Sheet 1 - 2 Sheets.

H. B. Musgrave,

Gas Stove,

No. 14,064, Patented Jan. 8, 1856.

Fig. 1.

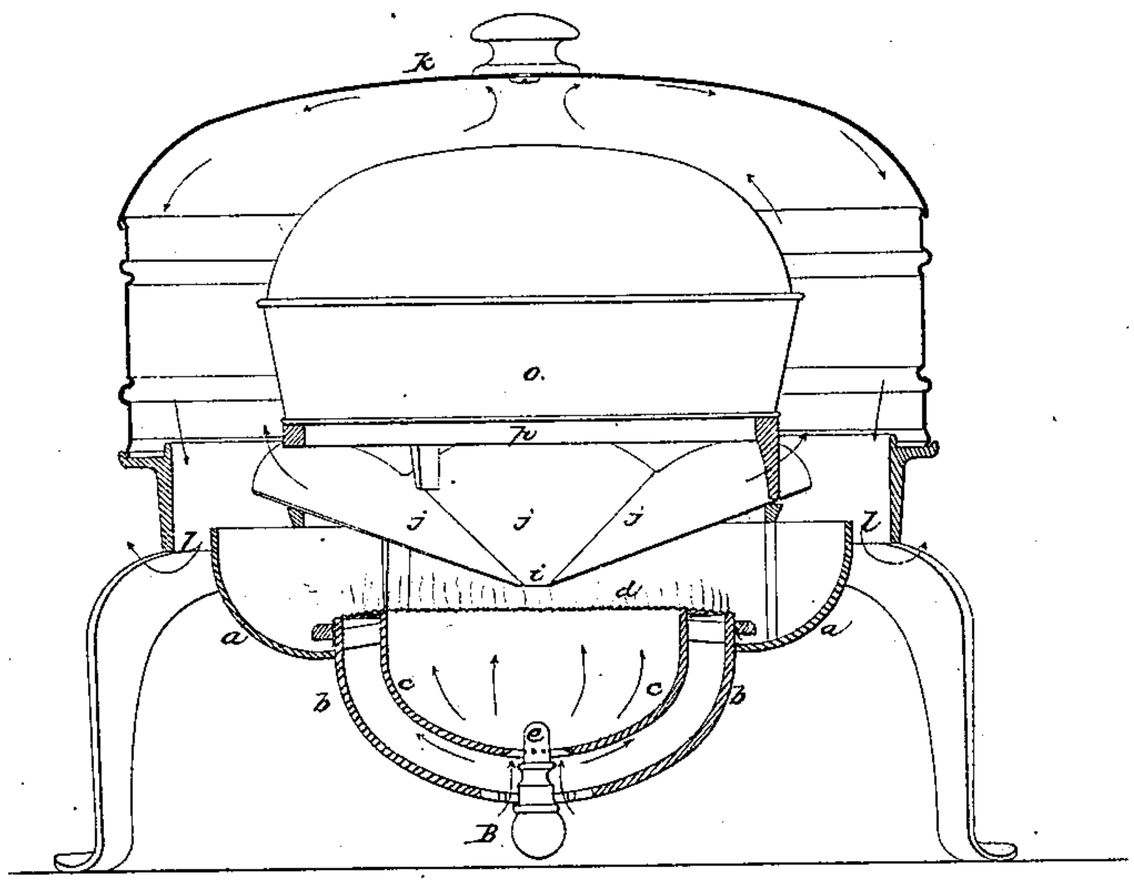


Fig. 3.

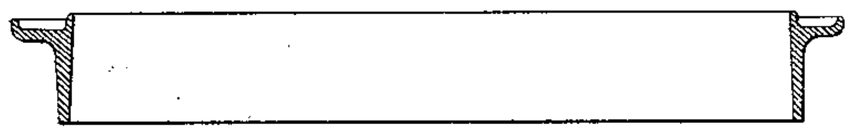


Fig. 2.

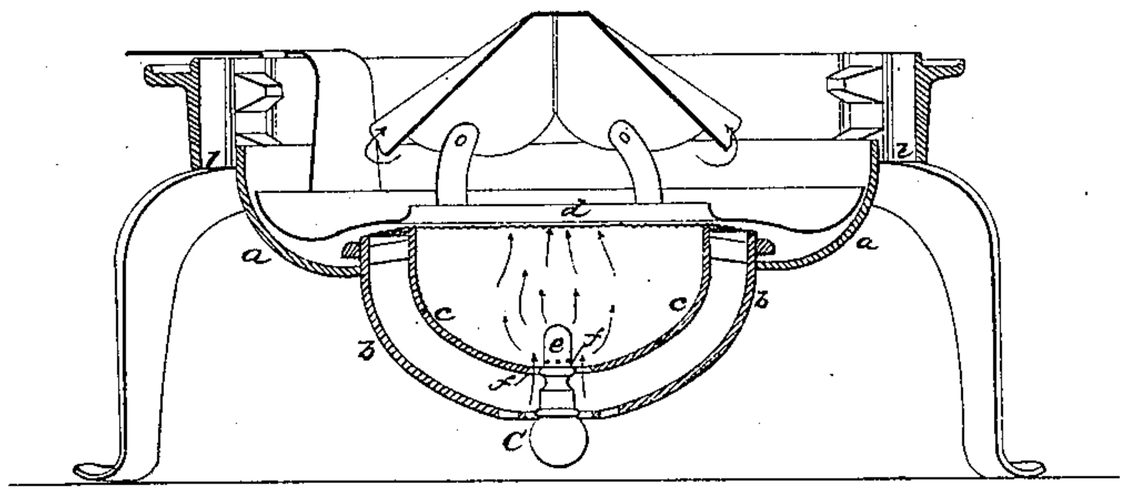
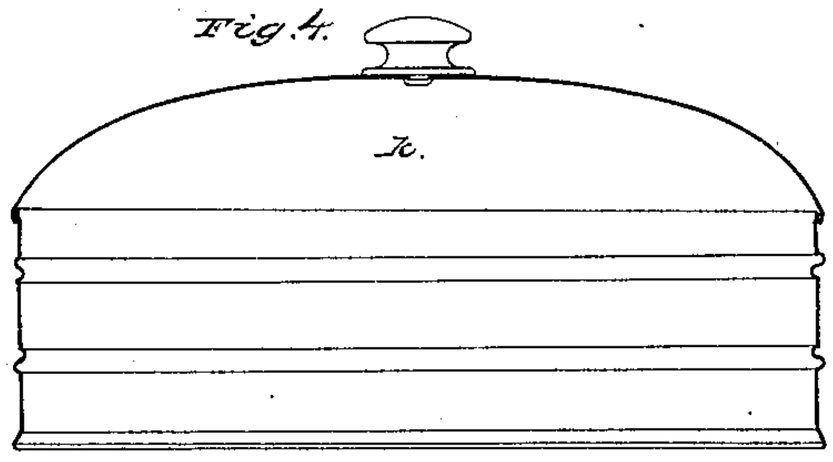


Fig. 4.



Sheet 2 - 2 Sheets.

H. B. Musgrave,

Gas Stove.

No. 14,064. Patented Jan. 8, 1856.

Fig. 6.

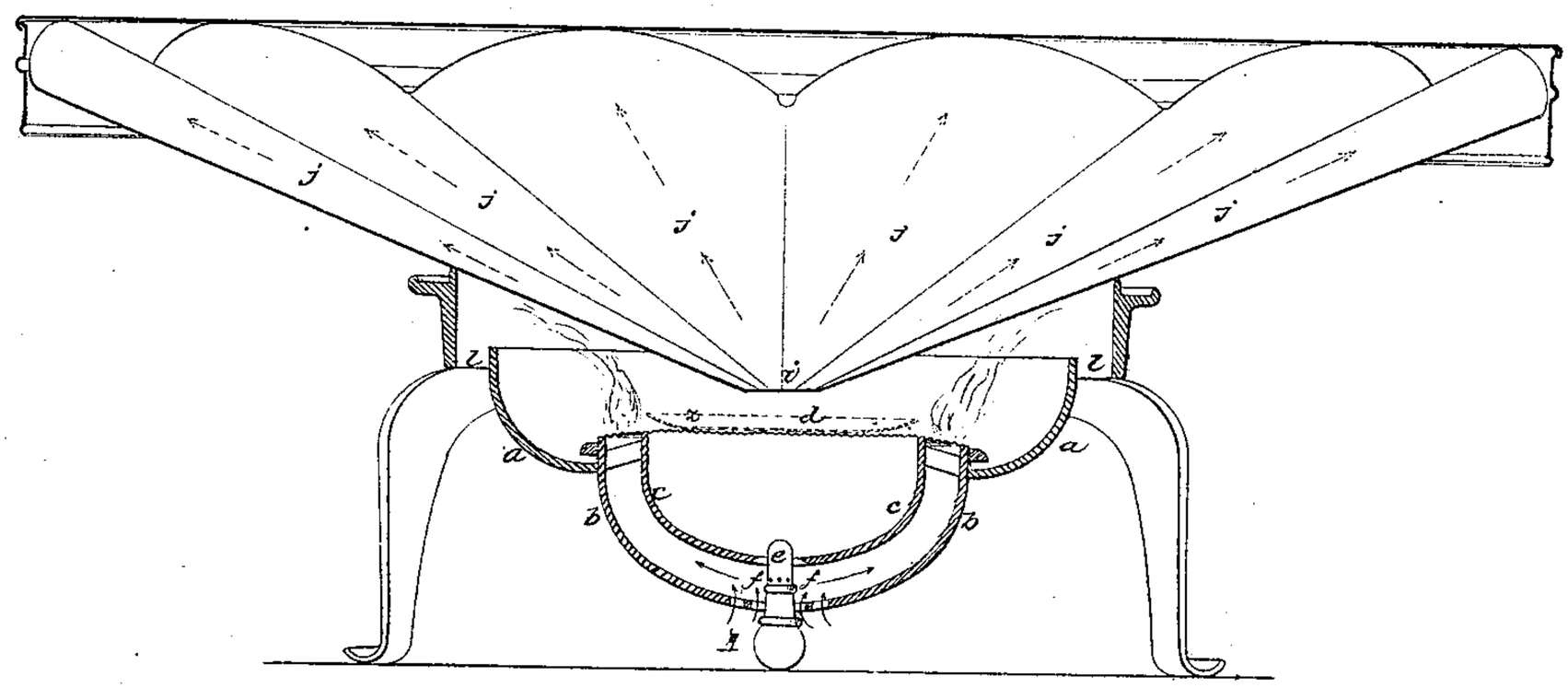


Fig. 5.

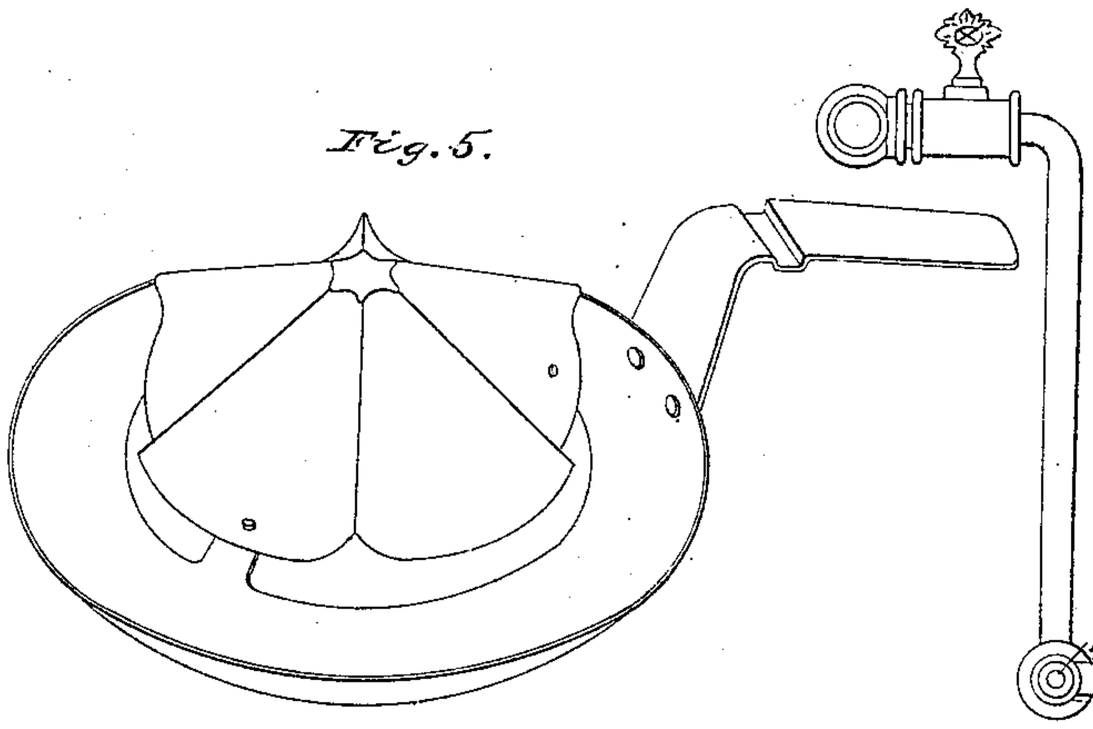


Fig. 7.

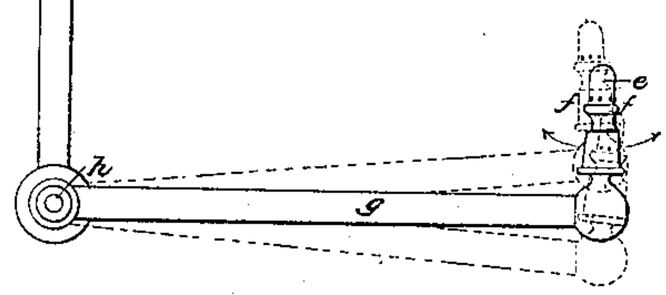
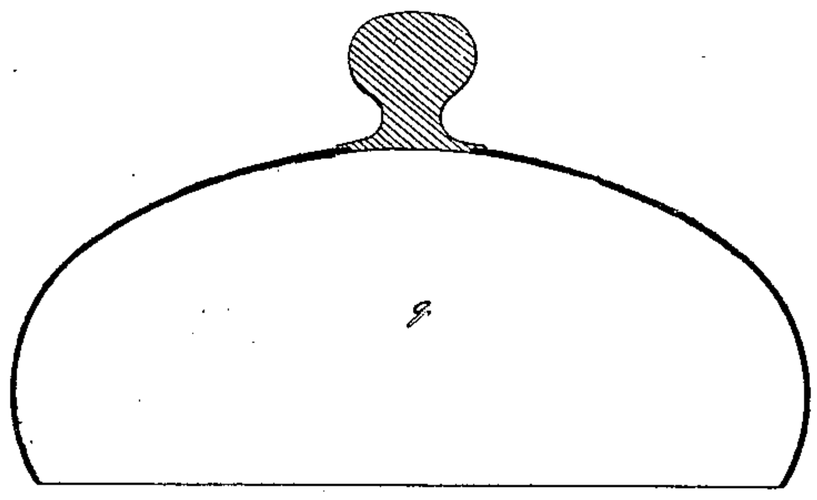


Fig. 8.



UNITED STATES PATENT OFFICE.

H. B. MUSGRAVE, OF CINCINNATI, OHIO.

GAS COOKING-STOVE.

Specification of Letters Patent No. 14,064, dated January 8, 1856.

To all whom it may concern:

Be it known that I, HIRAM B. MUSGRAVE, of Cincinnati, Hamilton county, Ohio, have invented a new and Improved Apparatus for Cooking and Heating by Gas and called by me a "Gas-Stove;" and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

My invention has for its objects complete equalization and economy of heat, with facility for applying any variety of concentrated diffused, or ring flame, that the cooking may require. In the accompanying drawings Figure 1 represents by axial section my arrangement for baking, my radial deflector being employed. Fig. 2 represents by axial section my stove as arranged for broiling. Fig. 3 is an axial section of a ring occasionally employed for increasing the height of the oven space. Fig. 4 is an axial section of a sheet iron dome or cover. Fig. 5 is a perspective view of the broiling cone C. Fig. 6 is an axial view of my radial deflector on a scale suitable for room warming. Fig. 7 is a detached view of the burner. Fig. 8 is an axial section of my glass dome or heat reservoir.

A ring (*a*) somewhat dished and contracted at its lower margin supports at that part and opens into a funnel (*b*) which with the ring (*a*) may be either of spheroidal form as represented or conical. Within the funnel (*b*) is fixed concentrically a smaller and similar one (*c*). Across the mouth of this double funnel is stretched a disk of wire gauze (*d*). The funnels (*b c*), being open at bottom, admit the nozzle (*e*) of a gas burner. This nozzle has its vents (*f*) arranged around its sides some distance below its top. The pipe (*g*) bearing the nozzle is hinged (*h*) so as to be capable of being raised or lowered at will, the object being to enable the form and character of the flame to be varied in manner as follows.

When it is desired to have a ring or annular flame as in roasting and baking the burner is placed at such a height as to bring the vents opposite the space between the two funnels as at A. When it is desired to condense the ring flame and positively prevent any issue of gas through the central portion of the gauze a deflecting disk (see dotted lines *z*) of any desired size may be laid upon the wire. When a diffused mellow flame (suitable for griddle cakes) is desired the vents are brought opposite or a little below the lower edge of the inner funnel which dividing the jet causes some of the gas to flow outside and some inside of the said inner funnel, resulting in a low flame over the entire surface of the wire gauze disk as at B. When again it is desired to concentrate the flame at the center of the disk (as for rapid boiling, laundry purposes, &c.) the vents are brought clear above the lower edge of the inner funnel as at C.

In the drawings the course of the gas is represented by red arrows, and that of the entering air by blue arrows, while that of the heated air and volatile residuum of combustion are represented by dotted arrows. It will be seen that the vertical current of entering air strikes the jets of gas at right angles or nearly so so that the two become quickly and intimately blended some distance below the place of ignition. Such blending is found to result in a very complete and clear combustion free from smoke and producing the maximum effect with a given amount of gas.

(*i j*) represents one of my radial heat deflectors and is formed by raising a circular plate into a conical or pyramidal form. A number of flutes (*j*) all emanating from the center serve as so many channels which convey heated air equally in every direction, toward the circumference, and guard the article being cooked from a too intense heat immediately over the center of the flame. The form of deflector above described is that which I have found most efficient, but I have accomplished a fair result by the use of a simple flat or rounded disk of proper height and dimensions. The heated air rising equally from all parts of the margin of the deflector passes over the viands, and meeting with the top of the dome (*k*), is thence by its concavity deflected equally downward and outward to the annular aperture (*l*) below the rim of the dome through which aperture it escapes. Thus the dome, besides its service as a deflector, becomes a reservoir of heated air. For the finer kinds of cooking I provide a dome (*q*) of glass,

which is preferable to metal because of its slow heat conducting powers, and because by its transparency the cooking can be constantly watched without wasting the heat by elevating the dome. It is observed that a cloud of steam obscures the cooking, but the heat of the dome soon rising above the dew point the glass becomes and continues perfectly clear.

(*o*) represents a baking pan of circular area, and resting on a trivet (*p*) set in the grooves of the deflector.

Fig. 6 represents the conical deflector on a larger scale for warming apartments.

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

In combination with the concentrically arranged gas deflectors (*b* and *c*), the gas burner with lateral vents and capable of vertical adjustment, or equivalent devices, for the purposes specified.

In testimony whereof, I hereunto set my hand before two subscribing witnesses.

H. B. MUSGRAVE.

Witnesses:
GEO. H. KNIGHT,
J. R. BENNETT.