(No Model.) 2 Sheets—Sheet 1.

J. E. ELLS.

PORTABLE BAKER'S OVEN.

No. 346,365. Patented July 27, 1886.

Fig. 1.

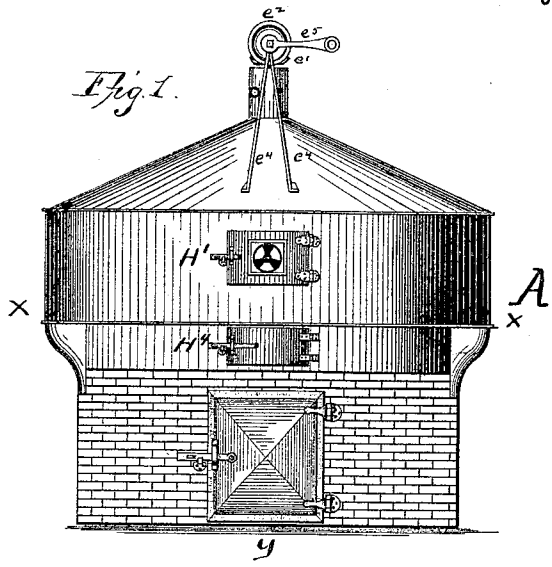
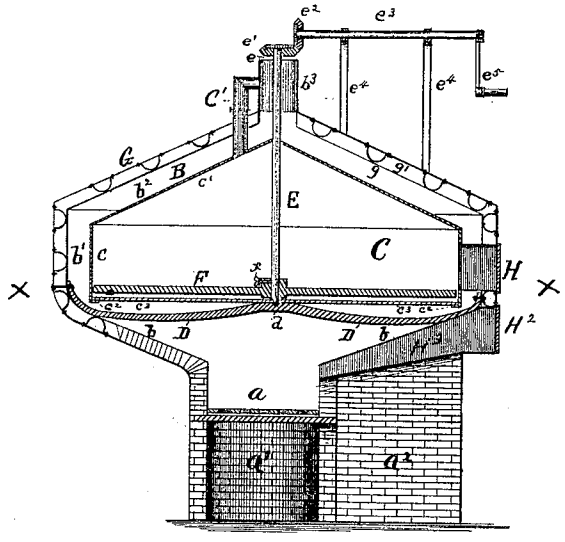


Fig. 2.



Witnesses:
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James E. Ells.
per Geal P. Byington
Atty.

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(No Model.)

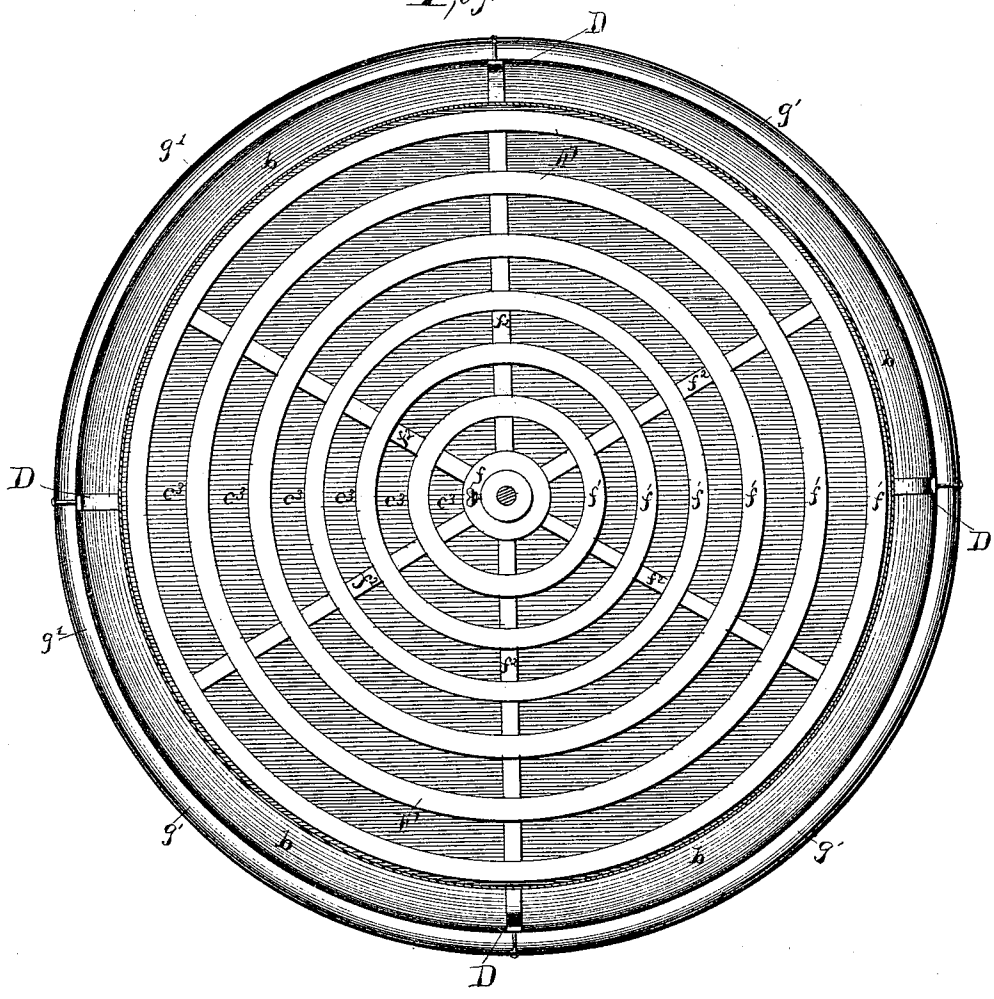
2 Sheets—Sheet 2.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES E. ELLS, OF NORWALK, CONNECTICUT, ASSIGNOR TO BERTHA J. ELLS, OF SAME PLACE.

PORTABLE BAKER'S OVEN.

SPECIFICATION forming part of Letters Patent No. 346,365, dated July 27, 1886.

Application filed October 8, 1885. Serial No. 179,315. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. ELLS, a citizen of the United States, residing at Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in a Portable Baker's Oven; 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.

This invention relates to portable baker's ovens of that class in which the products of combustion are excluded from the oven proper.

Heretofore the furnace has been so located in relation to the oven and the exit for the escape of the products of combustion that the oven would not receive the full benefit of the heat, because the products of combustion from the furnace always take the most direct course to the exit, and unless the oven were so arranged that every part would be in this course the interior of the oven would be unevenly heated.

The object of my invention is to construct a simple, convenient, and effective baker's oven; and to this end the nature of my invention consists of constructions and combinations, all as will be hereinafter described in the body of the specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is a vertical section through the line *y y*, Figs. 1 and 3; and Fig. 3 is a horizontal section of line *x x*, Figs. 1 and 2.

A is the furnace, which may be made of brick or metal, or both, and consists of a fire-box, *a*, and ash-pit *a'*, and an opening, a^2, for admission of air to the ash-pan and fire-box. Above the furnace is a chamber, B, of cylindrical form, with its center immediately over the fire-box *a*. Within this chamber is an oven, C, supported from the base of the chamber by means of arms D, diverging from the center of the bottom of the oven and resting upon the bottom of the chamber B. These arms support the oven a sufficient distance to form the horizontal flue *b*, which connects with the cylindrical uptake-flue *b'*, encircling the cylindrical side of the oven, and connects with the upper oblique flue, b^2, between the top of the oven C and the upper wall of the chamber B, having in its center an exit-flue, b^3, connecting with the pipe that leads to the chimney. The sides and top of the oven C are preferably constructed of sheet metal, the side *c* being of cylindrical shape, and the top *c'* convex and joined to the side *c* in the ordinary manner.

On the lower edge of the side *c* is a flange, c^2, for supporting the outer rim or edge of the bottom c^3. This bottom c^3 is constructed of three or more segmental pieces of metal, having their inner ends resting upon the hub *d* of the arms D. This hub *d* serves as a step for the spindle E, which projects through the top of the oven and pipe b^3, which is provided at its upper and closed end with a bearing for the upper part.

Upon the upper end, *e*, is a horizontal bevel gear-wheel, *e'*, which meshes with a vertical gear-wheel, e^2, fixed to a shaft, e^3, supported by brackets e^4, and having a crank, e^5, for revolving the same.

Within the oven and upon the spindle E is the baking-plate F, which is rendered adjustable on the latter by means of the set-screw *f*, so that the baking-plate may be raised or lowered any desired distance above the bottom c^3. This baking-plate may be of any desired construction, but is preferably formed of concentric rings *f'*, connected together by webs f^2, and is revolved by means of the spindle and its operating parts. If at any time it is desired to increase the capacity of the oven, more baking-plates can be attached to the spindle, one above the other, in the same manner as the plate F.

In the top of the oven is a vertical pipe, C', which enters the pipe b^3, for the purpose of conveying the steam and fumes from the oven to the chimney.

Inclosing the outer wall of the chamber B is a case, G, having U-shaped strips *g*, which support said case away from said outer wall and forms a dead-air passage, *g'*, which prevents the heat from the flues from being radiated outwardly. Extending from the outside of this case, across the space *g'* and the flue *b'* to the oven C, is a passage or doorway, H, by means of which access is had to the

oven. This doorway is closed by a door, H′. Beneath the door H′ is an opening, H^2, to the passage H^3, that leads to the fire-box *a*, for the purpose of supplying fuel to the latter, and is closed by a door, H^4. This passage H^3 is between the bottom of the flue *b* and top of the opening a^2.

It will be noted that the center of the oven is immediately over the the center of the fire-box, and that the exit-pipe b^3 is immediately above the center of the oven, and that the oven is wholly within the chamber B, so that the products of combustion passing from the fire-box will completely encircle the oven and heat every part to the same degree, by which means I am enabled to bake articles in all parts of the oven.

Having fully described my oven, what I desire to secure by Letters Patent is—

1. The combination of a furnace, the chamber above the furnace and having its exit immediately over the center of the fire-box, and the oven inclosed within said chamber and having its center immediately above the center of the fire-box, and the arms D, radiating from the center of the bottom of the oven and their outer ends resting upon the bottom of said chamber, substantially as shown and described.

2. In a baker's oven, the combination of the furnace having the passage H^3 between the bottom of the flue *b* and top of the opening a^2, a chamber above the furnace, and having the exit-opening immediately above the center of the fire-box, and the oven inclosed within said chamber and having its center immediately above the center of the fire-box, substantially as shown and described.

3. In a baker's oven, the combination of the furnace, the chamber above the furnace, and having its exit immediately above the fire-box, the oven inclosed within said chamber supported therefrom by the radial arms D, the spindle E, stepped in hub of said radial arms and projecting upwardly through the oven and chamber, means for revolving the spindle, and the baking-plate fixed to said spindle, substantially as shown and described.

4. In a baker's oven, the combination of the furnace, the chamber above the furnace, and having its exit immediately above the fire-box, the oven inclosed within said chamber supported therefrom by the radial arms D, the spindle E, stepped in hub of said radial arms and projecting upwardly through the oven and chamber, means for revolving the spindle, and the adjustable baking-plate fixed to said spindle, substantially as shown and described.

5. The combination of a cylindrical oven, consisting of a top, cylindrical sides having flange on the lower edge, segmental bottom, a chamber inclosing said oven, and the radial arms projecting from the center of said oven and resting upon the bottom of said chamber, substantially as shown and described.

6. In a baker's oven, the combination of a furnace, the chamber above the furnace having an exit-opening immediately above the fire-box, and having an inclosing-jacket forming a dead-air space, and the oven inclosed within said chamber supported by radial arms D, the spindle E, stepped in hub of said radial arms and projecting upwardly through the oven and chamber, means for revolving the spindle, and the baking-plate fixed to said spindle, substantially as shown and described.

7. In a baker's oven, the combination of a furnace, a chamber above the furnace, an oven within said chamber supported therefrom by radial arms and provided with a ventilating-flue which leads to the exit pipe of the chamber, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES E. ELLS.

Witnesses:

HENRY K. SELLECK,

OLIVER E. WILSON.