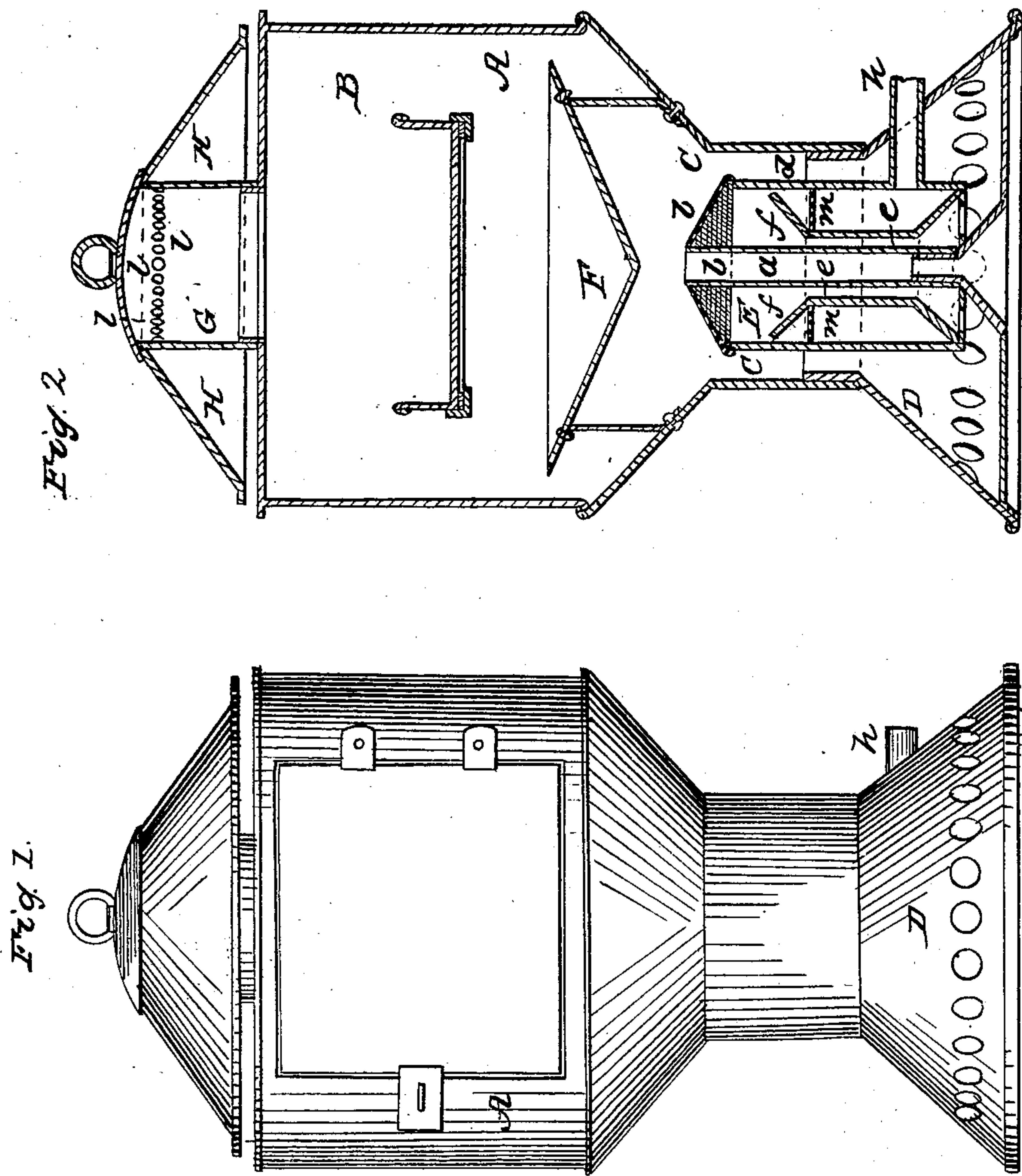


P. MIHAN.

Gas Stove.

No. 17,767.

Patented July 7, 1857.



UNITED STATES PATENT OFFICE.

PATRICK MIHAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND ROBERT B. FITTS, OF SAME PLACE.

GAS-STOVE.

Specification of Letters Patent No. 17,767, dated July 7, 1857.

To all whom it may concern:

Be it known that I, PATRICK MIHAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Gas-Stove; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 a vertical and transverse section of the same.

The burner I employ in the said gas stove, like the common Argand gas burner, has an internal air current conduit and is provided with a frusto-conical or tapering perforated or wire gauze cap on which the gas and air are to be burned.

The nature of my invention consists in combining with such tapering cap, or with the same and its gas separator an inverted conical or tapering deflector so arranged underneath the cap as not only to spread or deflect the gas against the lower part of the cap, but form an expansion chamber for the air which mixes with the gas to expand against the entire lower surface of the cap.

It further consists in applying to or arranging on the top of the oven of the stove a perforated top, and a secondary top arranged so as not only to be capable of receiving a water kettle so as to enable it to be heated but so as to cause the waste heat from the oven to pass over and in contact with the entire top surface of the oven in order to improve the baking powers thereof.

In the drawings A denotes the body or outer case of the stove as made with an oven B and an air conductor C resting on a perforated base D. Within the space C the air and gas burner E is placed concentrically, as shown in Fig. 2. This burner is constructed so as to have an internal air conduit or passage *a* by which air is conducted into the flame which may be generated on the perforated cap *b*. This cap is made of wire gauze and in the form of a conic frustum, and extends from the outer case *d* of the burner and with an inclination toward and up to the tube *a*, which is open at both ends.

Within the case *d* and surrounding the tube *a* is another vertical air passage or tube *e*, *e* on the top of which an inverted frusto-conical deflector *f* is fixed, the same being made to extend nearly to the base of the cap *b*. The deflector *f* also makes immediately

below the cap *b*, and with the same, a chamber for the air which may pass up the conduit *e* to expand in and strike against the entire under surface of the cap *b*. The gas enters the case E by a pipe or conductor *h*. The burner is also supplied with an outer current of air which flows up through the air conductor C.

The flame raised on the burner passes against an inverted conical bottom F by which the heat is disseminated toward the sides of the oven; after passing through the oven it escapes through a flue pipe or conduit G, erected on the top of the same and constructed open at top and bottom and with its sides perforated with holes as shown at *l*, *l* in Fig. 2. Extending downward from the top of the pipe G and over the top of the oven, as shown in Fig. 2, is a conical secondary top H whose lower edge is raised a short distance from the top of the oven in order to allow the heat to pass off between it and the said top and escape into the atmosphere after it has been thrown in contact with the upper surface of the primary top.

Across the case E and directly under the deflector *f* thereof I arrange a separator diaphragm or partition *m*, the same being perforated with numerous fine holes for the purpose of dividing the gas into minute streams and equalizing its flow up around the under surface of the deflector *f*.

I have found that a conical cap *b* is far preferable to a single disk or flat top to the burner, as it not only exposes a greater surface for the gas to burn on, but improves its combustion. I have also found that when a conical cap is used, the combustion of the gas is vastly improved by causing it to impinge directly against the lower portions of the cap, while the air to mix with the gas is thrown against the entire lower surface of the cap. Under such circumstances, the whole top surface of the cap will be covered by the flame of the commingled air and gas; whereas, if the gas is suffered to flow indiscriminately with the air against the cap or without first being discharged in a body against the lower part of it, the flame will cover only a part of the cap, viz, generally about the upper third or half of it.

In regard to the action of the products of combustion of the air and gas, they are suffered to pass directly into the oven, and

after flowing in contact with any articles placed therein, they escape through the pipe G and the perforations of its sides, thence under the secondary top H, and by the latter
5 are again brought into contact with the primary top of the oven, which, absorbing heat therefrom, causes the oven to bake to better advantage. Besides, the open pipe G affords a means of supporting a water
10 kettle, which, being placed in it, will be heated by the escaping products of combustion.

What, therefore, I claim as my invention, is—

15 1. The combination and arrangement of the deflector *f*, with the conical or tapering cap *b*, the gas-receiving case E, and the air

passage *c*, the whole being substantially in manner and so as to operate as described.

2. I also claim the combination and ar- 20 rangement of the perforated open tube or conductor G and the secondary top H, with the oven substantially as specified, and so as to operate therewith and not only improve its baking powers, but render it capable of 25 applying heat to a kettle or other article placed in or on said part or tube G, as explained.

In testimony whereof, I have hereunto set my signature.

PATRICK MIHAN.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.