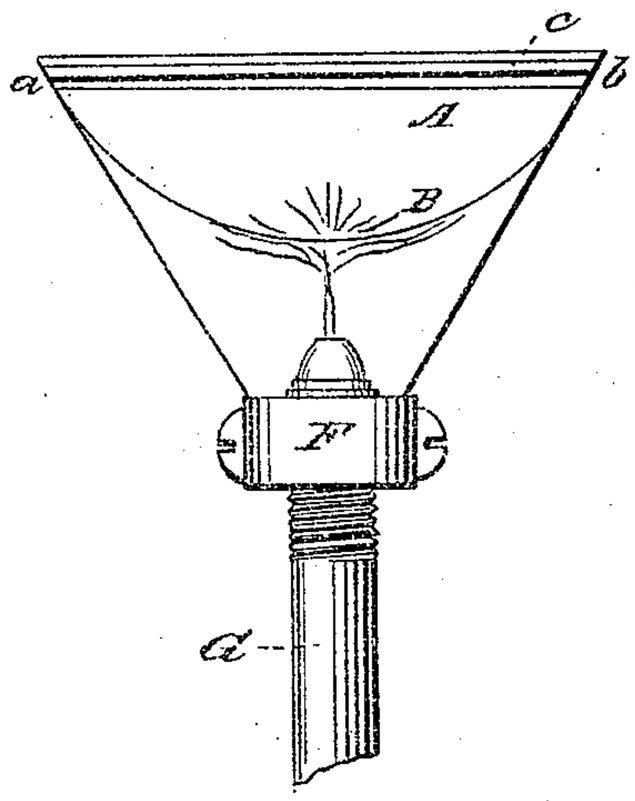
S. D. BALDWIN.

Vapor Burner.

No. 101,413. Patented April 5, 1870.

Fig. 1



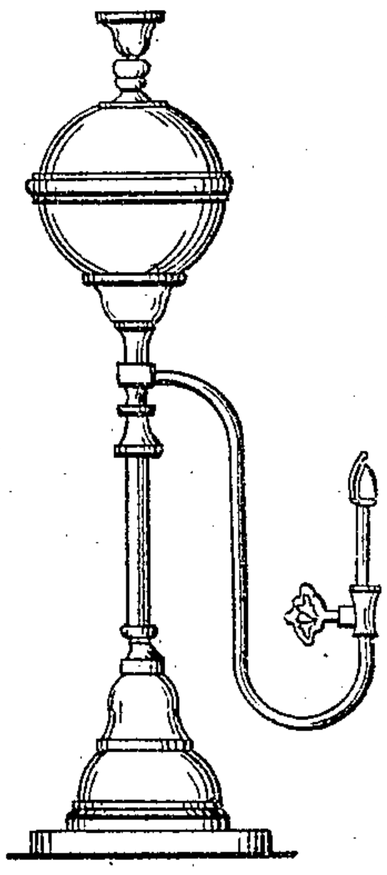


Fig. 2

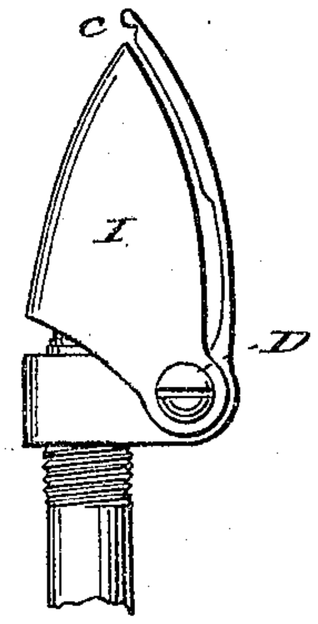


Fig. 3

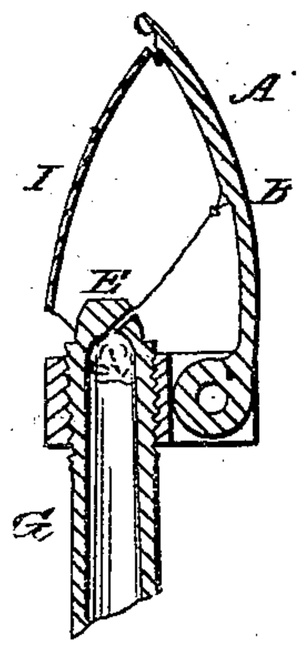


Fig. 4

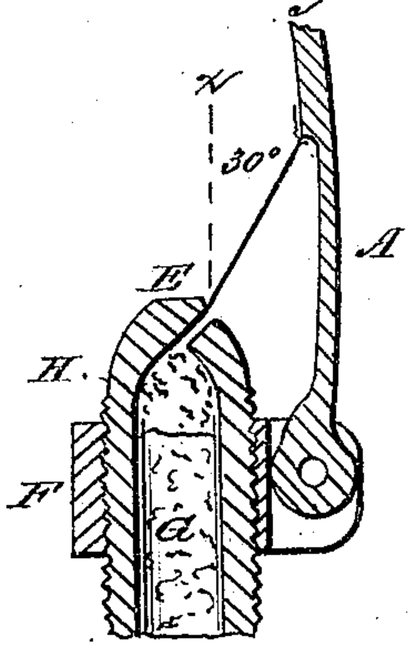
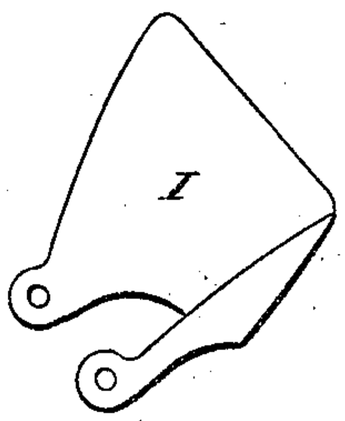


Fig. 5



Witnesses

E. A. Nesh

W. W. Bond

Inventor

Silus D. Baldwin

United States Patent Office.

SILAS D. BALDWIN, OF CHICAGO, ILLINOIS.

Letters Patent No. 101,413, *dated April* 5, 1870.

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, SILAS D. BALDWIN, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful improvements in Hydrocarbon Gas-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a front view with front plate removed.

Figure 2, a side view.

Figure 3, a vertical section.

Figure 4, a similar view enlarged; and

Figure 5, a detail of front.

Like letters refer to the same parts in all of the figures.

My invention relates particularly to that class of burners used upon self-generating gas-lamps, and its object is to provide for the proper distribution of the gas along the line of combustion, and for more perfectly regulating and controlling the flow of the current of gas.

To enable others to make and use my invention I proceed to describe the construction and operation of the same.

A represents the generating plate or heater, and forms the back part of the burner, the upper portion being somewhat thicker than the lower, and so constructed that a ridge, B, circular in outline, extends from *a* to *b*, the purpose of which is to deflect the gas, or a portion of it, and cause it to be more evenly distributed along the upper edge of the plate, which is the line of combustion.

Near the upper edge of the plate A is a groove, *c*, extending across the plate, the object of which is to check somewhat the flow of the gas, which at this point is very rapid, and ensure more perfect combustion.

This plate is pivoted at its lower end, at D, so that it can be adjusted at any desired angle.

I is a cover forming the front of the burner, protecting the gas from the currents of air. It is open at the bottom for the purpose of admitting air, and is pivoted at D, so that it can be adjusted at any desired angle.

G is a short tube, which is so made that it can be secured to the tube leading to the reservoir for the fluid in the ordinary manner. The tube may be packed, leaving a gas-chamber, H, at the top.

E is a diagonal orifice in the top of the tube G, through which the gas flows. This orifice should be so located that the gas will strike the plate A at the ridge B, at an angle of about thirty degrees.

F is a collar to which the plate A and cover I are connected; the collar and the upper part of G are provided with screw-threads, so that the collar with the plate A and cover I may be raised or lowered as may be necessary to adjust the parts relatively to the orifice E.

In use the gas is generated as usual, and passing through the diagonal orifice E strikes against the plate A, at the ridge B, by which it is partially deflected from its course, both to the right and left, and becomes more thoroughly mingled with the ascending current of air. At the groove *c* it is again somewhat checked and reaches the line of combustion, being equally distributed along the same. The size of the opening between the upper edges of A and I can be regulated as may be necessary.

When gas flows rapidly the tendency is for the carbon and hydrogen to separate; the groove *c* checks the rapid flow and prevents such separation, while by the use of the ridge B a much broader flame can be produced than by any means now in use.

Instead of making the narrow groove *c*, in the plate A, the upper portion may be made concave.

The burner can be made somewhat cheaper by making the plate A and the collar F in a single piece dispensing with the joint by which the two parts are connected, as above described, in which case the proper adjustment will be secured by the movable collar.

Having thus fully described my invention,

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

1. The adjustable plate A, when provided with the groove *c* or ridge B, or with both, substantially as specified.

2. The plate A in combination with the movable collar F, substantially as specified.

3. The plate or cover I constructed and operating substantially as specified.

4. The tube G, when provided with the diagonal orifice E, in combination with the movable collar F, the adjustable plate A, and the plate I, substantially as specified.

S. D. BALDWIN.

Witnesses:

E. A. WEST,

O. W. BOND.