

(No Model.)

3 Sheets—Sheet 1.

C. LIENHARD.
BAKER'S OVEN.

No. 533,715.

Patented Feb. 5, 1895.

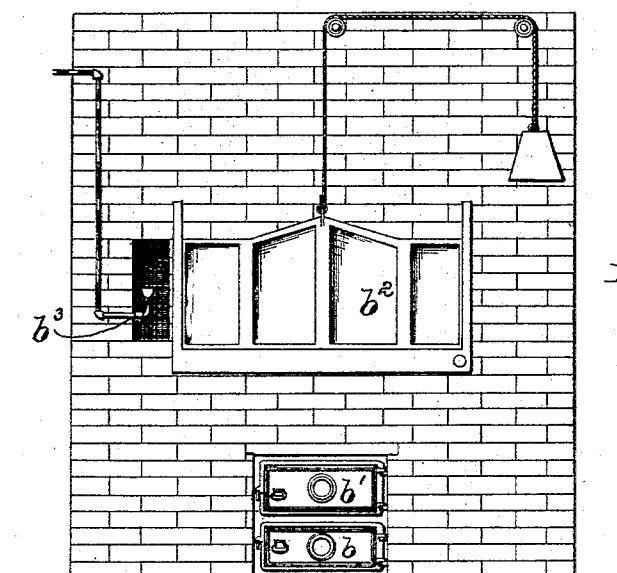


Fig. 1

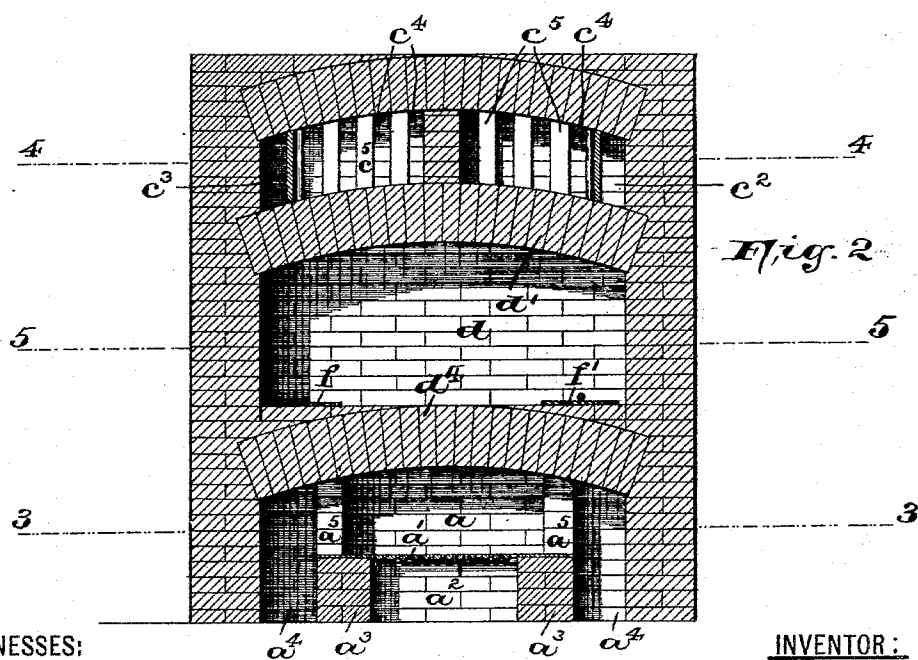


Fig. 2

WITNESSES:

B. Mortimer Trussell.
Wm. H. Campfield Jr.

INVENTOR:

Charles Lienhard

BY Fred C. Fraentzel, ATT'Y.

C. LIENHARD.
BAKER'S OVEN.

No. 533,715.

Patented Feb. 5, 1895.

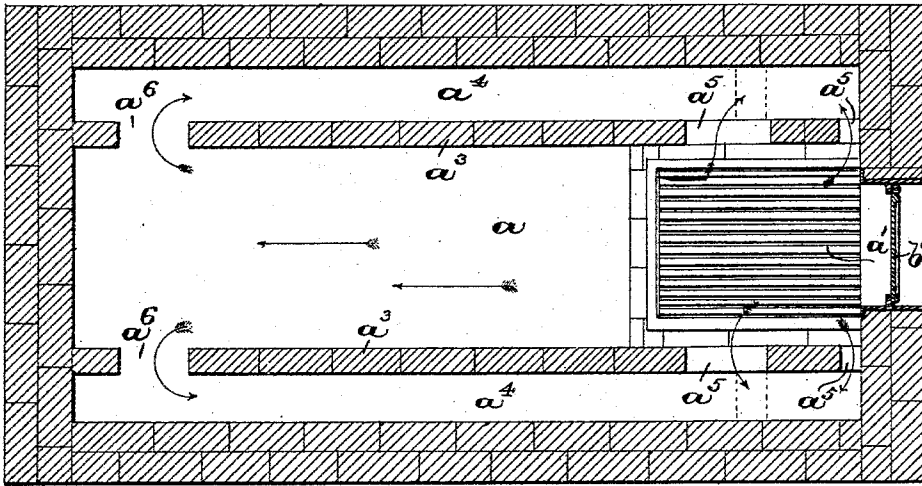


Fig. 3

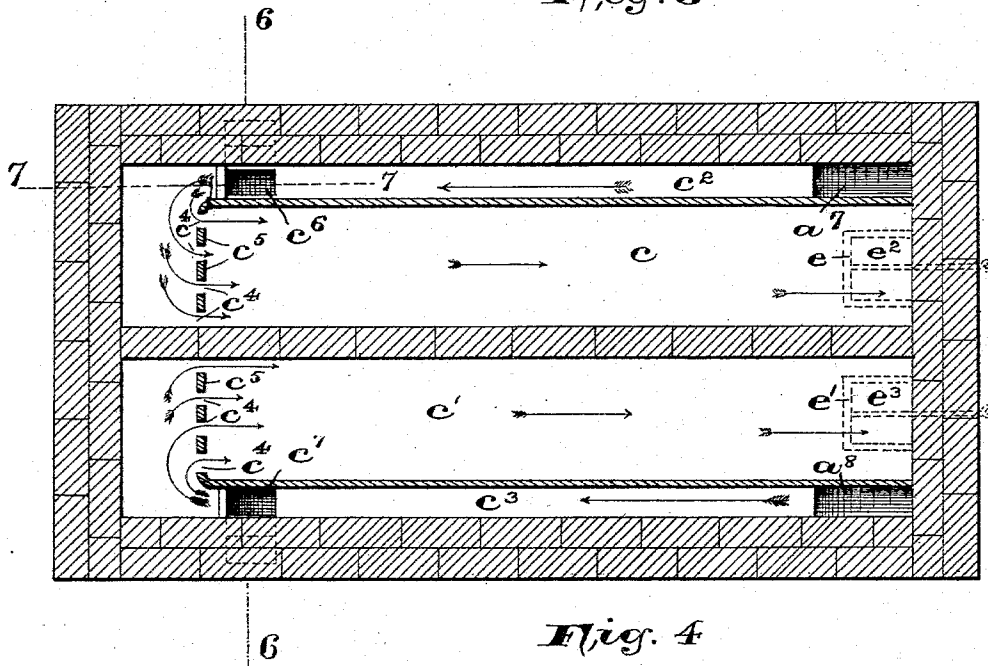


Fig. 4

WITNESSES:

B. Mortimer Trustell,
H. H. Canfield, J.

INVENTOR:

Charles Lienhard,

BY Fred C. Fraentzel, ATT'Y.

(No Model.)

3 Sheets—Sheet 3.

C. LIENHARD.
BAKER'S OVEN.

No. 533,715.

Patented Feb. 5, 1895.

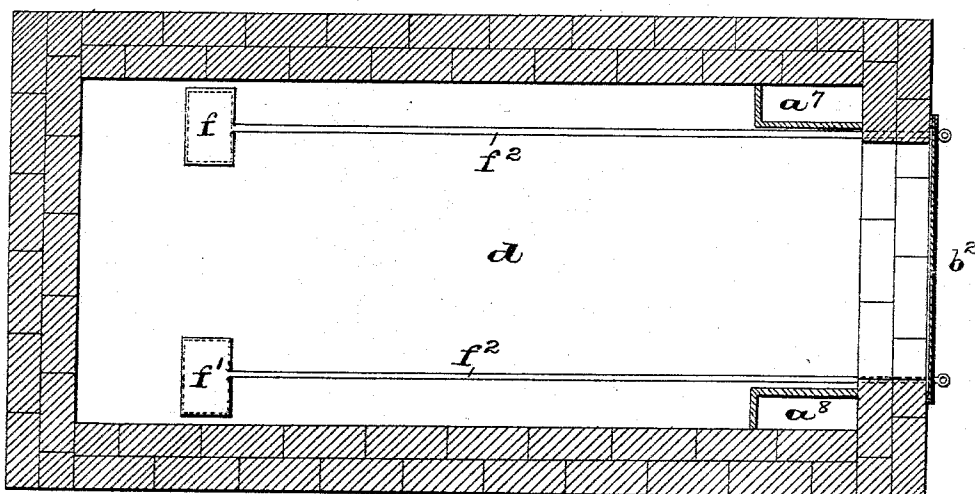


Fig. 5

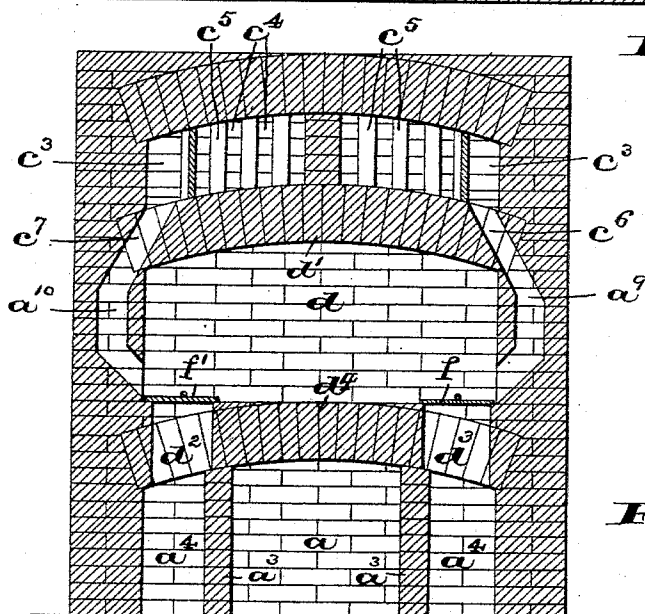


Fig. 6

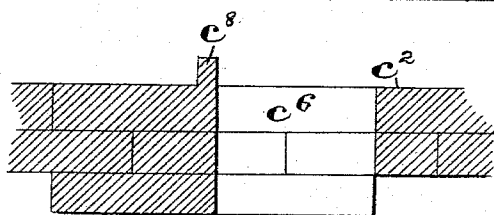


Fig. 7

WITNESSES:

B. Mortimer Tinslee,
Wm. H. Campfield, Jr.

INVENTOR:

Charles Lienhard,
BY Fred C. Fraentzel, ATT'Y.

UNITED STATES PATENT OFFICE.

CHARLES LIENHARD, OF NEWARK, NEW JERSEY.

BAKER'S OVEN.

SPECIFICATION forming part of Letters Patent No. 533,715, dated February 5, 1895.

Application filed July 20, 1894. Serial No. 518,066. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LIENHARD, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Bakers' Ovens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention has reference to various improvements in bakers' ovens, and relates more particularly to the peculiar arrangements of the heat flues for conducting the heat to the top and the bottom of the oven and imparting a uniform heat to said parts. The invention therefore consists of the improved oven herein shown, and in certain minor features of construction and combinations of parts, such as will be hereinafter more fully described and finally embodied in the clauses of the claims.

The invention is illustrated in the accompanying sheets of drawings, in which similar letters of reference are employed to indicate like parts in each of the several views.

Figure 1 is a front view of the oven, and Fig. 2 is a transverse vertical section of the same. Fig. 3 is a horizontal section of the oven, taken on line 3—3 in Fig. 2. Fig. 4 is a similar section, taken on line 4—4 in said Fig. 2; and Fig. 5 is a like section, taken on line 5—5 in the same figure. Fig. 6 is a vertical cross section taken on line 6—6 in Fig. 4, and Fig. 7 is a detail vertical longitudinal section, taken on line 7—7 in said Fig. 4.

In said drawings, *a* indicates the fire place of a baker's oven, provided with the grate *a'* and ash-pit *a''*. Suitable doors *b* and *b'*, see Fig. 1, are employed in the front to close said parts. The fire-place, as will be seen from Figs. 2 and 3 extends toward the rear of the oven, being provided on the opposite sides with walls *a³*, forming hot air ducts or flues *a⁴*. Openings *a⁵* and *a⁶* establish communication between said fire-place and the said flues, and the hot air and products of combustion will pass in the direction of the arrows shown in said Fig. 3, through flues *a⁷*

and *a⁸* into chambers *c* and *c'*, separated from the baking chamber *d*, by the arched roof or wall *d'*, as will be seen from Figs. 2 and 6. 55

The products of combustion and hot air coming from the fire place *a*, through the vertical flues *a⁷* and *a⁸*, pass through the ducts or flues *c²* and *c³*, see Fig. 4, to the back wall of the oven, where the gases and the hot air are deflected and forced through openings *c⁴* in a wall *c⁵* and are equally distributed over the entire surface of the chambers *c* and *c'*. This gives a constant and uniform heat both below and above the baking chamber *d*, and bread or cake can be better baked and in less time than is usual. 60 65

The dotted lines *e* and *e'*, see Fig. 4, indicate the positions of exhaust flues in the top of the oven, provided with suitable dampers *e²* and *e³* which can be opened to permit the escape of the gases and smoke into the chimney connected with the oven. 70

As will be seen from Figs. 4, 5 and 6, in the flues *c²* and *c³*, I have arranged openings *c⁶* and *c⁷*, which extend downwardly in the side walls of the oven, forming the flues *a⁹* and *a¹⁰*. These flues terminate directly above the damper plates *f* and *f'* operated by the handles *f²*, see Fig. 5, and cover the holes *d²* and *d³* in the arch *d⁴*, as will be clearly seen from Fig. 6. Directly back of each opening *c⁶* and *c⁷*, there is a slight projection *c⁸*, and the hot air, which naturally carries fine particles of ashes and dust with it, coming through said flues *c²* and *c³*, will strike said projections *c⁸*. The ashes are thus arrested in their passage through said flues and are deflected downwardly into said openings *c⁶* and *c⁷*, passing through said flues *a⁹* and *a¹⁰* and landing, either upon the damper plates *f* and *f'* when closed, or passing directly down into the holes *d²* and *d³* into the back of the ash-pit, when said dampers are open. By this arrangement the dust and fine particles of ashes are prevented from collecting in the back of the chambers *c* and *c'* behind the wall *c⁵*, thereby obstructing the passage of the hot air and combustion gases into said chambers *c* and *c'*. Furthermore, it will be seen that by the arrangement of the dampers *f* and *f'* the openings *d²* and *d³* can be closed to prevent the gases, &c., from the fire place getting into the baking chamber. 75 80 85 90 95 100

One great advantage is that by my construction of baker's oven the heat is forced to all parts above and below the baking chamber, thereby thoroughly and properly heating each part thereof, without any cool spaces.

In Fig. 1, b^2 indicates the ordinary door over the opening leading into the baking chamber d , and b^3 is the ordinary gas burner commonly employed in connection with bakers' ovens.

Having thus described my invention, what I claim is—

1. The combination, in a baker's oven, of a fire place, having walls a^3 and flues a^4 , upright flues extending through the baking chamber, and chambers c and c' above said baking chamber, ducts or flues c^2 and c^3 , with which said upright flues connect, a deflecting wall c^5 having openings therein, and flues a^9 and a^{10} connecting said flues c^2 and c^3 with the baking chamber, substantially as and for the purposes set forth.

2. The combination, in a baker's oven, of a fire place, having walls a^3 and flues a^4 , upright flues extending through the baking chamber, and chambers c and c' above said baking chamber, ducts or flues c^2 and c^3 , with which said upright flues connect, a deflecting wall c^5 having openings therein, flues a^9 and a^{10} connecting said flues c^2 and c^3 with the

baking chamber, openings d^2 and d^3 in the dividing wall between the baking chamber and the fire place, and dampers over said openings, substantially as and for the purposes set forth.

3. The combination, in a baker's oven, of a fire place having walls a^3 and a^4 , upright flues extending through the baking chamber, ducts or flues c^2 and c^3 , with which said upright flues connect, and flues a^9 and a^{10} connecting said flues c^2 and c^3 with the baking chamber, substantially as and for the purposes set forth.

4. The combination, in a baker's oven, of a fire place having walls a^3 and a^4 , upright flues extending through the baking chamber, ducts or flues c^2 and c^3 , with which said upright flues connect, flues a^9 and a^{10} connecting said flues c^2 and c^3 with the baking chamber, openings d^2 and d^3 in the dividing wall between the baking chamber and the fire place, and dampers over said openings, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 17th day of July, 1894.

CHARLES LIENHARD.

Witnesses:

FREDK. C. FRAENTZEL,
WM. H. CAMFIELD, Jr.