2 Sheets--Sheet 1.

J. WILLIAMS.

Combined Bakers' Ovens and Ranges.

No. 140,330. Patented June 24, 1873.

Fig. 1.

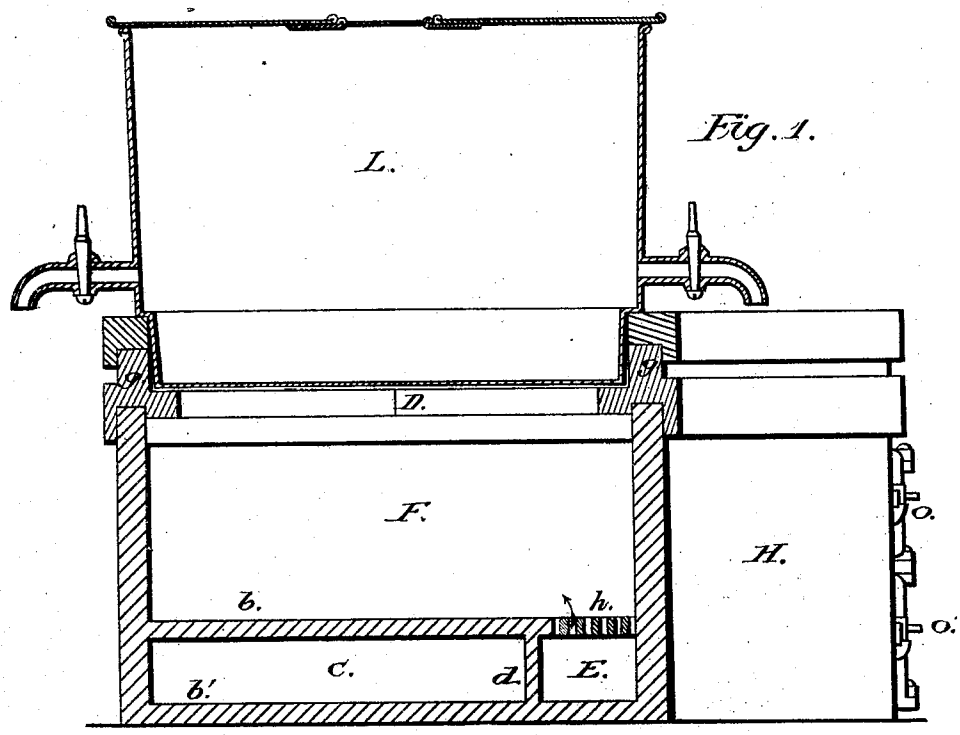
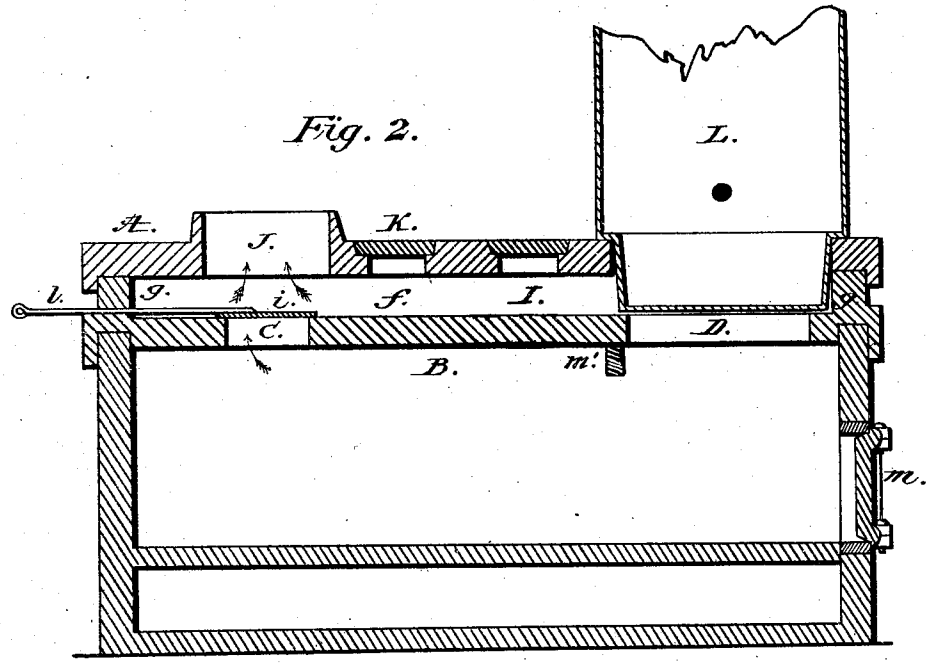


Fig. 2.



Attest;
Henry Fuelong
Carl Dimmick

Inventor;
Joseph Williams
Per Wilton C. Dom Atty

2 Sheets--Sheet 2.

J. WILLIAMS.

Combined Bakers' Ovens and Ranges.

No. 140,330. Patented June 24, 1873.

Fig. 3.

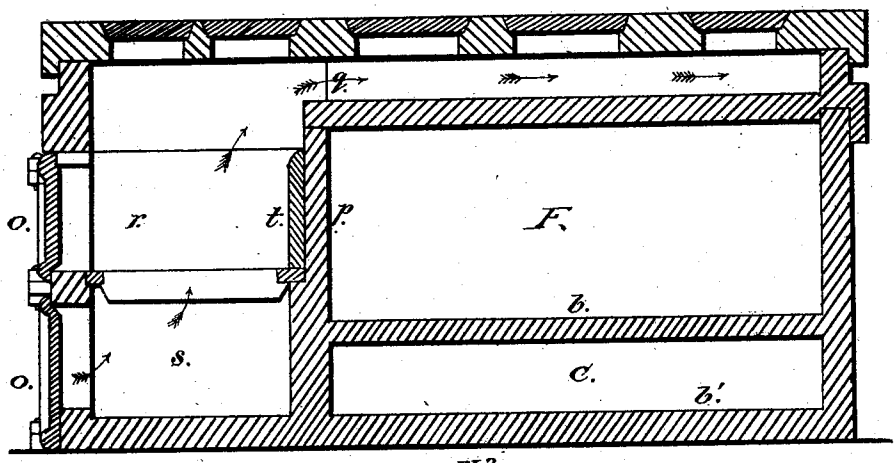
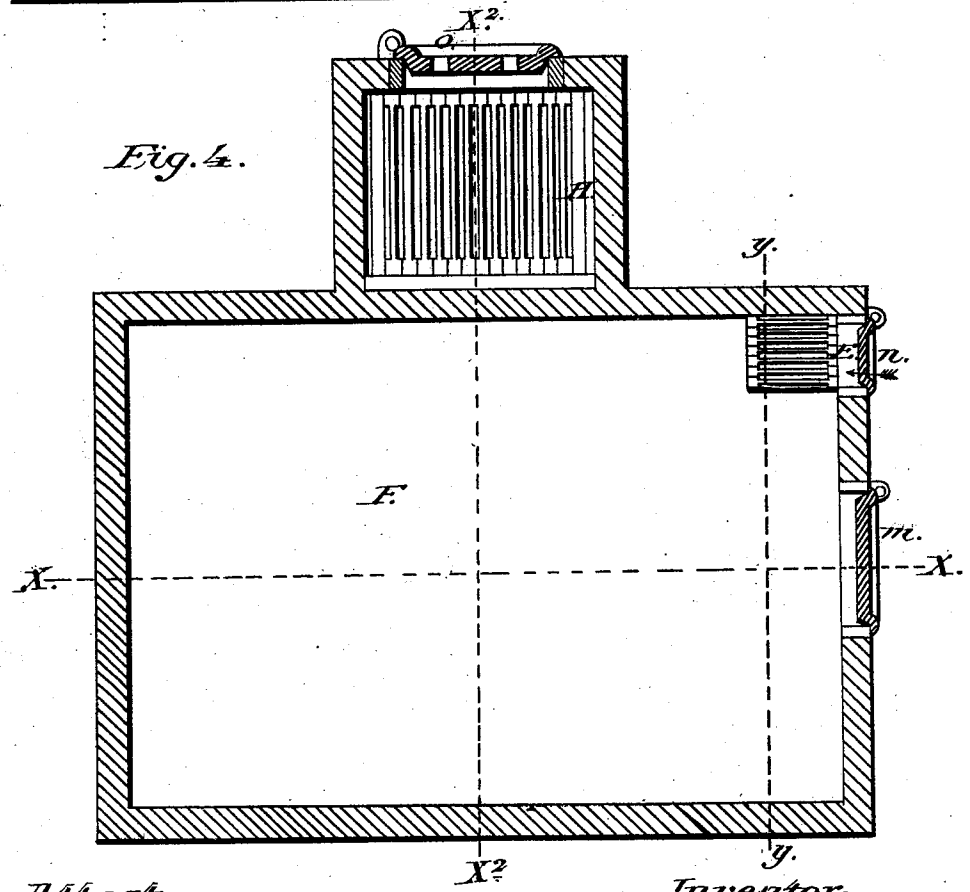


Fig. 4.



Attest;
Henry Furlong
Rud Timmal

Inventor;
Joseph Williams
Per Wilton C. Dom
Atty.

UNITED STATES PATENT OFFICE.

JOSEPH WILLIAMS, OF TOPEKA, KANSAS.

IMPROVEMENT IN COMBINED BAKERS' OVENS AND RANGES.

Specification forming part of Letters Patent No. **140,330**, dated June 24, 1873; application filed November 18, 1872.

To all whom it may concern:

Be it known that I, JOSEPH WILLIAMS, of Topeka, Kansas, have invented certain Improvements in Brick Oven and Range, of which the following is a specification:

My invention has for its object the combination of a bake-oven and cooking-range. It consists of a brick oven constructed with a double floor. The space between the floors is filled with fine sand, except a small portion, divided off, which forms the furnace which gives heat to the oven. The crown of the oven has a raised rim, on which is placed a range-top of iron, made with apertures for griddles, water-heater, and pipe. This range-top is heated by a large furnace built out from the oven, but connected with it.

Figure 1 is a section through line *y y*, Fig. 4. Fig. 2 is a section through line *x x*, Fig. 4. Fig. 3 is a section through line x^2 x^2, Fig. 4. Fig. 4 is a plan of the oven and furnace.

In the drawing, F represents the large bake-oven, the floors and walls of which are built of common brick, except a portion hereafter mentioned, which is of fire-brick. The oven has two floors, *b* and *b'*. The space *c* between these floors is filled with fine sand, except that part cut off by the partition *d*. I place sand between the floors in order that the heat may be retained for a longer time than it would be by the bricks alone, and also that it may be diffused uniformly in all parts of the oven. E represents the small furnace which heats the oven F. It occupies a portion of the space between floors *b* and *b'*, and is divided off by a partition of fire-brick, represented by *d*. In this furnace is contained the fire which heats the oven. In floor *b*, over furnace E, is placed a grating, *h*, which allows an unobstructed passage for the heat and smoke into the oven. The furnace E is closed by door *n*, which has apertures for draft. The fire in furnace E receives draft by means of the apertures in the door *n* and the opening C in the top or crown of the oven. *i* is the cover for opening C, by means of which the temperature of the oven is regulated. It is operated from the outside by handle *l*, which passes through an opening in the rim *g*. By means of the draft-apertures in door *n*, grated covering *h*, and draft-aperture C, a perfect draft can be given to the fire in the small furnace E. There is, of course, a further communication with the chimney through the pipe-hole J. The oven F is covered by the crown B, made of iron. It is in two parts, the line of division being shown at *f*. This cover rests upon the walls of the oven, and is further supported by the iron beam *m'* passing under the crown B at right angles to the line *f*, and built into the walls of the oven. There are two openings in crown B, C and D. C is the draft-aperture before mentioned, and D is to allow the heat in the oven to reach the water-heater L, by which this opening is intended to be closely covered, so that no dust or ashes can fall into the oven. H represents the large furnace which heats the range-part of my combination. It is built in connection with, but out from, the main walls of the oven. It consists of the fire-chamber *r* and draft-chamber *s*. The fire-chamber is lined with iron plates, as shown at *t*. The top A covers the entire oven, resting upon the raised rim *g*, and projects over the furnace H. This is the range-top, and it is constructed like all ranges, having pipe-hole J, griddle-holes K, and water-heater L. That part of the wall of the oven at *p* which divides the furnace H from oven F extends no further than the crown B, thus leaving between it and the top A an opening, *q*. This opening, in connection with draft-chamber *s* and pipe-hole J, gives a free draft to furnace H; it also permits the heat to pass into the space I between the crown B and range-top A. It is here the heat is accumulated which is required for cooking and other purposes on the top of the range; it also helps to heat the oven below.

In the drawings the directions of the several drafts are indicated by arrows.

The furnace H is constructed to burn wood, but it is not my purpose to confine the use of the furnace to that kind of fuel. By a slight change it may be used to burn coal. The small furnace E, however, burns wood only, as at present constructed.

L is the water-heater, placed in an opening in the range-top A, and covering the opening D in crown B. *o* is the door of the fire-chamber, and *o'* of the draft-chamber, in large furnace H. *m* is the door of the oven through which the articles to be cooked are placed within it.

It is believed that the heat from the two

furnaces E and H is amply sufficient for all the purposes required. The heat from the large oven, passing through the opening *g*, fills the space I, and heats the top A and water-heater L; incidentally, also, considerable heat is communicated to the large oven through the crown B and the back wall of the furnace, while the small furnace E throws its heat into the large oven, heating it, and helping to heat the water in the boiler L.

By placing these three parts in one apparatus, space, fuel, and labor are saved.

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

1. The oven F and small furnace E, when used for the purpose hereinbefore described and set forth.

2. The oven F constructed with double floor *b* and *b'*, and the space *c* between filled with sand, as and for the purpose set forth.

3. The combination of the range-top A, heated by the furnace H in the manner described, with the oven F, heated in the manner described, as and for the purpose hereinbefore described and set forth.

Witnesses: JOSEPH WILLIAMS.

RICHARD JONES,

JOHN C. HAGELGAN.