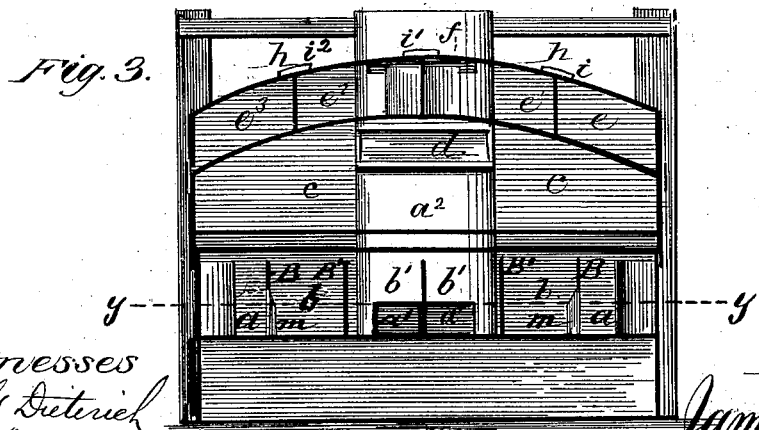
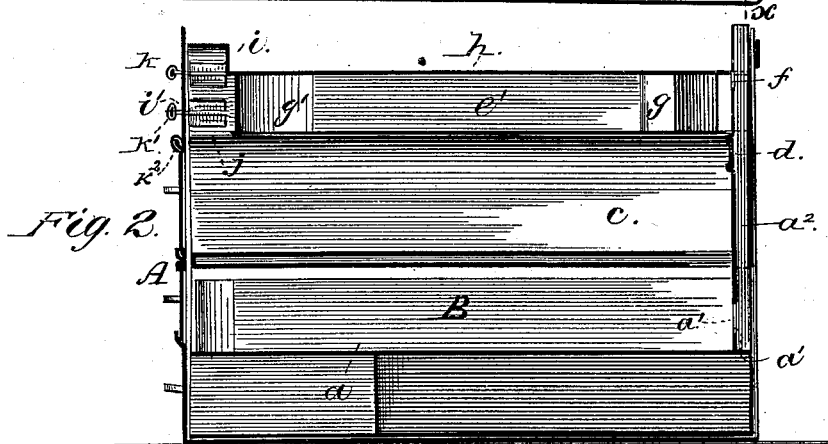
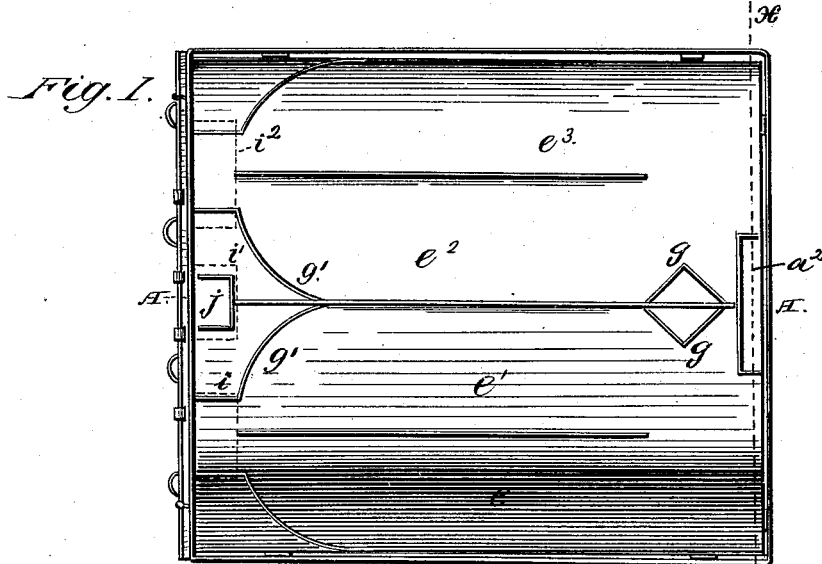


J. CRAIG.
Oven.

No. 221,157.

Patented Nov. 4, 1879.



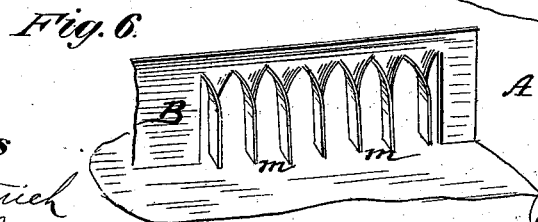
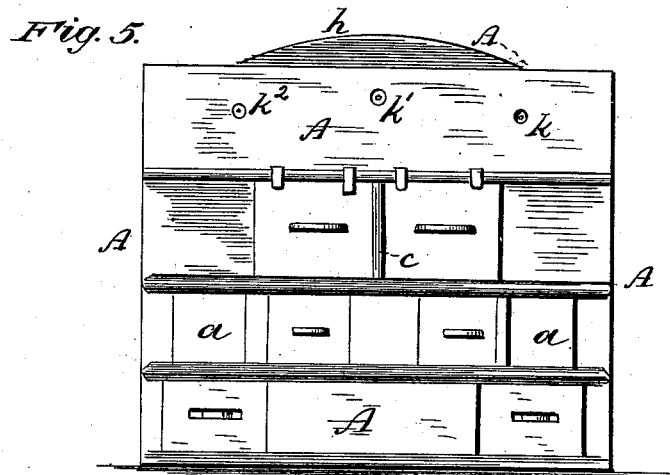
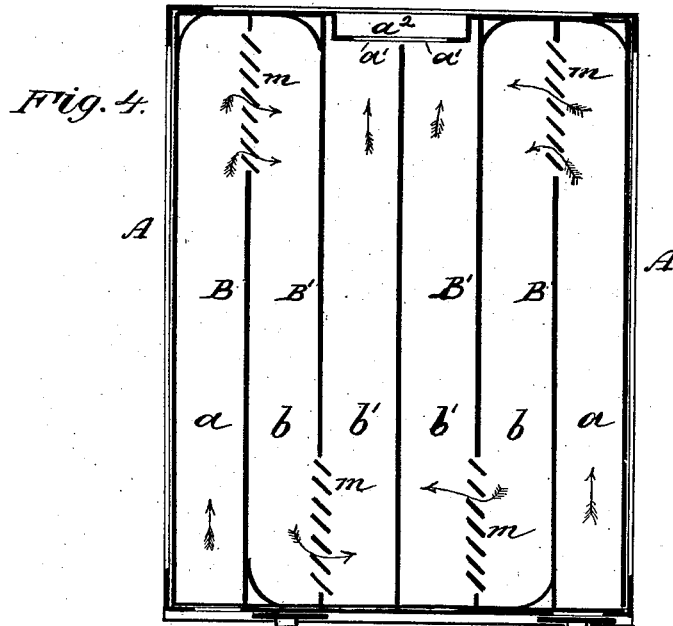
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UNITED STATES PATENT OFFICE.

JAMES CRAIG, OF CLARINDA, IOWA.

IMPROVEMENT IN OVENS.

Specification forming part of Letters Patent No. **221,157**, dated November 4, 1879; application filed August 11, 1879.

To all whom it may concern:

Be it known that I, JAMES CRAIG, of Clarinda, in the county of Page and State of Iowa, have invented certain new and useful Improvements in Ovens; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view of my improved oven with the roof-plate removed. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section through the line *xx* of Fig. 1, with the cover or roof in place. Fig. 4 is a horizontal section taken through the plane indicated by line *yy* in Fig. 3. Fig. 5 is a front or face view, and Fig. 6 is a perspective view, of one of the perforated walls which divide the lower parallel flues, showing the arrangement of the retarding and deflecting shields with which said walls are provided.

Corresponding parts in the several figures are denoted by like letters.

This invention relates to certain improvements in ovens, particularly that class termed "bakers' ovens;" and it consists in the arrangement and construction of the parts, by which the baking of the bread is facilitated, fuel economized, and time saved, substantially as hereinafter more fully set forth, and particularly pointed out in the claims.

In the two sheets of drawings hereto annexed, A represents the outer body or casing of the oven, which is preferably of brick. In the lower part of the oven are the furnaces *a*, which communicate at their rear ends with the parallel double flues *b b'*, formed by parallel walls *B B'*, as shown more clearly in Fig. 4 of the drawings. The walls *B B'*, by which said flues *b b'* are formed, are broken through at opposite ends, the openings being provided with a series of deflectors, *m*, (see Fig. 6,) set at an angle to the line of the wall, which serve the triple purpose of retarding the passage of the heat from one flue to another, deflecting the flame and heat into and against the opposite wall of the flue which it is about to enter, and preventing the escape of sparks and other

products of imperfect combustion from the furnaces and flues into the chimney.

The flues *b' b'* open up into the chimney *a²* through apertures *a' a'*, which may be provided with suitably-arranged dampers to regulate the draft.

Arranged above the furnaces is the main oven or baking-chamber *c*, in the rear end of which is a dampered or slide-covered opening, *d*, connecting with the flue or chimney *a²*. Arranged over and in the direction of the length of the oven or chamber *c* are four or more, or a less number, of flues, *e e' e² e³*, to the rear ends of which the heat is admitted through an opening, *f*, in the flue *a²*.

Heat-deflectors *g g'* may be arranged in connection with the division wall or plate of the two middle flues, *e' e²*.

In the top or roof plate *h*, covering the flues *e e' e² e³*, at its front end, are dampers *i i' i²*, for opening and closing the passages between the said flues, and a central opening, *j*, leading into the chamber or oven *c*. These dampers are operated by handles or rods *k k' k²*, extending through the front of the oven A, as shown more clearly in Fig. 5 on Sheet 2 of the drawings.

When the opening *d* in chimney *a²* is closed, the heat and flame from the furnaces, after passing through their respective flues *b b' b b'* and the apertures *a' a'*, will enter the flues *e e' e² e³*, above the baking-chamber *c*, through the aperture *f*, which is in that case left open, thus expediting the process of baking and giving the oven an even heat above and below. When, however, it is desired to "flash" the oven, this can readily and speedily be effected by simply closing the dampers *i* and *i²*, which cover the inlets to flues *e e'* and *e² e³*, respectively, as shown in dotted lines in Fig. 1, but opening *i'* and *d*, by which the flame is conducted direct from the chimney into the oven or chamber *c*.

I am aware that it is not new to construct bakers' ovens with two sets of communicating flues arranged, respectively, below and above the baking-chamber; and I am also aware that such flues have been constructed in their relative positions parallel to each other, and communicating with each other at opposite ends, so as to cause the heat and products of

combustion to pass in a zigzag course to the chimney; nor do I claim such construction, broadly; but

What I claim as my improvement, and desire to secure by Letters Patent of the United States, is—

1. The arrangement and combination, with the furnaces *a* and parallel flues *b b'*, of the dividing-walls *B B'*, provided at opposite ends with a series of vertical deflecting-shields, *m*, substantially as and for the purpose herein shown and described.

2. The construction and combination, in a baker's oven, of the chimney *a*², having apertures *a' d f*, communicating, respectively, with the flues *b' b'*, baking-chamber *c*, and hot-air flues *e e' e² e³*, heat-deflectors *g g'*, arranged

within the central flues, *e' e²*, of said upper series of hot-air flues, *e e' e² e³*, dampers *i i²*, for closing the openings at the forward end of each pair of flues *e e'*, *e² e³*, and central damper, *j*, for closing the central opening, which leads down into the baking-chamber *c*, all constructed and arranged to operate substantially in the manner and for the purpose herein shown and set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES CRAIG.

Witnesses:

LU B. CAKE,
CHAMP BALLARD.