W. O. B. MERRILL.

Lamp Burner.

No. 35,533. Patented June 10, 1862.

Fig. 3

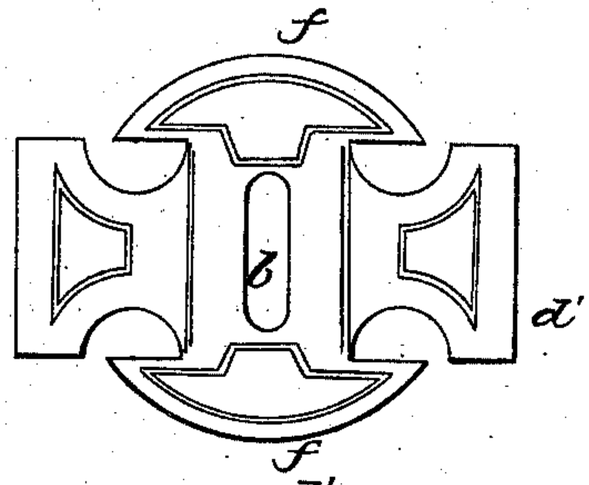


Fig. 4

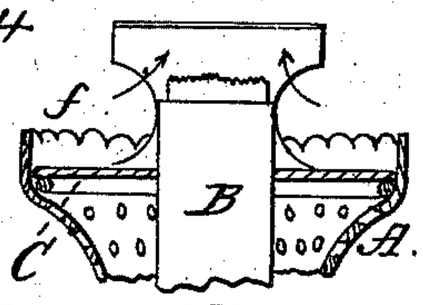


Fig. 2

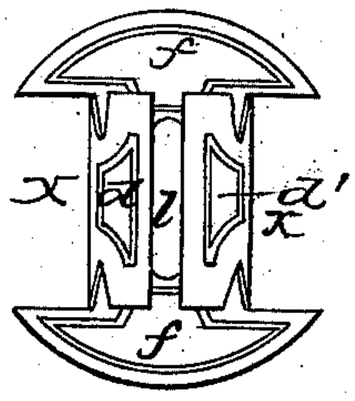
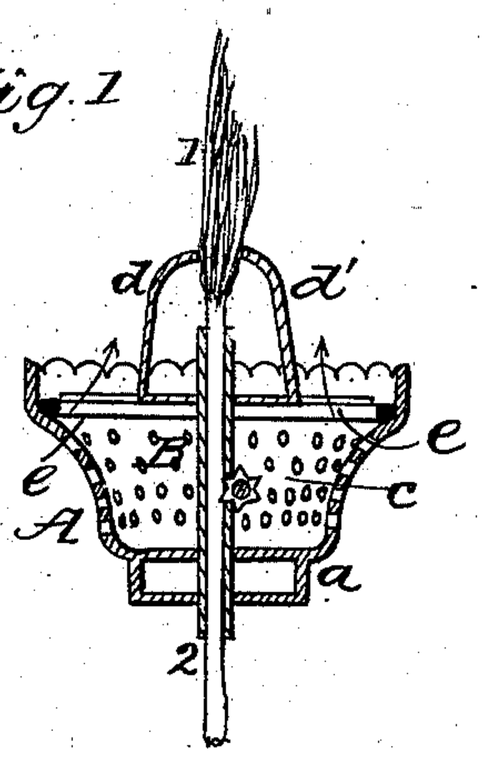


Fig. 1



Witnesses
Charles E Foster.
Charles Hudson.

Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM O. B. MERRILL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COAL-OIL BURNERS.

Specification forming part of Letters Patent No. **35,533**, dated June 10, 1862.

To all whom it may concern:

Be it known that I, WILLIAM O. B. MERRILL, of Philadelphia, Pennsylvania, have invented a Smoke-Consumer for Coal-Oil-Lamp Burners; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists of a metal plate having certain projections and arranged within the perforated casing of a coal-oil-lamp burner in the manner described hereinafter, so that a plentiful supply of air may be directed to the sides and base of the flame, and the smoke thereby effectually consumed.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a sectional view of the burner; Fig. 2, a plan view of the smoke-consumer detached from the burner; Fig. 3, a view of the plate of which the smoke-consumer is composed; and Fig. 4, a transverse sectional view on the line 1 2, Fig. 1.

Similar letters refer to similar parts throughout the several views.

A is the outer perforated casing of an ordinary burner of a coal-oil lamp, and is provided with the usual screwed projection, *a*, for attachment to the reservoir, and with a tube, B, for receiving a flat wick, which can be raised and lowered by means of the usual cog-wheels, C.

Within the casing A, and near the upper edge of the same, is a ledge, *e*, and on this ledge rests the smoke-consumer, the form of and method of constructing which will be best understood on reference to Figs. 2 and 3. A flat plate of thin brass or other metal is reduced, by stamping and cutting or otherwise, to the form represented in Fig. 3, an oblong hole, *b*, for admitting the wick-tube being formed in the middle of the plate.

The two projections *d* and *d'* are turned up so as to assume the form and relative position illustrated in Fig. 1, the curved projections *f f'* retaining their original form, so as to fit snugly within the casing A and rest on the ledge *e*.

It will be observed that the air has free access to the top of the wick-tube and base of the flame by passing in the opposite directions pointed out by the arrows, Fig. 4, between the two turned-up projections *d* and *d'*.

In other coal-oil-lamp burners the air directed to the base of the flame (a point where the most plentiful supply is necessary) is limited by the contracted passages through which it has to pass. In my improved burner, however, the base of the flame is so exposed to an unlimited supply of air that the greater portion of the carbonaceous products of combustion is consumed. The air which finds its way through the perforations to the interior of the casing A becomes partially heated therein, and, passing upward through the openings *x x* formed in the plate by the turning up of the projections *d* and *d'*, is directed to the opposite side of the flame, causing the latter to burn with brilliancy and to consume whatever carbon may escape the effect of the plentiful supply of air admitted to the base of the flame.

It will be seen that my improvement, cheap and simple as it is, effectually accomplishes the same purpose as the many complex devices heretofore used in connection with coal-oil lamps for attaining the same results, and that the improvement may be applied to any of the ordinary burners and used either with or without a chimney, the consumption of smoke being so effectually accomplished that a chimney may, is desired, be dispensed with.

In applying my improvement to the burner care should be taken to properly adjust the projections *d* and *d'* in respect to each other. This may be easily done by bending the projections and altering their relative positions until the flame burns with brilliancy and freedom from smoke.

I claim as my invention, and desire to secure by Letters Patent—

The smoke-consumer composed of a metal plate with the flat projections *f f* and turned-up projections *d* and *d'*, when arranged within the perforated casing A of a coal-oil-lamp burner, as and for the purpose herein set forth.

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

WM. O. B. MERRILL.

Witnesses:

CHARLES E. FOSTER,

HENRY HOWSON.