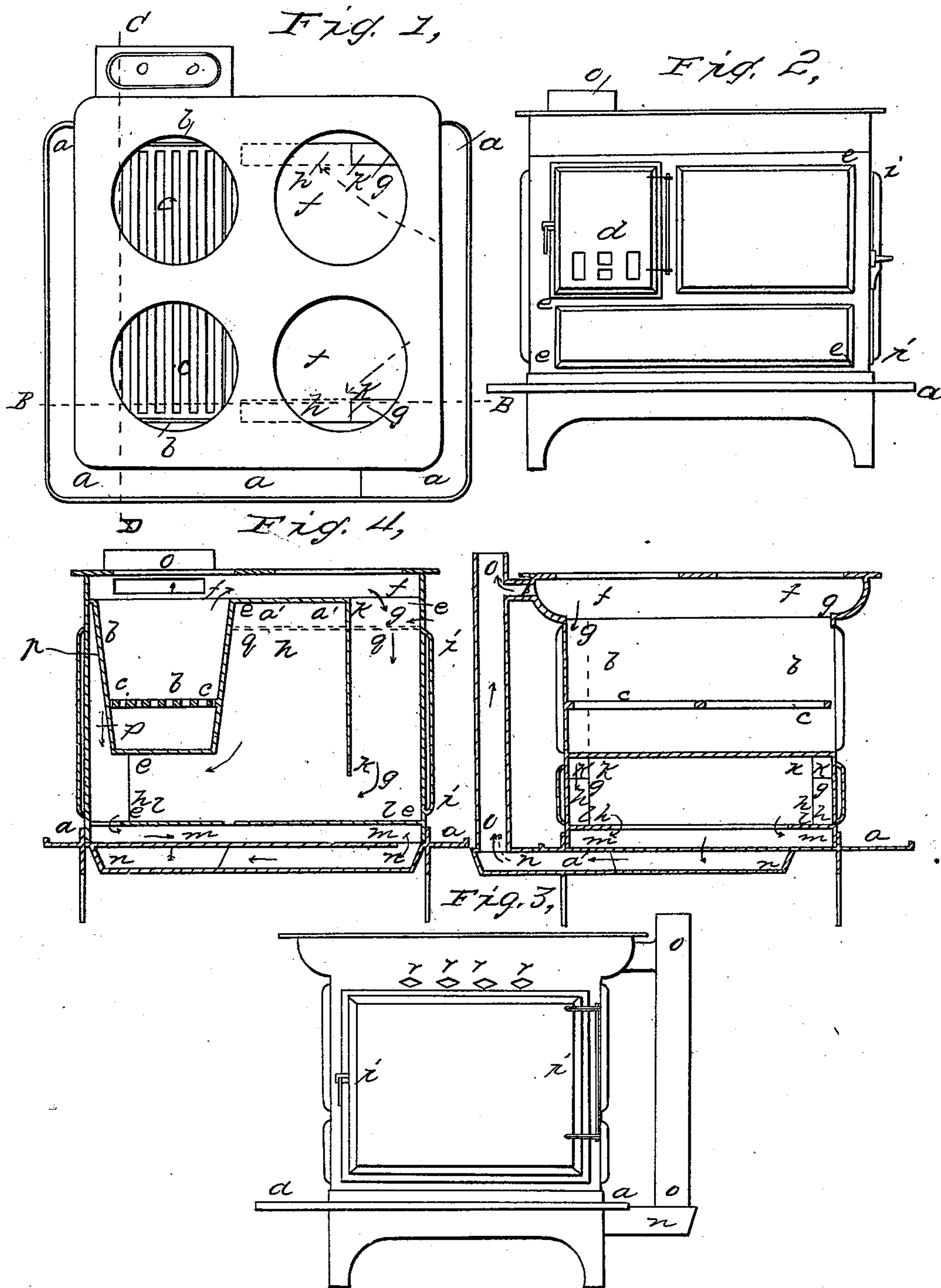


G. S. BOSWORTH.

Cook Stove.

No. 5,439.

Patented Feb. 8, 1848.





# UNITED STATES PATENT OFFICE.

GEO. S. BOSWORTH, OF BOSTON, MASSACHUSETTS.

## COOKING-STOVE.

Specification of Letters Patent No. 5,439, dated February 8, 1848.

*To all whom it may concern:*

Be it known that I, GEORGE S. BOSWORTH, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cooking-Stoves, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others of a similar class, together with such parts or combinations as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1, is a plan. Fig. 2 is a front elevation. Fig. 3, is a side elevation. Fig. 4, is a vertical section taken in the plane of the line A B, Fig. 1, and Fig. 5 is a vertical section taken in the plane of the line C D, Fig. 1.

The object of my improvements, is to exhaust or extract, as much as is possible, of the heat contained in the smoke and other products of combustion, in their passage from the fire-chamber to the discharging flue of the stove, and make such heat economically available, principally about the oven, in performing the various cooking operations. So effectually is this heat extracted by my improvements, that, when the largest quantity of fuel which the fire-chamber will safely contain, is in perfect combustion therein, the hand may be continuously and harmlessly held upon the exterior of the discharging flue.

The several plates of the stove are secured together in any suitable manner, and there is a hearth *a a a a* on three sides of the same as seen in the drawings.

*b b b b* is the fire-chamber, extending across the front of the stove and over one portion or the rear of the oven. Said fire chamber having a grate *c c*—and a door *d* all arranged as shown in Figs. 1, 2, 4, 5.

The oven *e e e e e* is of the irregular shape shown in outline in Fig. 4, and as indicated on the side plate of the stove by the letters above named in Fig. 2. It occupies as before suggested a narrow space under the fire-chamber and a wider one on the side of the same.

There is a flue space *f f* left between the

top of said oven and the top plate of the stove, and also a flue space on each side of the oven between its sides and the sides of the stove as shown at *g g h h—g g h h*, the width of said spaces being indicated by dotted lines in Fig. 5.

The door *i i* of the oven is hung at its front, and in order to cause the smoke &c. to heat the space at said front, there is a vertical partition *k k* near the door of the oven in each of the flue-spaces on the sides of the oven, which partition divides them into two parts *g g*, and *h h—g g*, *h h* the former of which *g g—g g* open on each side of the stove into the flue space *f f* as shown in Fig. 1, and the smoke, &c., has to descend through the said parts *g g—g g*, before it can circulate through the portions *h h*, *h h* and about the sides of the oven.

The bottom plate *l l* extends out laterally beyond the sides of the oven to the side-plates of the stove, so that the smoke, &c., in descending through the side flue spaces *g g—h h*, &c., impinges upon a portion of the top of said plate and the heat thus derived to the same is radiated throughout the oven. The extension of said bottom plate laterally as above described, so as to allow the smoke, &c., to impinge upon its upper side, before it passes horizontally beneath the same as hereinafter shown, is an essential feature of my improvements, and has I believe never before been suggested.

Between the bottom of the plate *l l* and the top of the hearth plate *a a a*, &c., there is a horizontal flue space *m m*, which opens toward the door *i i* of the oven, into the parallel but reverse flue *n n* beneath said hearth plate *a a a*—as shown in Fig. 4, and the smoke, &c., after passing as before explained is drawn through the flues *m m—n n*, and is carried into the lower part of the discharging flue or funnel *o o* connected in the usual way with the flue *f f*, for facility in kindling fires—Figs. 1, 2, 3, 4, 5, and the whole course of the smoke &c., about the oven and through the various flues is indicated by the black arrows in said figures.

There is between the front of the fire-chamber and the adjacent plate of the stove a hot air chamber *p p* shaped as shown in section in Fig. 4, and the heated air, &c., in this chamber imparts heat to the narrow part of the oven, under the fire chamber *b b* as shown in Fig. 4. I have also found it essential in order to temper the heat at the



top of the oven to form a hot air flue at said top by inserting the plate *q q*, shown by dotted lines in Fig. 4, a little below the top plate of the oven and cold air is received into this space and heated therein, through the openings *r, r, r*, &c., Fig. 3, just above the top of the oven door *i i*. The air thus heated descends by reason of the draft into and through the flue spaces *h h—h h* on each side of the stove behind the partitions *k k* as shown by dotted lines and arrows in Fig. 1 and Fig. 4, and combines with the smoke in said flues as indicated by red arrows in Fig. 4.

As above suggested, the essential improvement in the stove above described is the extension of the bottom plate *l l* of the oven to the sides of the stoves, so that the smoke &c., that passes down the flue *g g*, as shown by black arrows in Figs. 4, and 5, and the hot air that passes down the flue *h h* from the space *a' a'* (to which space cold air is admitted through the apertures *r r* and Fig. 3), all as shown by red arrows—shall impinge upon said plate *l, l*, or rather the extension thereof, and thereby radiate more from said hot

air and smoke, to the oven. This I believe to be a new device, and I have therefore made claim to it, and its combination with the flues, as described.

Having thus described my improvements I shall state my claims as follows:

What I claim as my invention and desire to have secured to me by Letters Patent is—

The arrangement or lateral extension herein above specified of the bottom-plate of the oven, so that the smoke, &c., after passing down the descending flues *g g, h h*, shall impinge upon a portion of the upper side of said plate; and also the combination of said plate so extended with the smoke flues above and below it, herein described, and represented in the drawings.

In testimony that the foregoing is a true description of my said invention I have here- to set my signature this fifteenth day of April in the year 1847.

GEORGE S. BOSWORTH.

Witnesses:

C. H. BOSWORTH,  
STATES M. DYCKMAN.