D. G. HASKINS.

Gas Heater.

No. 98,767. Patented Jan'y 11, 1870.

Fig. 1.

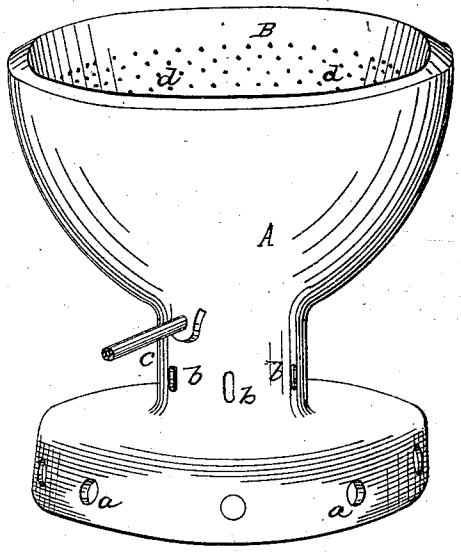


Fig. 3

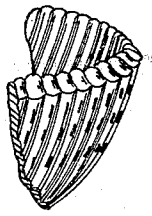


Fig. 2

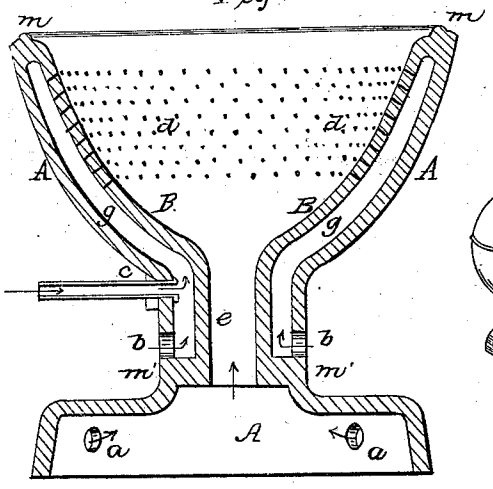
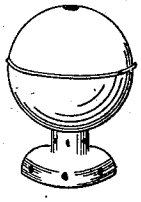


Fig. 4



Witnesses:
Charles F. Packard.
Charles F. Brown

Inventor
David G. Haskins
by his atty
Cameron Wright

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United States Patent Office.

DAVID G. HASKINS, OF CAMBRIDGE, MASSACHUSETTS.

Letters Patent No. 98,767, *dated January* 11, 1870.

GAS HEATER.

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, DAVID G. HASKINS, of Cambridge, county of Middlesex, and State of Massachusetts, have invented a Clay Gas Heater; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 represents my improved gas-heater, in perspective;

Figure 2 is a vertical section of the same; and

Figures 3 and 4 show modifications of the same.

My invention has for its object the utilizing of gas for the production of heat for laboratory, mechanical, culinary, and house-warming purposes; and

It consists in a chamber made of baked earth or clay, covered at the top, with openings at or near the bottom for the admission of both air and gas, and with perforations or slots in the top, and on one or both sides, for the escape of the mingled gas and air, together with an opening for the air to pass through the midst of the chamber without mingling with the gas until it has issued (burning) through the perforations or slots in the top and sides, where it has the effect to support combustion.

In the drawings—

A is the outer case, and, for convenience, has the form of a wine-glass, the base being provided with draught-holes *a a*, and the neck with holes *b b* and gas-inlet *c*.

The inner case B is placed within A, is provided with perforations *d d*, as shown, has tube-like extension *e* to base of outer case, and is a continuance of space in base, so that the draughts *a a* and space inside of hemispherical case B are connected, but there is no connection between tube *e* and space *g*, between inner and outer cases, which is closed at top *m* and bottom *m'*.

The passages through *a* and tube *e* to inside of case furnish draught for purposes of combustion.

Gas is taken in through *c*, fills space *g*, and is ignited inside inner case B, through the perforations *d*. Air is received to mingle with the gas and aid its combustion through draughts *b b*. This process gives a blue flame, coming through the perforated space of case B, so essential in heating.

The surface of the case B may be corrugated either vertically or horizontally, both for the purpose of presenting more surface and for the tendency when vertically to increase draught.

The perforations *d d* may be slots instead of round holes, and may be contained in outside case instead of inside case, but the action would be the same.

The shape of the heater is not essential, as shown, for it may be cylindrical or flat, but so long as the relative construction is preserved the result is the same.

The holes *b b* may be omitted, if desired, or when the perforations are so small and so numerous that the gas becomes sufficiently mingled with the air in its escape through them.

By covering the heater with a dome, as shown in fig. 4, a most intense heat may be obtained, useful in laboratories, while the simple form shown can be used for heating articles in ordinary kettles.

The size of my heater can be varied greatly, from a large size for use in laboratories, and for culinary and heating-purposes, to a heater for gas-burners, and for this last use it is particularly adapted, for the flame does not "jump down" to the gas-entrance, as in some of the heaters employed.

I make my heater of clay, for the reason that clay will retain the heat much longer than metal, while the heat given out by a clay conductive is much milder and more pleasing than by a metal conductive.

Having thus fully described my invention,

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

1. The combination of perforated inner case B with outer case A, substantially as herein set forth.

2. The combination of draughts *a a* with tube *e*, perforated inner case B, and outer case A, as herein described.

3. The combination of draughts *b b*, gas-inductive *c*, and space *g*, substantially as specified.

4. The combination of the last-named combination with cases A and B, tube *e*, and draughts *a a*, substantially as set forth.

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

DAVID G. HASKINS.

Witnesses:

CARROLL D. WRIGHT,

CHAS. F. BROWN.