(No Model.)

R. LAMB.

BAKER'S OVEN.

No. 345,906. Patented July 20, 1886.

Fig 2.

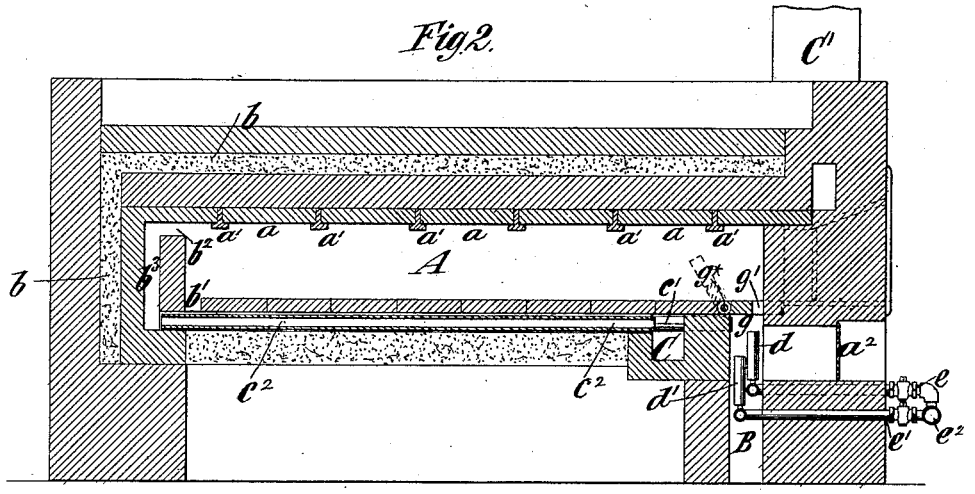
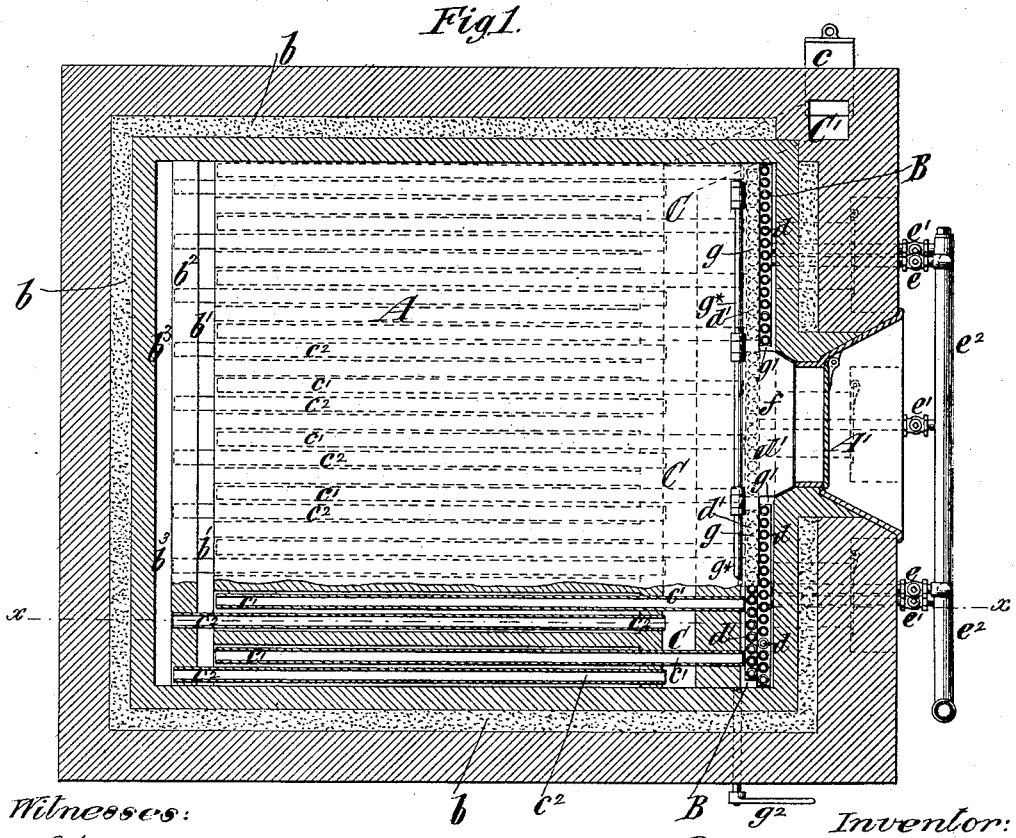


Fig 1.



Witnesses:
C. L. Sundgren
Henry McBride

Inventor:
Richard Lamb
by his Attys
Brown & Hall

UNITED STATES PATENT OFFICE.

RICHARD LAMB, OF NEW YORK, N. Y., ASSIGNOR TO THE THOMPSON GAS KILN AND OVEN COMPANY, OF SAME PLACE.

BAKER'S OVEN.

SPECIFICATION forming part of Letters Patent No. 345,906, dated July 20, 1886.

Application filed September 23, 1885. Serial No. 177,889. (No model.)

To all whom it may concern:

Be it known that I, RICHARD LAMB, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Bakers' Ovens, of which the following is a specification.

My invention relates to bakers' ovens which are heated by gas; and the object of the invention is to provide an oven in which the baking-chamber may be heated directly by passing the products of combustion and heated air directly through the chamber, or indirectly by passing such heated products through tubes or flues arranged beneath the floor of the baking-chamber, or by passing the heated products both through and beneath the chamber.

The invention consists in novel combinations, which are hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a horizontal section through the baking-chamber of an oven embodying my invention, a portion of the floor of the oven being removed to show clearly the tubes or flues beneath it; and Fig. 2 is a vertical section upon the plane of the dotted line x x, Fig. 1.

Similar letters of reference designate corresponding parts in both figures.

A designates the baking-chamber, which is here shown of rectangular form, and which has at one side or the front an opening closed by a door, A′, through which food or articles to be baked may be introduced into and removed from it. The roof of this baking-chamber may consist of tiles a, supported by flanged beams a', and the floor of the chamber may also be composed of tiles. The external structure may consist of layers of brick-work, and the oven may be completely or partially surrounded by a layer of slag, mineral wool, or other non-conducting material, b.

At one side of the oven (as here shown at the front thereof) is a burner-chamber, B, which is located beneath the oven, and, as here shown, extends entirely across from side to side thereof.

In the floor of the oven and at the side opposite the burner-chamber B is an opening, b', and above the rear wall of the baking-chamber and at the top thereof is a horizontal slot or opening, b^2, which communicates with a drop-flue, b^3.

Beneath the oven and at the side on which the burner-chamber B is located I have represented an escape-flue, C, which extends transversely across beneath the baking-chamber and communicates with a chimney or smoke-stack, C′, which may be controlled by a damper, c.

Beneath the floor of the baking-chamber are arranged tubes or flues c' c^2. The tubes or flues c' extend directly from the burner-chamber B, near the top thereof, rearward to the opening b' in the floor of the oven, and the tubes or flues c^2 extend from the drop-flue b^3 at the rear of the oven to the escape-flue C, extending across beneath the front thereof.

In the burner-chamber, at opposite sides of the feeding-opening A′, I have represented double rows of gas-burners d d', the burners in the former row, d, being somewhat higher than those in the latter row, d'. These burners are supplied with gas through suitable pipes, e e', from a common supply-pipe, e^2, and are constructed on the Bunsen plan, or so as to consume a mixture composed of proper proportions of gas and air. In the brick-work structure of the oven are suitable openings, a^2, closed by doors, and which afford provision for access to the burners for lighting them.

Opposite the door A′ and in the center of the oven there is only a single row of burners, d', and the communication between the burner-chamber B and the baking-chamber A above this single row of burners is closed or cut off by a tile, f. The burners d' of the single row on each side of the center opening, A′, are overlapped by a tile or deflector, g, which does not, however, extend over the burners d of the other row, but leaves over them an opening, g', through which the hot products of combustion and heated air from the burners d may pass directly into the baking-chamber A. As here shown, the deflector g is hinged or pivoted at g^*, by a rod which extends across the oven, and which may be turned by means of a handle, g^2, so as to swing the deflector g upward, to permit the hot products from the burners d' to pass directly upward into the baking-chamber.

When the deflector g is swung downward into the position shown in full lines, Fig. 2, it will overlap the burners d', and a greater or less proportion of the hot products from such burners will pass through the tubes or flues c' to the opening b' at the rear of the baking-chamber, thence upward through the outlet-opening b^2 and through the drop-flue b^3 and tubes c^2 to the escape-flue C. The proportion of hot products passed directly through the flues c' when the deflector g is swung down will vary according to the distance to which the deflector overlaps the burners d' and its height above the burners. At the same time the burners d will not be covered by the deflector, and the hot products from them will pass directly into the baking-chamber, thence rearward to the outlet-opening b^2 and downward through the drop-flue b^3 and tubes c^2 to the escape-flue C. In this way I provide for passing a portion of the hot products from the burners directly through the baking-chamber and the remaining portion of the hot products from the burners directly beneath the baking-chamber, so as to more effectively heat it.

If it be desired to pass the hot products from all the burners directly through the baking-chamber, then the deflector g should be swung upward and over, as indicated by dotted lines in Fig. 2, in which position it will not overlap the burners d, and will permit the hot products from them to pass directly into the baking-chamber.

Instead of all the burners being atmospheric burners, those burners from which the heated products pass directly beneath the floor of the baking-chamber through the tubes c' may be constructed to burn ordinary illuminating-gas without any admixture of air.

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

1. The combination, with a baking-chamber, of two series of burners for heating the same, the said chamber having an opening whereby the products of combustion from one series of burners may pass directly into and through the baking-chamber, and tubes or flues for the products of combustion from the other series of burners extending beneath the baking-chamber, and whereby the bottom of the chamber is additionally heated, substantially as herein described.

2. The combination, with a baking-chamber and burner-chamber opening into the baking-chamber and a transverse escape-flue, C, below the baking-chamber at the front thereof, of one series of flues or tubes, c', leading from the burner-chamber rearward beneath the baking-chamber, another series of flues or tubes, c^2, communicating with the baking-chamber at the rear, and leading forward beneath the baking-chamber to the escape-flue C, a row of burners in the burner-chamber, and a deflector which overlaps said burners, whereby products of combustion are directed rearward beneath the baking-chamber through the flues or tubes c', and from the rear ends of which they pass forward beneath the baking-chamber through the flues or tubes c^2 to the flue C, substantially as herein described.

3. The combination, with a baking-chamber and a burner-chamber below the same at one side thereof, the baking-chamber having an escape-opening at the side opposite the burner-chamber, of burners arranged in the burner-chamber, flues or tubes leading from the burner-chamber beneath the baking-chamber to the other side thereof, and a deflector adjustable to cause it to overlap the burners or to leave a clear passage for the products of combustion from the burners upward into the baking-chamber, substantially as and for the purpose herein described.

4. The combination, with a baking-chamber and a burner-chamber communicating therewith at one side thereof, the baking-chamber having an escape-opening at the side opposite the burner-chamber, of flues or tubes extending beneath the baking-chamber, two rows of burners arranged in the burner-chamber, and a deflector overlapping the row of burners which is nearest to the ends of said flues or tubes presented in the burner-chamber, substantially as and for the purpose herein described.

5. The combination, with the baking-chamber A, having at one side the opening b' in the bottom thereof, and an opening, b^2, from the top thereof into the drop-flue b^3, of the burner-chamber B and the escape-flue C at the opposite side of the baking-chamber, tubes c', leading from the burner-chamber to the opening b' into the baking-chamber, tubes c^2, leading from the drop flue b^3 to the escape-flue C, burners arranged in two rows in the burner-chamber, and a deflector overlapping the burners in the row nearest the ends of the tubes c' which are presented in the burner-chamber, substantially as and for the purpose herein described.

RICHARD LAMB.

Witnesses:
C. HALL,
FREDK. HAYNES.