

May 15, 1923.

1,455,290

J. HIEB

ELECTRIC BAKE OVEN

Filed March 10, 1922

2 Sheets-Sheet 1

Fig. 1.

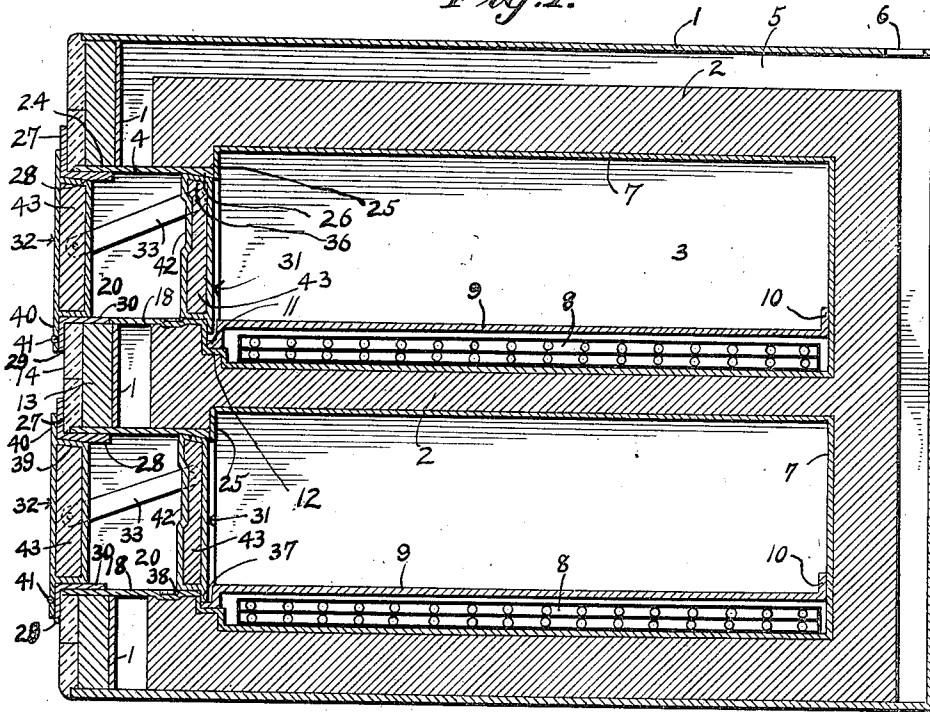
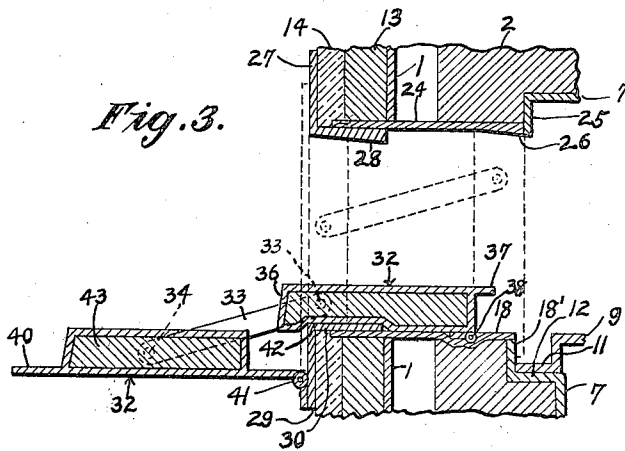


Fig. 3.



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2 Sheets-Sheet 2

Fig. 2.

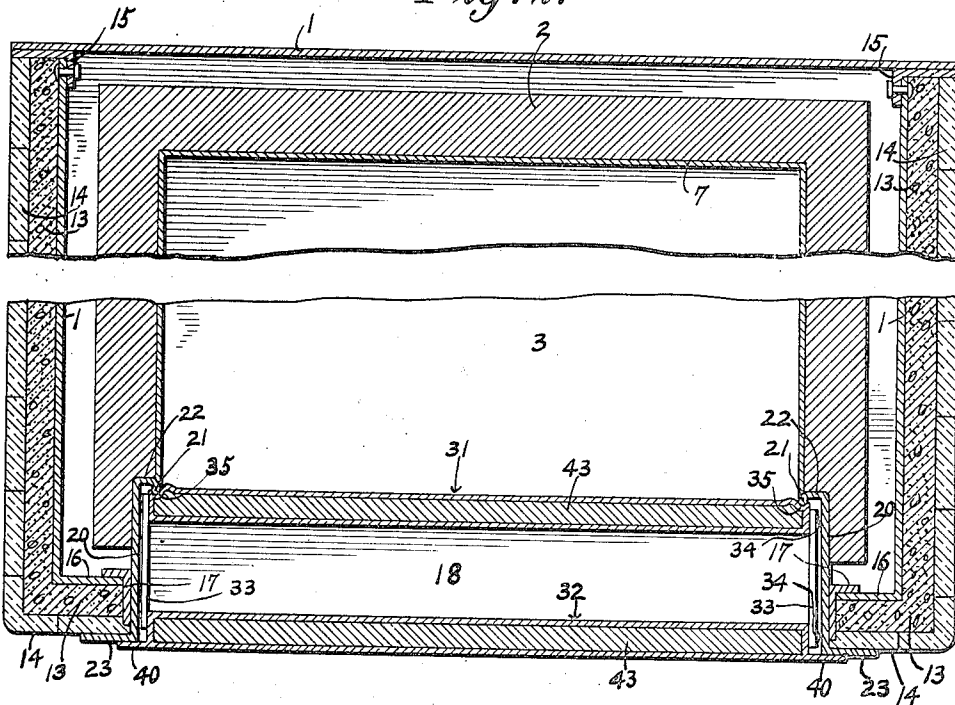
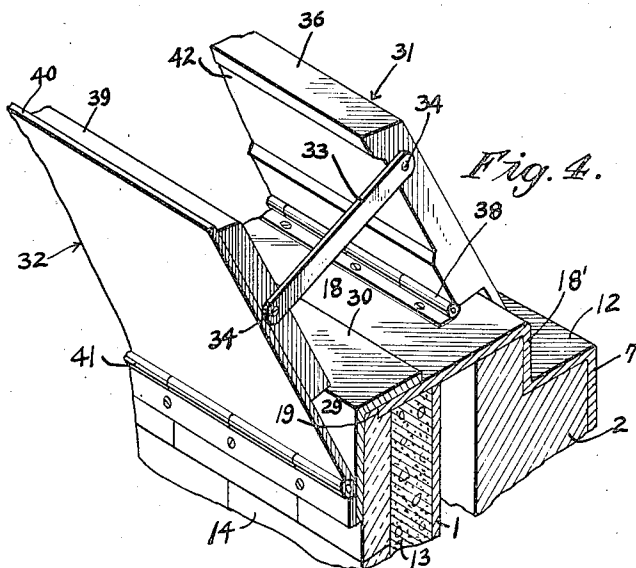


Fig. 4.



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UNITED STATES PATENT OFFICE.

JACOB HIEB, OF SEATTLE, WASHINGTON.

ELECTRIC BAKE OVEN.

Application filed March 10, 1922. Serial No. 542,607.

To all whom it may concern:

Be it known that I, JACOB HIEB, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in an Electric Bake Oven, of which the following is a specification.

This invention has relation to certain new and useful improvements in electric bake ovens and has for its primary object the provision of an electric bake oven including inner and outer walls with an air space therebetween and a double door constructed so as not to obstruct the air space or air chamber when the double door is closed, the air chamber extending around the sides, back and front as well as the top of the inner wall or insulation and the exterior metal or tile covering of the oven.

The invention has for another object the provision of an electric bake oven of the character stated in which the oven may be constructed with the usual magnesia insulation and inner metal laths for the inner wall while the outer wall is formed of metal and may also include the cement filling between the metal laths of the outer wall and the outer tile, particularly in the front and the sides or ends of the structure.

The invention has for a further object the provision of an electric bake oven of the character stated including one or more compartments or chambers and provided with a double door including inner and outer door members having link connections whereby said inner and outer members may be moved together upon their separate hinges to either open or closed position, thereby making it unnecessary to operate these door members separately.

A still further object of the invention resides in an electric bake oven of the character stated in which the door members and the casing therefor will be of such construction and arrangement that a secure and air tight connection will be provided between the door members and their respective casings when the door is in closed position.

With the foregoing and other objects in view, as will appear as the description proceeds the invention consists in the novel construction, combination and arrangement of co-operating elements as hereinafter more specifically set forth, claimed and shown in

the accompanying drawings forming a part 55 of the present application, and in which:

Fig. 1 is a vertical section through an electric bake oven constructed in accordance with the present invention.

Fig. 2 is a transverse section through one 60 of the baking compartments or chambers thereof with the double door in closed position.

Fig. 3 is a detail vertical section through a portion of the front of the oven with the double door in open position and indicated in closed position by dotted lines, said view being taken through the door casings for the respective door members.

Fig. 4 is a detail perspective view, partly 70 in section, showing the construction and mounting of the double door.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views, 1 indicates in general the outer metallic wall or casing, within which is located the inner wall structure 2 of the device, the inner structure being shown in Fig. 1 as resting upon the lower or bottom 80 member of the casing 1. This inner wall structure is formed so as to provide therein one or more baking chambers or compartments 3 open at one end, preferably the forward end, so as to provide a door opening 85 4 for each baking compartment or chamber 3. The inner wall is preferably a magnesia insulation structure and has its outer sides and top spaced from the outer casing 1 to provide an air space 5 around and above the 90 inner wall structure 2, as shown in Figs. 1 and 2 of the drawings. The upper member of the casing 1 is provided with an air outlet 6 for the air chamber 5. Each baking chamber 3 is preferably provided with a 95 lining 7 of metallic laths or the like and an electric coil or other heat radiating member 8 is provided in the bottom of each lined baking chamber 3 and a metallic cover 9 or the like positioned over the heat radiating 100 member 8 to form a floor for the baking chamber. The floor is in about the same plane as the lower wall of the door opening 4 for the baking chamber 3. Each floor or cover member 9 may be secured in position 105 by extending the rear edge 10 upwardly and securing the same to the rear member of the chamber lining 7, and offsetting down-

wardly the forward end 11 of the floor or cover member 9, so that said forward end 11 will rest upon the shoulder 12 provided therefor at the forward end of the baking chamber 3, as shown in detail in Figs. 1 and 3.

In the structure disclosed, the end members of the outer casing 1, as shown in Fig. 2 of the drawings, are set in and a wall 13 of cement or the like provided outwardly thereof and covered by tiling 14 or finished in any other suitable manner. These end members of the outer casing 1 are shown as being connected at their rear edges to angular supporting strips 15 carried on the inner face of the rear member of the casing 1, adjacent the ends of the structure. The forward vertical edges 16 of the end members of the outer casing 1 are turned inwardly at a right angle to form the forward corners of the structure. Angular corner strips 17 are provided for connecting the edges of the outer tiling structure 14 with the turned edges 16 of the end members of the outer casing 1, as shown in Fig. 2 of the drawings, said angular corner strips 17 extending across the end of the cement wall structure 13. It will be understood that the cement wall structure 13 is continued for the front of the device and front tiling 14 employed the same as for the ends of the device. It is therefore evident that the front as well as the ends of the outer casing 1 is given a finished appearance by the tiling 14 with the concrete wall structure therebetween. The air space 5 is also continued between the front member of the casing 1 and the inner wall structure 2 of the device.

At each door opening 4 the lower member 18 of the baking chamber lining 7 is raised from the shoulder 12 to the lower edge of the door opening 4 and then extended outwardly on substantially horizontal plane and seated in the upper row of front tiling 14, as shown at 19. The side members 20 of the lining 7 are extended to provide vertical closure ribs 21, the purpose of which will presently appear and then extended rearwardly slightly, turned outwardly at a right angle toward the ends of the structure, as shown at 22, for a short distance, then directed outwardly toward the front of the structure to form the side members of the door frame and finally turned toward the ends of the structure, and secured upon the outer face of the front tiling 14, as shown at 23. For the upper member of the door frame, a plate 24 is provided which extends from the front tiling 14 to the depending forward end 25 of the upper member of the baking compartment of the lining 7, the plate 24 having an inwardly and downwardly beveled lower face 26 adjacent the depending end 25 of the upper lining member 7, as shown clearly in Fig. 3 of the

drawings. As also shown in Fig. 3, an upper outer plate 27 is provided for the door opening 4 and secured to the outer face of the front tiling, said plate 27 having an inwardly directed lower edge projecting into the door opening 4 and provided with a downwardly beveled face 28. The edge 28 of the plate 27 overlaps the outer end portion of the plate 24. As shown in Figs. 3 and 4, a bottom plate 29 is provided for the frame of the door opening 4 and secured to the outer face of the front tiling 14, this plate 29 having a horizontal upper edge portion 30 projecting into the door opening 4 and resting upon the outer end portion of the lower member 18 of the lining 7.

The door frame structure just described is provided so that a double door may be employed for the baking compartment, this door being composed of an inner member 31 and an outer door member 32 with link connections between the door member, the link connections comprising end links 33 pivoted at their opposite ends to the door members 31 and 32, as shown at 34. These connecting links 33 work between the ends of the door members 31 and 32 and the end members 20 of the door frame structure, as shown in Fig. 2 of the drawings. The inner door member 31 has vertical grooves 35 in its inner face and adjacent its opposite ends to receive the vertical closure ribs 21, previously mentioned, and thereby contribute toward an air tight closure for the inner door member 31. This inner door member 31 also has a beveled upper edge 36 for snug engagement with the bevel surface 26 of the plate 24. The inner door member 31 has a depending flange 37 at its inner lower edge or corner portion for engagement with the upstanding portion 18' of the lower lining member 18, between the outwardly extended forward end of said member 18 and the shoulder 12, as shown in Fig. 3. It is also to be understood that the inner door member 31 is hinged at its lower outer edge or corner portion to the outwardly directed end of the lining member 18 forming the bottom member or sill of the door frame, the hinge being indicated by the numeral 38. The outer door member 32 is provided with an upper beveled edge 39 for snug engagement with the beveled surface 28 of the plate 29 when the door is closed. This door member 32 is provided with an outer flange 40 around its four edges, for engagement with the outer face of the door casing or frame when the door is closed. This door member 32 is hinged to the plate 29 at the lower edge of the flange 40 by a suitable hinge connection 41. Attention is also directed to the fact that the inner door member 31 has a cut-away portion or recess 42 in its outer face to avoid the horizontal portion 30 of the plate 29 when the door is in

its full open position, as shown by full lines in Fig. 3. It may also be stated that the door members 31 and 32 are both preferably constructed of suitable metal with a filling of magnesia 43 or the like.

It is believed that the foregoing paragraphs, taken in connection with the accompanying drawings, will give a clear conception of the manner of opening and closing the double door without interference with the circulation of the air in the air chamber 5 and without unnecessary cooling of the interior of the baking chamber or compartment 3. It will also be evident that when the door is closed an air tight connection is formed between each door member and the frame portion with which it is engaged.

It will be understood that by providing the air space between the oven chambers and the outer wall structure, the insulation in the walls will be kept dry and the outer wall, when formed of either metal or tile will be kept cool and if of a tile structure, will be prevented from cracking. It is also evident that the heating element in the oven chambers may be either at the bottom or at the top or at both bottom and top, if desired. A series of air outlet openings may be provided around the bottom of the oven near the outside edge and vents or air outlet openings in the back of the oven near the top. This will prevent the accumulation of dead air in the air chamber and permit proper circulation of air in said chamber, as will be readily understood.

While the full structure of the device has been shown and described in detail, it is evident that minor changes may be made therein within the scope of what is claimed without departing from the spirit of the invention.

What I claim, is:

1. An oven structure comprising an inner insulation wall, an outer casing spaced around said inner insulation wall to provide an air chamber, said insulation wall having a baking chamber formed therein, a double door including an inner door member for closing said baking chamber and an outer door member connected to said inner door member for closing and opening the outer casing opposite said baking chamber, and means for assuring an air tight engagement of said inner door and said outer door member with said inner insulation wall and said outer casing, respectively.

2. An oven structure comprising an outer casing, an inner insulation wall structure within said outer casing with an air space therebetween, a finishing wall structure surrounding certain sides of said outer casing, said inner wall structure being formed to provide baking chambers therein, a lining for each baking chamber, a heating member for each baking chamber, a covering floor

member over each heating member, said baking chambers and said outer casing having aligned door openings, a door frame for each baking chamber extending through the aligned door openings therefor, and a double door for each baking chamber, said double door comprising separate hinged inner and outer door members and link connections between said inner and outer door members.

3. An oven structure comprising an outer casing, an inner wall structure within said inner casing and composed of insulation material, said outer casing being spaced around said inner wall structure to provide an air chamber therebetween, said outer casing having an air outlet provided therein, said inner wall structure being formed to provide one or more baking chambers, said inner wall structure and said outer casing having opposite door openings, a door casing projected from each baking chamber through the outer casing, said door casing having inclined members, separate door members hinged upon said door casing for closing said inner wall structure at the door opening of the baking chamber and the outer casing, said door members having inclined portions for engagement with the inclined portions of each door casing, closure flanges carried by said door members for co-operation with said door casing to assure tight fitting of said door members, closure ribs and grooves for said inner door members, and link connections between said inner and outer door members to cause simultaneous opening and closing thereof.

4. An oven structure comprising an outer casing, an inner wall structure within said inner casing and composed of insulation material, said outer casing being spaced around said inner wall structure to provide an air chamber therebetween, said outer casing having an air outlet provided therein, said inner wall structure being formed to provide one or more baking chambers, said inner wall structure and said outer casing having opposite door openings, a door casing projected from each baking chamber through the outer casing, said door casing having inclined members, separate door members hinged upon said door casing for closing said inner wall structure at the door opening of the baking chamber and the outer casing, said door members having inclined portions for engagement with the inclined portions of each door casing, closure flanges carried by said door members for co-operation with said door casing to assure tight fitting of said door members, closure ribs and grooves for said inner door members, and link connections between said inner and outer door members to cause simultaneous opening and closing thereof, said inner door member being formed to avoid

projecting portions of the door casing and permit full opening of said door members.

5. An electric bake oven comprising an outer casing, an inner insulation wall structure within said outer casing with an air space provided therebetween, an inner lining within said inner wall structure to provide a baking chamber, a double door for said bake oven including an inner door member for closing a door opening in said baking chamber and an outer door member for closing a corresponding door opening in the outer casing, operative connections between said door members to cause uniform movement thereof to open and closed position, and means for assuring tight fitting of said door members when in closed position.

6. An electric bake oven comprising an outer casing, an inner insulation wall structure within said outer casing with an air space provided therebetween, an inner lining within said inner wall structure to provide a baking chamber, a double door for said bake oven including an inner door member for closing a door opening in said baking chamber and an outer door member for closing a corresponding door opening in the outer casing, operative connections between said door members to cause uniform

movement thereof to open and closed position, means for assuring tight fitting of said door members when in closed position, an outer covering for the side and front members of said outer casing, and finishing tile coverings for said plastic covering.

7. An electric bake oven comprising an outer casing, an inner insulation wall structure within said outer casing with an air space provided therebetween, an inner lining within said inner wall structure to provide a baking chamber, a double door for said bake oven including an inner door member for closing a door opening in said baking chamber and an outer door member for closing a corresponding door opening in the outer casing, operative connections between said door members to cause uniform movement thereof to open and closed position, means for assuring tight fitting of each door member when in closed position, an outer covering for the side and front members of said outer casing, finishing tile coverings for said plastic covering, and a protected heat radiating member within said baking chamber and beneath the floor thereof.

In testimony whereof I affix my signature.
JACOB HIEB.