

H. MATHEWS.
Cooking Stove.

No. 6,787.

Patented Oct. 16, 1849.

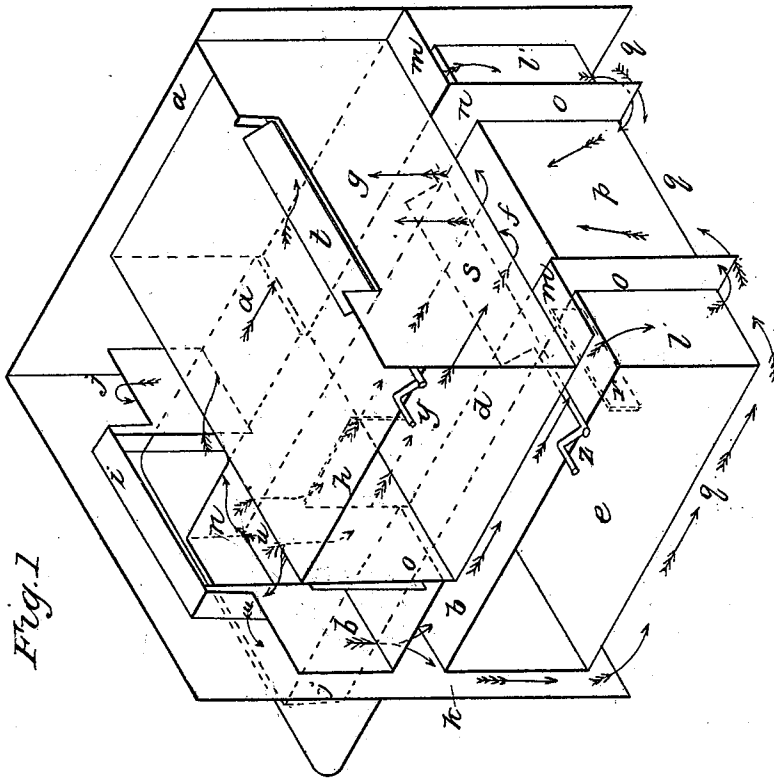


Fig. 1

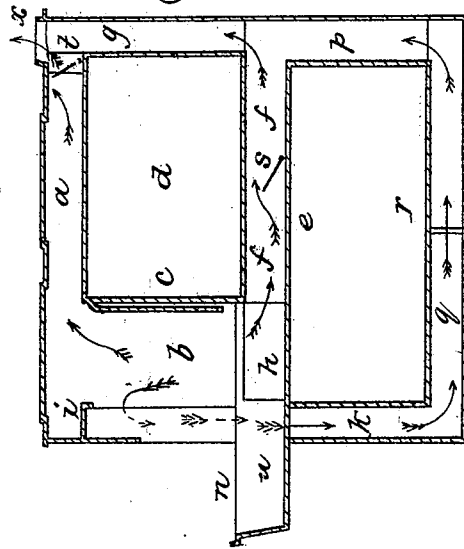


Fig. 2

UNITED STATES PATENT OFFICE.

HANNIBAL MATHEWS, OF CINCINNATI, OHIO.

COOKING-STOVE.

Specification of Letters Patent No. 6,787, dated October 16, 1849.

To all whom it may concern:

Be it known that I, HANNIBAL MATHEWS, of Cincinnati, Hamilton county, Ohio, have invented new and useful Improvements in Double-Oven Stoves; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing making part of this specification, in which—

- 10 Figure 1 is an isometrical view of the stove with the top, bottom, back, and one of the side plates removed for the purpose of showing the arrangement of flues, fire-place, dampers, guide-plates and ovens.
15 Fig. 2 is a central vertical section from front to back.

The nature of my improvements in stoves consists in arranging the flues in a double-oven stove, the stove having the ordinary top or boiler flue and also having the flue between the ovens divided into three compartments, the side flues of this division being entered by diving flues opening at the upper front corners of the stove aside of the front door of the fireplace, carried down the back part of the lower oven and discharged at its bottom and back corners; the bottom flue being an open one with a central stay or guide plate in the line of the breadth of the stove, so as to compel the draft to hug the sides and corners of the stove; the flue at the front of the lower oven being an open one and the flue at the back of the upper oven being also an open one; so that by throwing down a damper in the top or boiler flue and a damper in the middle flue of the flues between the ovens, thus opening the said flues the heat can be applied almost wholly to the upper oven, as in a premium stove (so called); or by closing said flues, by throwing up these dampers, the heat can be thrown around both the upper and lower ovens and be distributed in the most equable manner, the top or boiler flue (the whole of the said flue being in front of its damper) and the middle flue of the flues between the ovens (both before and behind its damper) being converted more or less into hot air chambers and the draft being forced down the front diving flues and around the lower oven at the sides of the stove through the side flues of the flues between the ovens and at the back and corners of the lower oven and down the open flues in front of and beneath the lower oven

and up the middle flue of the flues back of the lower oven, the open flue back of the upper oven and thence up the stack or pipe.

In the drawings (*a*) is the top or boiler flue of the usual form and dimensions and has a damper (*t*) by which it is shut off from the stack and when shut off it is readily perceived that it becomes a hot air chamber.

(*b*) is the hearth or fire-place formed in the usual way and with an air chamber (*c*) between its back and the upper oven, to prevent warping and overheating.

(*d*) is the upper oven constructed in the usual way.

(*e*) is the lower oven also constructed as usual.

(*f*) is the middle compartment of the flue space between the ovens and forms the flue leading direct from the bottom of the fire-place and discharging into the open flue (*g*) at the back of the upper oven, thus with the top flue (*a*) enveloping the central portion of the upper oven (*d*) after the fashion of the oven in the premium stove, so far as these two flues in conjoint action are concerned. The flue (*f*) is furnished with a damper (*s*) by which it is shut off from the flue (*g*) and consequently the stack, and becomes hot air-chambers, the one in front and the other in rear of the damper (*s*) which I prefer to locate some distance within the flue.

It being the law of heat to ascend and it being certain that if the sides and the bottom of a stove are kept to the required degree of heat the center of the stove cannot be at a lower temperature I have concluded that making the top or boiler flue (*a*) and the middle flue (*f*) hot air chambers (by closing them by means of the dampers (*s* and *t*) when I wish to use both the upper and the lower ovens and therefore desire to throw as much of the heat of the fire as possible under them) will subject them (the flues (*a* and *f*) or air chambers) to ample heat for all practical purposes.

From the foregoing it will be readily seen that when I use the upper oven alone the flame is made to lick around it and pass at once to the stack. The draft being so direct toward the stack there can of course be but little heat applied to the lower oven, except by the conducting power of the iron.

When both ovens in my stove are required for use the first step taken is to throw up

both dampers (*s* and *t*) and close the flues (*a* and *f*). This act brings into play the front descending flues (*j*) which drive down the front corners of the stove aside the door way (*i*) and lead to the open flue (*k*) in front of the lower oven, and the side flues (*l*) between the ovens and their dividing portion (*l'*) at the back of the lower oven. The flue (*k*) leads to the open flue (*q*) beneath the lower oven; in which flue (*q*) a guide plate (*r*) is so located in the center and in the line of the breadth of the stove as to make the draft hug the corners of the flue (*q*).

It will be seen from the drawings that the front diving flues (*j*) are common to the flues (*e* and *e'*) and (*k* and *q*). It will be seen that the lengths of the flues (*l* and *l'*) and (*k* and *q*) are equal and that they discharge into the ascending flue (*p*) which discharge itself into the flue (*q*) and this into the stack (*x*). Compelling the draft to hug the corners of the stove in this way, it follows that the central parts of the stove cannot be of less temperature. The dampers (*s* and *t*) being closed the heat from the fire has direct access to the air chambers thereby formed in front of the dampers. The heat and draft then dip down the flues (*j*, *k*, *l*, *l'*) along the flue (*q*) and up the flue (*p*) and the flue (*q*) to the stack (*x*). The plates (*n*) by extension form the sides of the ash-pan (*u*) to which the hearth-plate is cast in the usual way. Handles (*y* and *z*) project through the side plate of the stove

in the usual way for the purpose of operating the dampers (*s* and *t*).

Having thus fully clearly and exactly described by improvements in stoves, what I claim therein as new and desire to secure by Letters Patent is—

Constructing and arranging the top or boiler-flue (*a*) the middle flue (*f*) and the side flues (*l*) of the flues between the ovens, and the corner flues (*l'*) at the back of the lower oven so that by opening the dampers (*t*) and (*s*), the upper oven (*d*) can be rendered operative alone, or by closing the same dampers (*t*) and (*s*) be operated in connection with the lower oven (*e*) the flues (*j*), (*k*) (*l*) (*l'*) and (*q*) and guide plate (*r*) being so constructed and arranged that the heat and draft will be compelled to pass along the sides and corners of the stove when these flues are thus or in an equivalent manner called into action; the heat being thereby most equally distributed as the hot draft is thus made to traverse an equal distance both above and below the lower oven and also surround the center of the stove, and of course keep the said center at the same temperature as the sides and corners; the whole being arranged, constructed and combined in the manner and for the purpose described.

HANNIBAL MATHEWS.

Witnesses:

G. H. KNIGHT,
THOS. G. CLINTON.