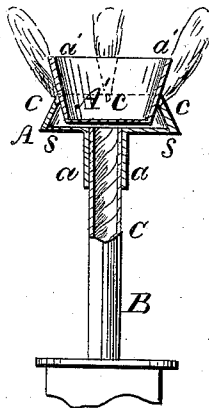


W. E. DARRAH.

Vapor Burner.

No. 80,926.

Patented Aug. 11, 1868.



Witnesses:

C. A. Pettit  
A. M. Garner

Inventor:

W. E. Darrah.  
By *[Signature]* & Co.  
attorneys

# United States Patent Office.

DR. W. E. DARRAH, OF BALTIMORE, MARYLAND.

*Letters Patent No. 80,926, dated August 11, 1868.*

## IMPROVEMENT IN VAPOR-BURNERS.

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, DR. W. E. DARRAH, of the city and county of Baltimore, and State of Maryland, have invented a new and improved Gas-Generator; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

My invention is represented by a vertical axial section.

The object of this invention is to construct a simple and cheap burner, which can be applied to any hydrocarbon-lamp, and by the use of which a clearer, whiter, and steadier light can be obtained than from any heretofore brought into public use.

This object is attained by the use of an attachable and detachable cap, which becomes heated, and thereby generates an abundant supply of combustible vapor to support the flame. The cap is made with double walls, extending up a short distance from its base, between which the vapor is conducted to the jet-holes.

In the drawings, B represents the wick-tube of an ordinary coal-oil or spirit-lamp, within which, in red lines, is seen the wick C. The cap above mentioned is shown above the wick-tube at A A', being attached to the tube by a hollow stem, *a*. The cap or burner is formed of two cups, A and A', the former made with wide flat bottom and walls, contracted towards their top, and the latter made with walls about double the height of the walls A A, but contracted in the opposite direction, which gives it an expanded top and a narrow flat bottom. The parts being thus constructed, the cup A' is set into the cup A till its bottom comes nearly down to that of the lower cup, and in this position the walls are soldered or brazed firmly together at *c c*. Jet-holes are made around the line *c c*, or just below it.

In using this improved burner, I place the cap upon the wick-tube, as shown in the drawing, and hold a lighted match under it a second or two, which heats the upper end of the wick-tube, and generates sufficient combustible vapor to fill the space *c* between the cups, and escape from the jet-holes, where it will be instantly ignited by the match. The flame impinging against the flaring walls *a a'* of the upper cup A', will raise the whole burner to a very high temperature in a few moments, while the heat, conducted by the metallic walls and bottoms of the cups to the upper end of the wick-tube, will continue to generate the vapor therefrom rapidly, so as to produce an abundant supply for the jets.

The light thus obtained is clear, steady, and of a beautiful white color, possessing remarkable illuminating power.

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

The burner, composed essentially of the parts A A' and *a*, having the jets *c c*, when constructed substantially as and for the purpose specified.

To the above specification of my improvement, I have signed my hand, this sixth day of July, 1868.

DR. W. E. DARRAH.

Witnesses:

NATHAN K. ELLSWORTH,

CHAS. A. PETTIT.