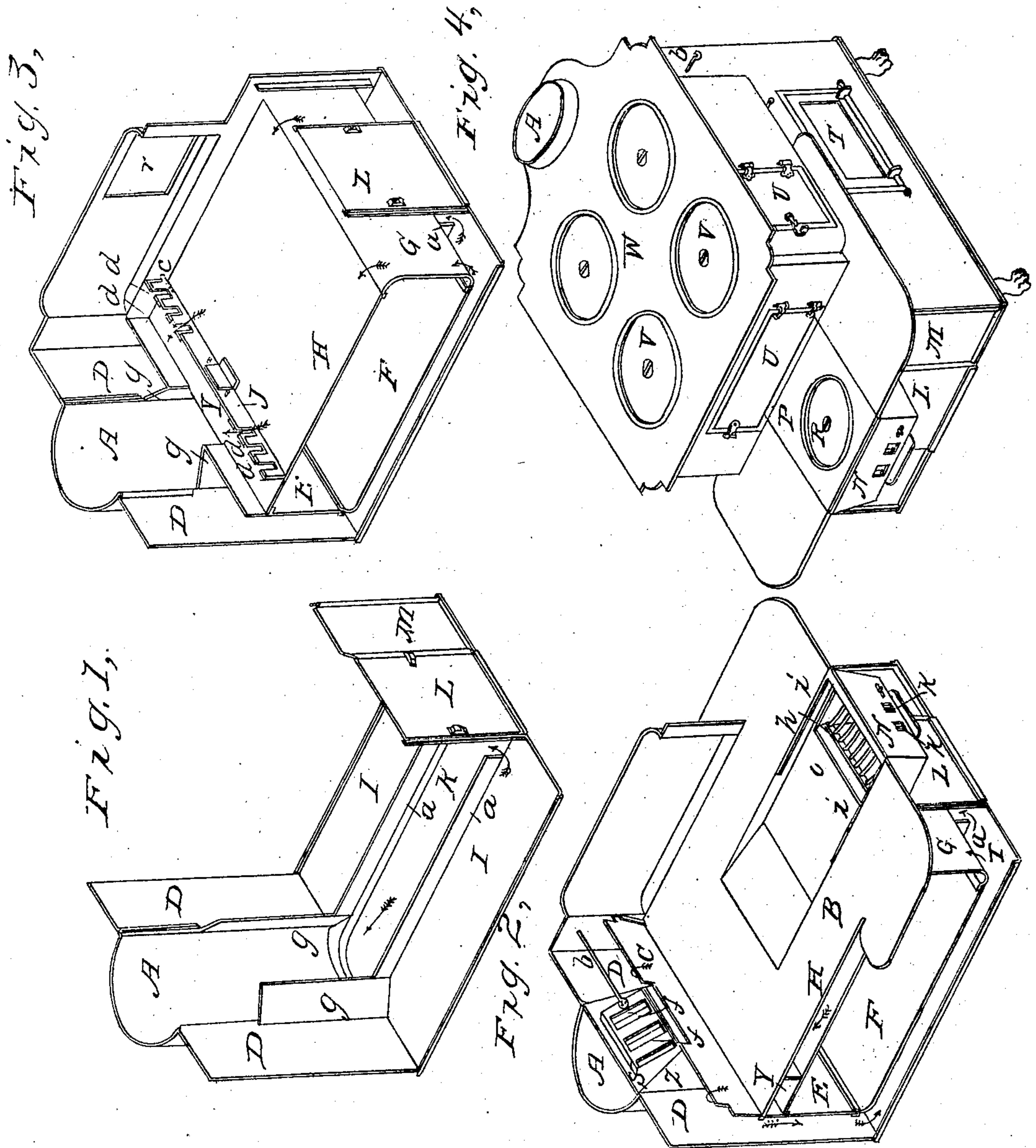


MOREHOUSE & WILLARD.

Cook Stove.

Patented May 1, 1847.

No. 5,089.





# UNITED STATES PATENT OFFICE.

BETHUEL MOREHOUSE AND W. W. WILLARD, OF SYRACUSE, NEW YORK.

## COOKING-STOVE.

Specification of Letters Patent No. 5,089, dated May 1, 1847; Antedated December 18, 1846.

*To all whom it may concern:*

Be it known that we, BETHUEL MOREHOUSE and Wm. W. WILLARD, of Syracuse, in the county of Onondaga and State of New York, have invented a new and Improved Cooking-Stove; and we do hereby declare the following to be a full, clear, and exact description of the construction and operation thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1, 2, and 3, are perspective views, showing the formation and arrangement of the various internal parts, and Fig. 4, is a perspective view of our improved cooking-stove complete.

The nature of our invention consists in so arranging the flues and combining them with the fire chamber, that the gaseous products of combustion will pass from the fire chamber down the rear side of the oven and under the bottom to the front of the same, in side flues, at which point, one-third the volume in each side flue enters a central flue between them, and returns back under the oven, and up the central portion of the back of the same, to the smoke-pipe; the remaining portion of the heat and gases pass up the front side of the oven, and over the top of the same (between the hearth plate and top oven plate), to the smoke-pipe. By which arrangement, the proper quantity of heat is distributed to the bottom, sides, and top of the oven; and may be graduated to suit the different articles to be baked by means of valves.

The same letters refer to corresponding parts in all the figures.

B, is the hearth plate at the bottom of fire chamber.

C, is the bridge plate resting on the rear end of the hearth plate, forming the rear end of the fire chamber.

D, D, are vertical side flues at the back of the oven (between the back plate E, of the oven, and the back plate of the stove,) divided from the central discharge flue A, by the vertical division plates *g, g*, and the cap Z, resting upon the same. The cap Z, also separates the fire chamber from the central flue A, save when the apertures *f, f*, in front of the same, are opened by moving the sliding valve S, by means of the handle *b*.

F, is the bottom plate and G, is the front plate of the oven.

I, I, are horizontal side flues between the

bottom plate of the oven and the bottom plate of stove, connecting the lower ends of the flues D, D, with the flue space in front of the oven.

K, is a central flue divided from the flues I, I, by the division plates *a, a*, on which the oven rests; the flue K, connects the vertical discharge flue A, with the flue space at the front of the oven.

L, is a vertical plate rising from the front end of the bottom plate of the stove, to the hearth plate, and forming the central portion of the front of the stove; the remaining portion of the front of the stove, is formed of the two flue doors M, M, placed on each side of L, for the purpose of giving access to the flues when they require cleaning. The flue space between the front of the stove and the front oven plate G, communicates with the flues under the oven, and with the flue space H, above the oven (between the hearth plate, and top oven plate).

J, is a sliding valve near the rear end of the flue space H, for opening or closing the side apertures *d, d*, leading from the flue space H, to the space Y, which communicates with the discharge aperture A; and also for closing up the central portion of the flue space between H and Y.

N, is a grate box suspended to the under side of the front projecting end of the hearth plate B.

*h*, is a grate secured within the same.

O, is a recess in the hearth plate extending from the box N, into the fire chamber.

*i, i*, are ledges on each side of O, on which the plate P, rests and slides.

R, is a griddle closing an aperture in plate P, over the box N, for the reception of a boiler; fire can be drawn from the fire chamber into the box N, for the purpose of baking cakes on the griddle R, or for boiling a kettle in the aperture covered by the same; or in the summer time, a fire of coals can be made in the box N, for cooking purposes, when the remainder of the stove is not required. Air is admitted into the fire chamber through the apertures *k, k*, in the front of box N; or by drawing forward the sliding plate P, so as to leave an aperture under the front fire door U.

T, is one of the oven-doors, having sheets of mica inserted into the same, for the purpose of enabling a person to observe the progress of the baking process, without opening the oven doors.



W, is the top plate of the stove.

V, V, V, V, are covers to the boiler apertures in the same.

5 c, is the handle attached to the valve J, by which it is operated.

The course of the flame and gaseous products of combustion from the chamber of combustion to the central discharge flue is indicated by the arrows in the drawings; 10 passing over the bridge plate C, into the flues D, D, descending these into the flues I, I, they pass to the front into the common flue space between the front plate of the oven, and the front of the stove; here one- 15 third of their volume passes from each side flue (I, I,) into the central flue K, and returns back under the oven and up the center of the back of the same, to the discharge flue A; the remaining two-thirds of 20 the heated gases pass up the flue space in front of the oven into H, and are drawn along the sides of the same through the apertures d, d, into the space Y, from which they pass into the discharge flue A. In 25 starting a fire, when a powerful draft is required, the apertures f, f, are opened, leading from the fire chamber directly into the discharge flue A; the same is also done when the oven is not required to be heated. By 30 closing the apertures d, d, the gaseous products of combustion will pass from the side flues I, I, into the central flue K, and return

in the same to the discharge flue A, thereby converting the flue space at the top and front of the oven, into a hot air chamber, or 35 dumb flue.

When a larger amount of heat is required at the bottom of the oven, and a less amount at top, it is regulated and adjusted by partially closing the apertures d, d; thereby 40 throwing a larger amount of heat under the oven, (through the return flue K,) and a smaller amount over the top of the same; and if necessary, converting the flue space at the front and top of the oven, into a 45 dumb flue, or hot air chamber, as above set forth.

Having thus fully described the construction and operation of our improved cooking-stove, what we claim therein as new, 50 and desire to secure by Letters Patent, is—

The arrangement and combination of the side flues D, D, and I, I, the central return flue K, and the flue space in front and at the top of the oven, with the fire chamber, the 55 apertures d, d, the valve J, the space Y, and the discharge flue A, substantially in the manner and for the purpose herein set forth.

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Witnesses:

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