H. ALLEN.

Oil-Stove.

No. 166,740. Patented Aug. 17, 1875.

Fig. 1.

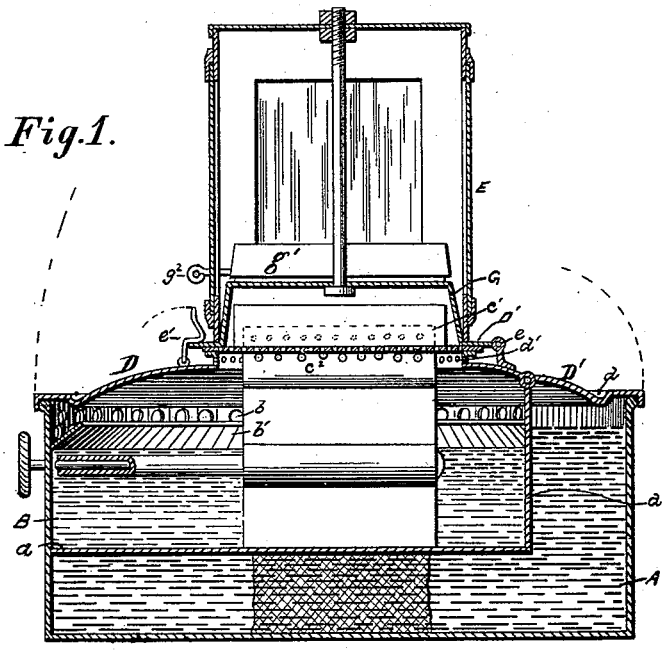
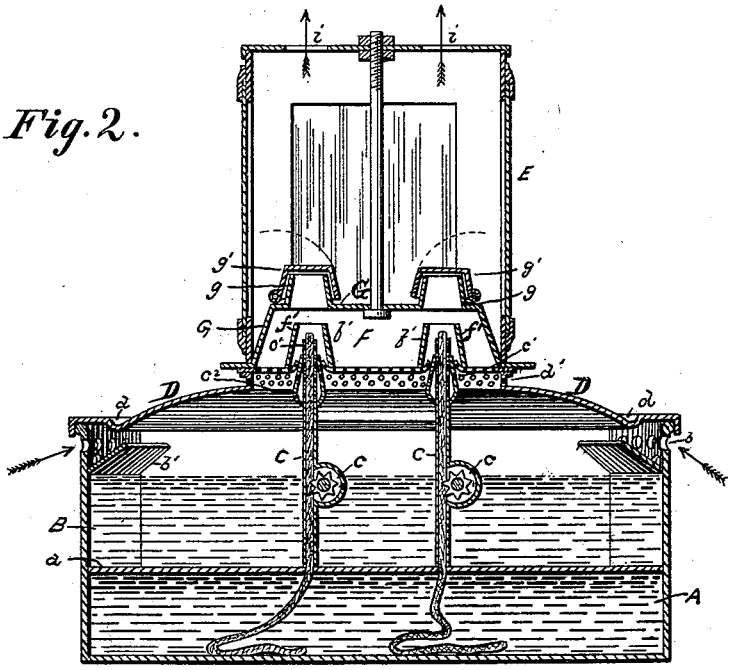


Fig. 2.



WITNESSES

Wm. J. Peyton.

E. C. Davidson

INVENTOR

Hosea Allen

By Wm. D. Baldwin his Attorney

UNITED STATES PATENT OFFICE.

HOSEA ALLEN, OF TITUSVILLE, PENNSYLVANIA, ASSIGNOR OF PART OF HIS RIGHT TO G. SHAMBURG, E. G. PATTERSON, JONATHAN WATSON, AND ROBERT L. KERNOCHAN.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **166,740**, dated August 17, 1875; application filed July 9, 1875.

To all whom it may concern:

Be it known that I, HOSEA ALLEN, of Titusville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Oil-Stoves, of which the following is a specification:

My invention relates to an oil-stove adapted for cooking, heating, and illuminating purposes.

The subject-matter claimed will hereinafter specifically be set forth.

In the accompanying drawings, Figure 1 is a vertical section through my improved stove; Fig. 2, a similar section therethrough in a plane at right angles to the plane of section in Fig. 1.

The body of the stove is shown as composed of an oil-reservoir, A, and water or evaporating chamber B placed above, and is separated from it by a water-tight partition, *a*. Around the upper edge of the wall of the evaporating-chamber are draft openings or perforations *b* to admit air to the burners. Around the inside of the chamber is a fender, *b'*, fastened below the draft-openings, and extending obliquely upward and inward to within a short distance from the top of the stove. This fender, while admitting air freely to pass, prevents the water in the evaporating-chamber from splashing out through the draft-openings when the stove is being moved, thus avoiding impediments to an even draft. Communicating with the oil-reservoir are water-tight wick-tubes C, provided with water-tight ratchet-wheel and shaft-tubes *c* passing from the wick-tubes to the outside of the chamber. These tubes prevent the oozing out of the oil from the wicks into the water, or the water from leaking into the wick-tubes. Near the top of these wick-tubes, and on each side thereof, are one or more rows of small apertures, c^1, to prevent the wick from charring or gas from generating. A small trough, c^2, is placed over the apertures to prevent the oil, should any escape, from running down on the outside of the wick-tubes. The sides of this trough are also perforated to admit air to the wick-tubes. The top of the stove is divided unequally by two lids being hinged to the partition *a*. The smaller lid D' forms the cover for the feed-opening of the oil-reservoir, while the larger one D covers the evaporating-chamber. The top can be either concave, convex, or flat, but I prefer the convex surface. An annular groove, *d*, is formed in the lids near their edge, for the purpose of catching and retaining any grease that may fall upon the lid. A collar, *d'*, which may be perforated, if desired, is also formed on the lid D, on which the illuminating-chamber E rests, being secured thereto by a hinge, *e*, and clamp *e'*. This collar, although not indispensable, is advantageous, as it enables me firmly to secure the illuminating-chamber, and increase the draft by increasing its height. It is obvious, however, that the frame of the illuminating-chamber can rest directly upon the lid D without the intervention of the collar *d'*. The central portion of the lid D is provided with an opening covered by wire-gauze, and perforated by two parallel slits corresponding in shape to that of the burners, and each opening is covered or surrounded by a cone or oblong air-deflector, *f'*. The mingled air and vapor is thus permitted to pass up freely through the lid to the burners. The bottom of the illuminating-chamber E extends as far down as the base of these deflectors. Inside of this chamber I arrange a diaphragm, G, somewhat in the shape of a Mansard roof, which forms what I term a combustion or flame chamber, F. This diaphragm is arranged just above the tops of the deflector *f'*, is perforated, and the perforations are surrounded by corresponding oblong flame-deflectors *g*, thus forming, as it were, a supplementary cone, to prevent the spreading of the flame, while admitting air to it freely from all sides. Hinged lids g^1 are arranged within the illuminating-chamber, provided with suitable handles g^2, by which they can be thrown over the deflectors *g*. When thrown back, these hinged lids or hoods g^1 allow the flame freely to pass upward; and when turned down, which is done when the flame is to be extinguished, they prevent gas or vapor and steam from rising through the illuminating-chamber.

Instead of using chimneys, as usual, I pre-

fer to employ an illuminating-chamber, E, closed at its sides, having parallel perforations *i* at its top for the escape of the heated products of combustion, corresponding to the burners and deflectors below.

By constructing the walls of this chamber of translucent material, I am enabled to get the benefit of the illuminating, as well as the heating, qualities of the flame; and by the use of the cone and the corresponding perforations in the top of the illuminating-chamber, I am enabled to keep the flames distinct without the use of a separate chimney for each flame, and I can use one burner without the other.

As the illuminating-chamber is hinged to the hinged lid of the stove, and as one or more of the sides of the chamber also may be hinged, it is obvious that access can readily be had to all parts of the apparatus.

The advantages and mode of operation of my improved stove will be obvious from the foregoing description.

I do not broadly claim the combination of an oil-reservoir with an evaporating-chamber, as that is not new.

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

1. The combination, in an oil-stove, of the oil-reservoir, the burners, and the evaporating-chamber, constructed with a centrally-perforated lid, and having its walls perforated above the water-line, and an inwardly-projecting flange also above the water-line, to prevent the splashing of the water through the ventilating-apertures, while freely admitting the passage of air to the burners, as set forth.

2. The combination, in an oil-stove, of the oil-reservoir, the evaporating-chamber having perforated side walls and a centrally-perforated lid, the burners, the deflectors *f'*, and a supplementary diaphragm, G, and its deflectors, these members being constructed and operating substantially as hereinbefore set forth.

3. The combination, in an oil-stove, of the oil-reservoir, the evaporating-chamber having perforated side walls and a centrally-perforated lid, the burners, the deflector *f'*, the supplementary diaphragm G, its deflectors, and the illuminating-chamber, these members being constructed and operating substantially as hereinbefore set forth.

4. The combination of the burners, the deflectors *f'*, the illuminating-chamber, the diaphragm G, its deflecting-cones, their hinged hoods, and their handles, these members being constructed and operating substantially as hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

HOSEA ALLEN.

Witnesses:
M. E. BASSETT,
T. F. FRANK.