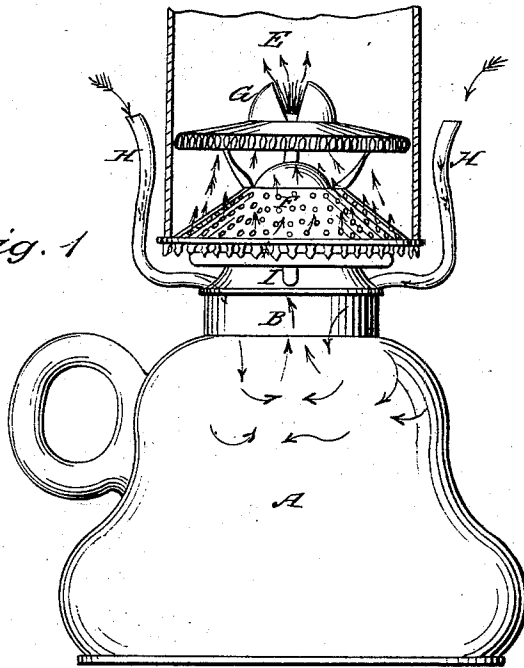


Fig. 2

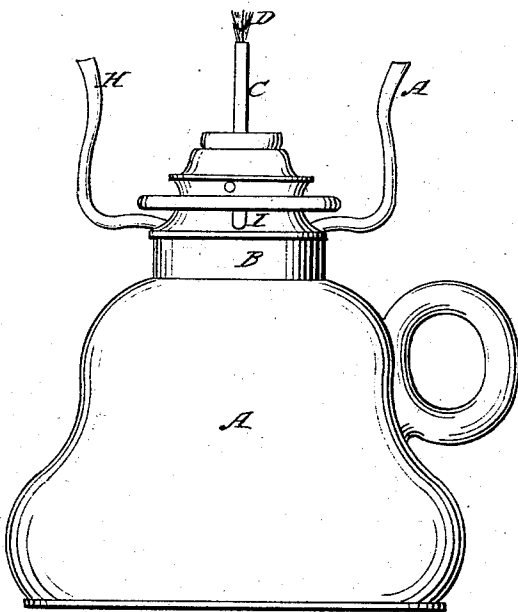
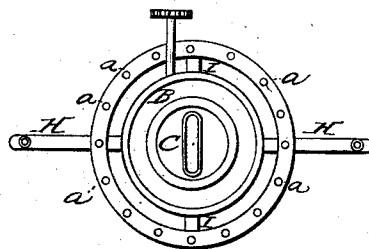


Fig. 3



Witnesses:
Samuel W. Cox
Edw. R. Russell

Inventor:
James F. Russell
By his Atty's A. S. M. Inters + Co

United States Patent Office.

JAMES F. RUSSELL, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO HIMSELF, WILLIAM EDELEN, AND COLUMBUS ALEXANDER, OF SAME PLACE.

Letters Patent No. 99,482, dated February 1, 1870.

IMPROVEMENT IN LAMPS.

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, JAMES F. RUSSELL, of Washington, in the county of Washington, and District of Columbia, have invented certain new and useful Improvements in Lamps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this application.

The object of my invention is to provide a means for preventing the explosion of lamps, produced by the generation of gas within the bulb or oil-receptacle, and consists in providing the cap with one or more inlet air-ducts, and also with any desired number of exit-tubes, so arranged with relation to the lamp and each other that, while the inlet-ducts shall be entirely free from the influence of any current established at the base, and passing up within the chimney, by having their mouths above the base of the chimney, the exit-pipes shall be entirely within such influence, for the purposes hereinafter more fully explained.

To enable those skilled in the art to which my invention pertains to make and use the same, I will proceed to describe its construction and operation, referring by letters to the accompanying drawing, in which—

Figure 1 is a side or plan view of a lamp embodying my invention, with the chimney shown in section;

Figure 2 is a similar view, with the cone and chimney removed; and

Figure 3, a top view of the cap and pipes.

Similar letters of reference denote like parts in the different figures.

A represents the globe or oil-receptacle, and

B the cap, which is secured to the neck of the lamp in the usual manner.

C is the wick-tube;

D, the wick;

E, the chimney;

F, the perforated disk; and

G, the cone of an ordinary lamp.

The cap B is made of such a length above the neck of the lamp as to admit of the passage of the inlet-tubes H and exit-tubes I to the space within the lamp. These tubes may be of about the size and shape seen in the drawing, and barely pass through the cap, or they may be varied in design, and enter a short distance within the lamp. The former I have shown as slightly bell-mouthed, and extending up on the outside of the chimney, away from the influence of any currents established at the base of the chimney. They may also be made to serve as guards to protect the displacement of the chimney.

The tubes I are so arranged that their exit is within the controlling influence of the upward current from the base of the chimney, and discharge immediately underneath the flame.

It is well known that very many, if not the majority, of the explosions are caused by the rapid generation of gas upon the surface of the oil within the globe, beyond the capacity of the lamp, when an explosion must ensue, with the disastrous results common in such cases.

By the employment of my device, all liability to explosion is obviated, for as soon as a vacuum is produced within the chimney by the flame, a rush of fresh air from below the base of the chimney at once begins, and continues as long as the lamp burns. This, of course, produces a current, and the exit-pipes being within the influence of this current, with the inlet-pipes outside of it, the gases which may be within the lamp are discharged from the exit-pipes into the ascending currents, and carried up to the flame, where they are consumed, and assist in combustion. Fresh air continually passes down the inlet-pipes to supply the space within the lamp, and, commingling with the gases, passes off as described.

It will thus be seen that there is less likelihood of gas being generated, as the constant supply of fresh air to the oil-receptacle is calculated to reduce the temperature and check the generation of gas, but, failing in this, any gases which are generated pass off very soon.

I have represented the exit-pipes as connected with a hollow annulus, perforated on its upper face with small holes, *a a a*, &c., immediately underneath the perforated disk, the object of which is to distribute the air and gas equally around all points of the flame. Of course the form and design may be varied in many respects, without departing from the spirit of my invention.

Having described the construction and operation of my improved lamp,

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

A lamp, provided with inlet-tubes H, the mouths of which are located above the base of the chimney, beyond the influences of any currents established at this point, and exit-tubes I, so located as to be fully within the influence of any such currents, for the purpose of producing a continuous influx of fresh air to the interior of the lamp, and the expulsion and consumption of any gases generated within, substantially in the manner described.

In testimony whereof, I have hereunto set my hand and seal, this day of January, 1870.

JAMES F. RUSSELL. [L. s.]

Witnesses:

F. E. ALEXANDER,
WM. B. GURLEY.