(No Model.) 2 Sheets—Sheet 1.

J. SMITH & H. J. BOYD.

GAS STOVE.

No. 380,732. Patented Apr. 10, 1888.

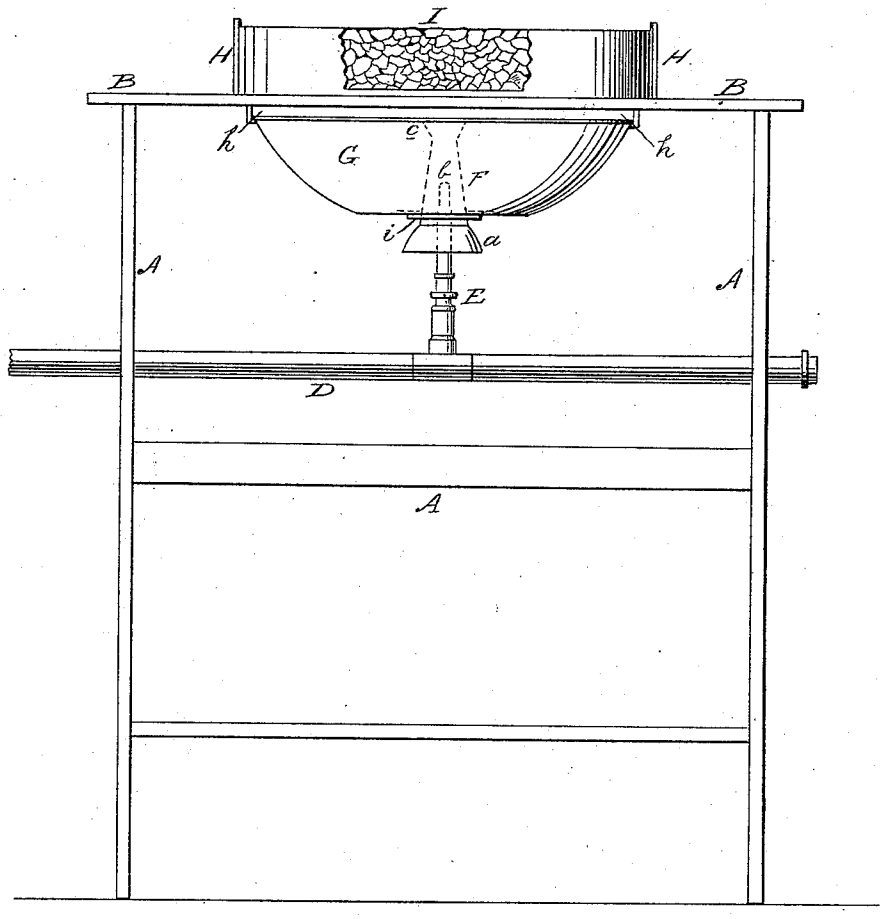


Fig. 1.

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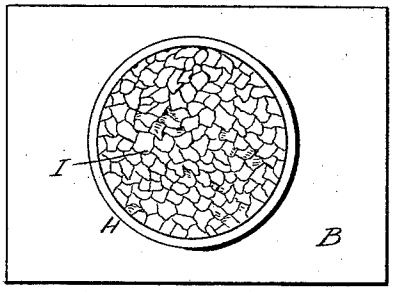


Fig. 2.

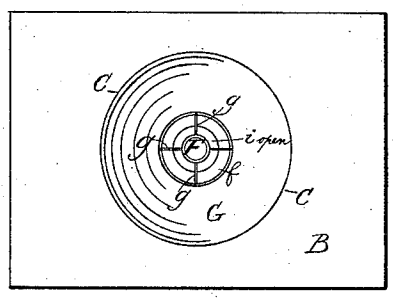


Fig. 3.

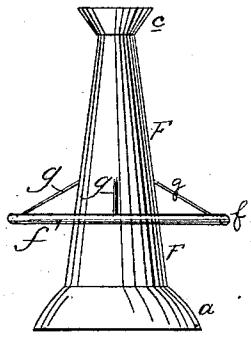


Fig. 4.

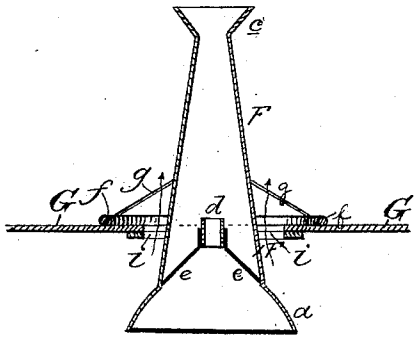


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES SMITH AND HARRY J. BOYD, OF LONDON, ONTARIO, CANADA.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 380,732, dated April 10, 1888.

Application filed August 1, 1887. Serial No. 245,889. (No model.)

To all whom it may concern:

Be it known that we, JAMES SMITH and HARRY J. BOYD, both subjects of the Queen of Great Britain, and both residents of London, in the county of Middlesex and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Gas-Stoves; and we hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in gas-stoves used for cooking and heating purposes; and it consists of improvements in the apparatus for rendering the flame from the burner pure and smokeless and delivering it in that condition to a bed of lava or pumice which acts as a spreader to the flame and attains a great heat, imparting it to the cooking utensil or the air, according as the stove is used for cooking or heating purposes.

In the accompanying drawings of our invention, Figure 1 is a front elevation of a gas-stove with our invention attached thereto. Fig. 2 is a plan view on top of same. Fig. 3 is also a plan view without the basket and bed of pumice. Fig. 4 is a side view of tube inclosing the burner. Fig. 5 is a sectional view of same, showing also the bottom portion of the basin in section.

A is the frame of a gas-stove.

B is the top plate, and C the open space therein, through which the heat of the flame proceeding from the burner ascends.

D is the gas-supply pipe, and E the cock, fitted with a burner, *b*, all these parts being of any ordinary or desired form of construction.

F is a metal tube, which is placed over the burner *b*, rising above it and descending below it, so as to inclose the burner in or near the center of the tube. This tube is used to purify the flame of the gas-burner inside it, and to intensify the heat by causing a current of air to draw up from beneath and surround the flame, so that the whole of the carbon is rendered combustible, producing a pure and smokeless flame with intense heat and economizing the consumption of gas. The tube is trumpet-shaped, as shown in drawings, and is open at top and bottom and through its entire length. The broad lower end terminates in an expanding flange, *a*, through which the outer air is fed from below to the flame of the gas-burner *b*. The small upper end of the tube terminates also in an expanding piece or flange, *c*, of smaller dimensions than the lower one, and from this the flame of the burner issues and is distributed in a broad circular form. The interior of the tube is shown in section, Fig. 5.

d is a ring which fits over the burner and holds the tube in place. *e e* are rods which connect this ring to the inside of the tube.

f is an outer ring attached to the outside of the tube by rods *g g*. This ring *f* rests upon the bottom of a basin, G, fitted below the opening C, and forms a further support to the tube. The upper rim of this basin G is fitted to the opening C, beneath which it is fixed, so as to leave a space, *h*, for an air-current between the two.

i is a circular opening in the bottom of the basin, through which the burner and its inclosing-tube F pass, and this opening *i* is made large enough to admit of the free passage of air from below.

The basin cuts off the cold air from the surface above it, and produces a draft through the opening *i*, surrounding the burner and tube.

Above the basin G is an iron basket, H, which is filled with a bed of pumice or lava, (marked I.) This acts as a spreader to the flame issuing from the tube F immediately beneath it, and attains a very high degree of heat from the action of the flame. It is so slow of combustion as to be practically incombustible, soon becomes incandescent, and retains its heat for a long time after the flame is extinguished, the surfaces of the broken pumice radiating the heat from one to another. It is also of a naturally-pure composition and free from all noxious fumes when heated, making the stove specially adapted for cooking and warming purposes.

Having thus described our invention, what we claim as new is—

1. In a gas-stove, the combination, with the burner *b*, the top plate, B, having a circular opening, C, and the metallic basket H, supported on said plate and containing a bed of pumice or lava, of a metallic basin, G, having

a central lower opening, *i*, and attached to the under side of the top plate beneath its circular opening C in such a manner as to leave an intermediate air-space, *h*, and a trumpet-shaped tube, F, having expanded ends *a* and *c* and supported in the basin-opening *i* around the burner and extended above the same, substantially as described.

2. In a gas-stove, the combination of the top plate, B, having a circular opening, C, the metallic basket H, supported above said opening and containing a bed of pumice or lava, the metallic basin G, having a central lower opening, *i*, and supported beneath the opening C, so as to leave an air-space, *h*, between the top plate and the rim of the basin, the trumpet-shaped tube F, having expanded ends *a c* and supported vertically in the basin-opening *i* in such a manner as to extend from the top of the basin to a point beneath its bottom, the ring *d*, supported within said tube, and the burner *b*, extending through said ring and into said tube, substantially as described.

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