W. H. LAWRENCE.

Vapor Burner.

No. 113,178. Patented Mar. 28, 1871.

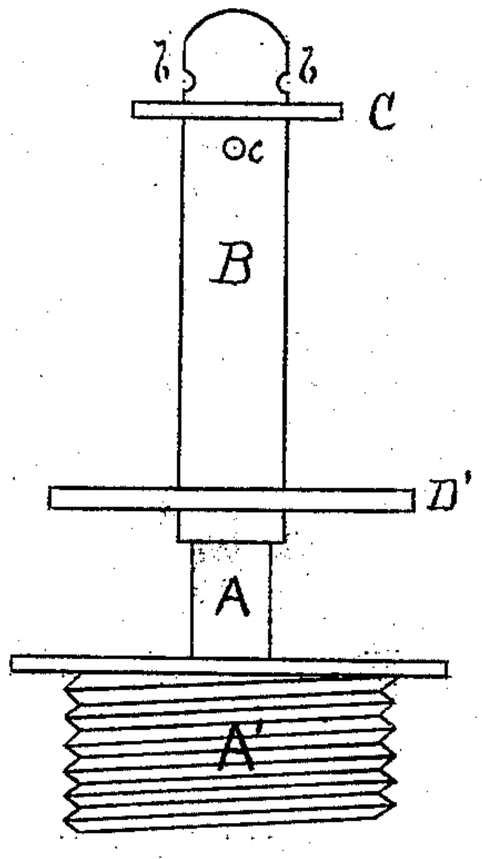

FIG: 1.

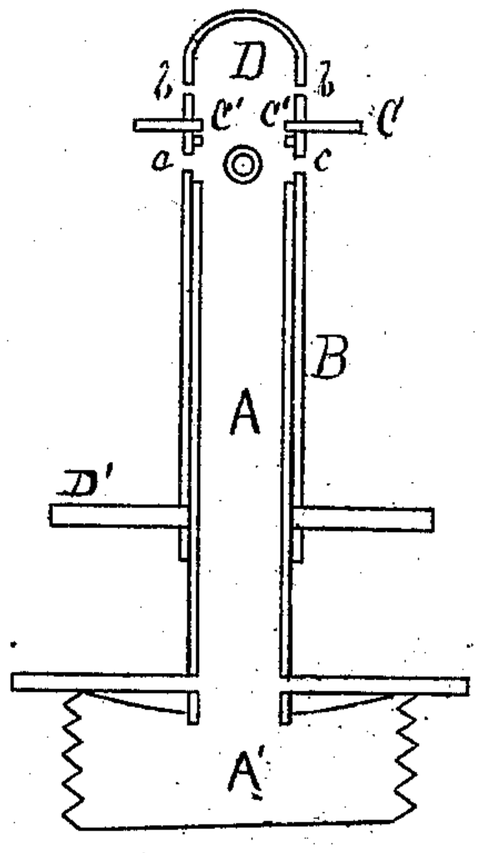

FIG: 2.

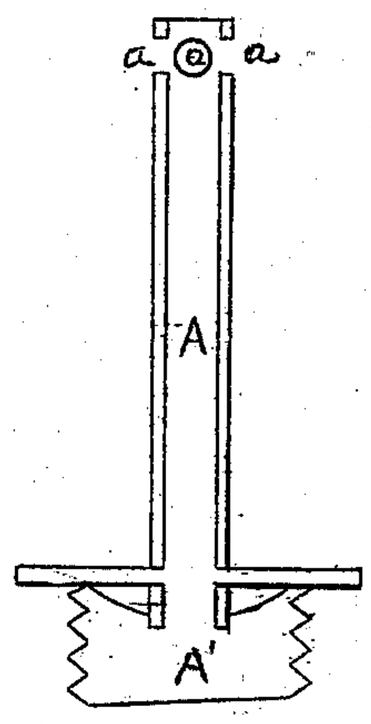

FIG: 3.

WITNESSES.

Edwin James.

I. D. James

INVENTOR

William H. Lawrence,

per J. L. F. Holmead

Attorney.

United States Patent Office.

WILLIAM H. LAWRENCE, OF BALTIMORE, MARYLAND.*

Letters Patent No. 113,178, dated March 28, 1871.

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, WILLIAM H. LAWRENCE, of the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Vapor-Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon making part of this specification, in which—

Figure 1 is a view of the burner.

Figure 2 is a vertical sectional view of the same.

Figure 3 is a vertical sectional view of the wick-tube with the vapor-generating sleeve or cylinder removed.

This improvement relates to that class of burners in which the wick-tube and an independent sleeve or jacket encircling or inclosing the same are used in forming the vapor-generator.

My invention consists in constructing the cylindrical sleeve or jacket with an annular shoulder on its inner, and a circular ring-plate or disk on its outer surface, each being on the upper section of the same.

Through the wall of the cylinder, both above and below the shoulder and the disk or ring-plate, are cut three or more small orifices or openings, the lower series of which correspond and meet over like openings in and near the upper face or edge of the wick-tube.

The cylindrical outer sleeve and wick-tube, when thus constructed independently of all other appliances, simply by slipping the sleeve over the tube forms a most effective and economical vapor-generating burner, one that is not only exceedingly simple and cheap in its arrangement, as well as reliable in use, but also one in which the quantity of vapor fed or supplied to the flame can be regulated, thus affording the means whereby the amount of vapor consumed by the burner, and, consequently, the degree of light emitted therefrom, can be so controlled as to increase or diminish the same at pleasure.

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

A is a wick-tube, and is connected with the lamp by the ordinary screw-cap A′.

In the upper section of the tube A, and near its top face or edge, are three or more small orifices or openings, *a a*.

B is the cylindrical sleeve or jacket, and is a straight vertical metallic cylinder. The diameter of this cylinder is a little greater than that of the tube A, which allows of its being slipped or passed freely over the tube. While this cylinder sits closely over the tube, leaving but little if any space between their walls, still it must fit thereon in such manner as to allow of its free revolution when desired.

On the outer surface of the sleeve B is a metallic ring-plate or disk, C. This plate or disk furnishes the heating surface required for generating the vapor that supplies the flame.

On the inner surface of the sleeve, and nearly opposite the disk C, is an annular shoulder, C′.

It will be seen, by reference to fig. 2, that when the tube A is inserted or passed into the cylindrical sleeve B its progress is arrested by the shoulder C′, and against which it abuts. This leaves an entirely unobstructed space in the head of the cylinder, and which forms the vapor-chamber D.

Through the wall of the cylindrical sleeve B are cut two series of small openings or jets, *b b* and *c c*, the former of which is above the shoulder C′ and disk C, and communicates with the chamber D. The other is below the disk and shoulder, and at such a position on the cylinder that, when the tube A is inserted and pushed against the shoulder, the openings *a a* and *c c* shall be on a line, and when the relative position of the cylinder and tube are such as to permit communication with each other.

This communication can be secured and interrupted at pleasure, and is effected simply by partially revolving the cylinder on the tube, which is readily done by turning the button or thumb-piece D′.

The operation is as follows:

The lamp may be filled with any suitable burning-fluid. The wick having been previously inserted in the tube A, it is secured by means of the cap A′, in the usual manner. The flame of a lamp, match, or taper is then applied under the ring-plate or disk, which, instantly becoming heated, will generate vapor, which, ascending to the chamber D, will escape through the orifices or jets *b b*, and, becoming ignited, will furnish a continuous flame.

Now, to increase the flame, you have simply to turn the sleeve or jacket B on the wick-tube until the orifices or jets *c c* of the jacket-cylinder B are directly opposite to or communicate with the jets *a a* of the tube A, when instantly an additional vapor-current is emitted, which, instantly becoming ignited, more than doubles the amount or quantity of the flame which the burner will produce, and, both flames impinging against the disk C, readily supply the requisite heat to insure the proper generation of the vapor to feed both series of jets.

To reduce this flame, you have simply to turn the sleeve B, which is readily done through the button B′ on the tube, to such relative position thereon that their orifices shall no longer communicate, when the lower flame is instantly shut off.

*Assignor to himself, J. K. P. Sweeting, Jonathan P. Creager & Wells.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent of the United States, is—

1. The perforated sleeve or jacket-cylinder B, when the same is provided with a disk, C, and an inner shoulder, C′, substantially as described.

2. The tube B, having a shoulder, C′, and a disk, C, when the same is provided with jets *b b* and *c c*, one being above and the other below the disk, in combination with the tube A, having orifices or jets *a a*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. H. LAWRENCE.

Witnesses:

JOS. T. K. PLANT,

EDWIN JAMES.