

W. SHAW.
Cook Stove.

No. 4,592.

Patented June 27, 1846.

Fig. 1,

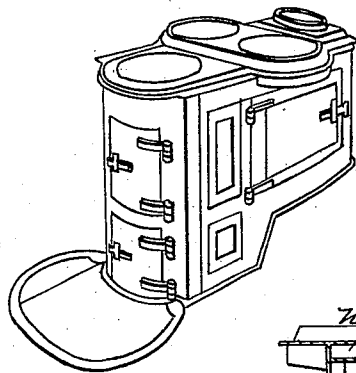


Fig. 3,

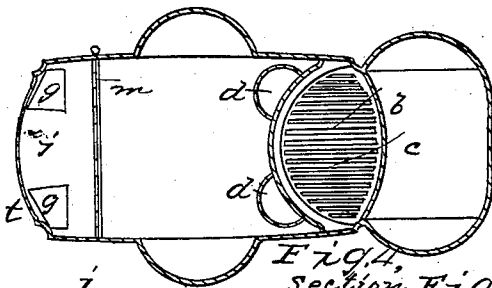


Fig. 2,
Section

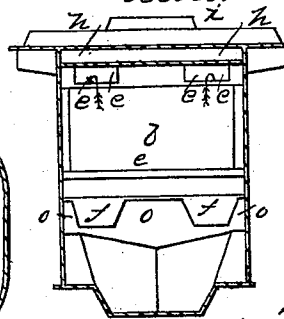


Fig. 4,
Section Fig. 7,

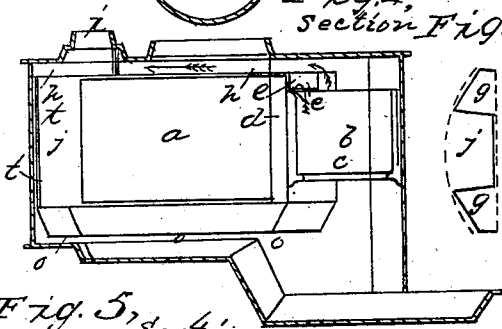


Fig. 6,

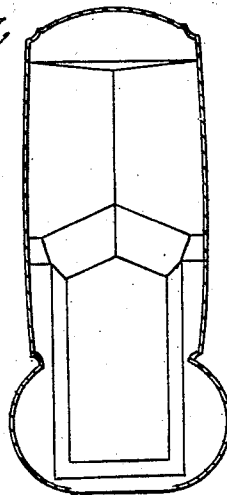
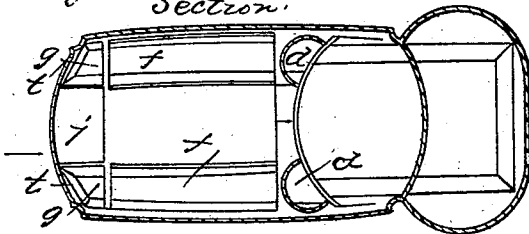


Fig. 5, Section.



Inventor:
Wm. Shaw

UNITED STATES PATENT OFFICE.

WILLIAM SHAW, OF ALBANY, NEW YORK.

COOKING-STOVE.

Specification of Letters Patent No. 4,592, dated June 27, 1846.

To all whom it may concern:

Be it known that I, WILLIAM SHAW, of Albany, in the county of Albany and State of New York, have invented certain Improvements in the Stove known as the "Old Philadelphia Oval, or Ten-Plate" Stove; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of one of my improved stoves. Fig. 2, is a vertical cross section through the fire chamber. Fig. 3 is a top view,—the upper plate being supposed to be removed. Fig. 4 is a vertical longitudinal section. Fig. 5 is a horizontal section upon a line level with the oven bottom, and showing the flues beneath it, and Fig. 6 is a view of the bottom plate of the stove.

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

a, is the oven situated immediately behind the fire chamber *b*. *c*, is the grate.

d d, are two semicircular descending flues, cast upon, and making a part of the front plate of the oven. They have each an opening *e e* into the fire chamber at the top, which opening is formed by cutting out a portion of the front side. The heated current after descending these flues, passes beneath the oven in two flues *f f* of peculiar construction. These flues are formed by two parallel trough-like depressions in the bottom plate of the oven;—which plate is cast in one entire piece of the form represented in Fig. 5,—the two sunk flues *f f*, making a part thereof. The top of these flues is covered by a false oven bottom, constructed for convenience, in two pieces. By removing one of these latter, the flue beneath it may be easily cleansed. From *f f*, the hot air passes through the two vertical flues *g g* at the back of the oven, into the flue *h h* between the top plate of the oven and the top of the stove,—and thence to the smoke pipe *i*. There is also a direct draft from the fire-chamber, through the flue *h h* above the oven, to the smoke pipe.

The bottom oven-plate with its two sunk flues is suspended within the body of the stove;—its edges upon the two sides and the back end, being supported upon ledges cast upon the vertical plates thereof—as shown in Figs. 4 and 5. It will be seen from these

figures, that there is a vacant space or flue, *o, o, o*, between the oven bottom and the bottom of the stove,—communicating in front directly with the ash pit beneath the grate. At the rear of the stove a dumb flue *j*, which is formed between the two flues *g, g*,—(the back plate of the oven being cast in one piece, of the sectional form shown in Fig. 7,—and covered by a false back which closes the front of the flues *g g*, as represented by a dotted line)—connects at the bottom with this vacant space or flue;—the top of the former being closed by the top oven-plate, as shown in Fig. 3. It will be seen that the system of flues, *f f* and *g g*, is suspended as it were within the stove, and surrounded by hot air from below the grate, and that no part of any flue, except that above the oven, is formed by any portion of either of the exterior plates of the stove; consequently, the loss of heat by radiation into the apartment is in a great measure prevented.

The operation of the stove is as follows—A fire being kindled in the fire-chamber and the damper *m* in the flue *h h* above the oven, being opened, the heated air passes immediately to the smoke pipe *i*. When more heat is wanted upon the oven, the damper *m* is closed, and the heated current passes through the openings *e e*, down the flues *d d*; passes beneath the oven in the sunk flues *f f*; ascends through *g g* at the back of the oven and passing through *h h*, escapes into the smoke pipe *i*. Boiler holes are constructed in the top of the stove in the usual manner, as shown in the drawings. The heated air from below the grate also enters the vacant space or flue *o, o, o*, and ascends into *j*, and the spaces *t t* behind the flues *g g*, being radiated directly into the oven from the portions of the bottom and back of the oven between the flues *f f* and *g g*.

The advantages of my stove are as follows—First, by my mode of detaching my flues from the external plates of the stove, and so suspending them that they are surrounded by a stratum of heated air, I prevent as before stated, the loss of heat occasioned by radiation into the apartment, and at the same time apply the heat generated below the grate to the bottom and back of the oven. Secondly, by my mode of constructing the front oven plate with the flues thereto attached, I attain the end of having

descending flues at the back of the fire-chamber, and at the same time have a direct radiation of heat into the oven from the portion of the front plate not occupied by said flues. Thirdly, by casting my bottom oven-plate with its sunk flues, and the back and front plates of the oven of the forms herein shown and described, each in one piece, I simplify the construction of my stove by dispensing with division strips,—reduce the number of plates, and render them stronger.

. What I claim as my invention and desire to secure by Letters Patent is,—

1. The mode of forming and arranging the flues of my stove as herein set forth and described, viz,—by constructing my oven bottom with the trough-like depressions or sunk flues, (to be covered with a false bottom,)—the part of the plate between said flues serving to radiate directly into the oven, the heat generated at the bottom of the fire grate.

2. Also the mode of constructing the front oven plate with the attached descending flues occupying a part thereof;—the remaining portion allowing a direct radiation from the back of the fire box, into the oven; and further, the so constructing the back oven-plate as to form in connection with the false back, two open flues with a closed or dumb flue between them, likewise radiating into the oven, heat derived from the lower side of the fire grate;—the whole system being, as it were, suspended within the stove, so that the bottom and rear flues which convey heated air from above the fire, are not in any part formed by the exterior plates of the stove, but are separated from them by a stratum of air heated by radiation from the bottom of the fire grate.

WILLIAM SHAW.

In presence of—

ORAN OTT,
WM. S. ELLISON.