

(No Model.)

F. H. VAN HOUTEN.

OVEN DOOR.

No. 524,362.

Patented Aug. 14, 1894.

Fig. 1.

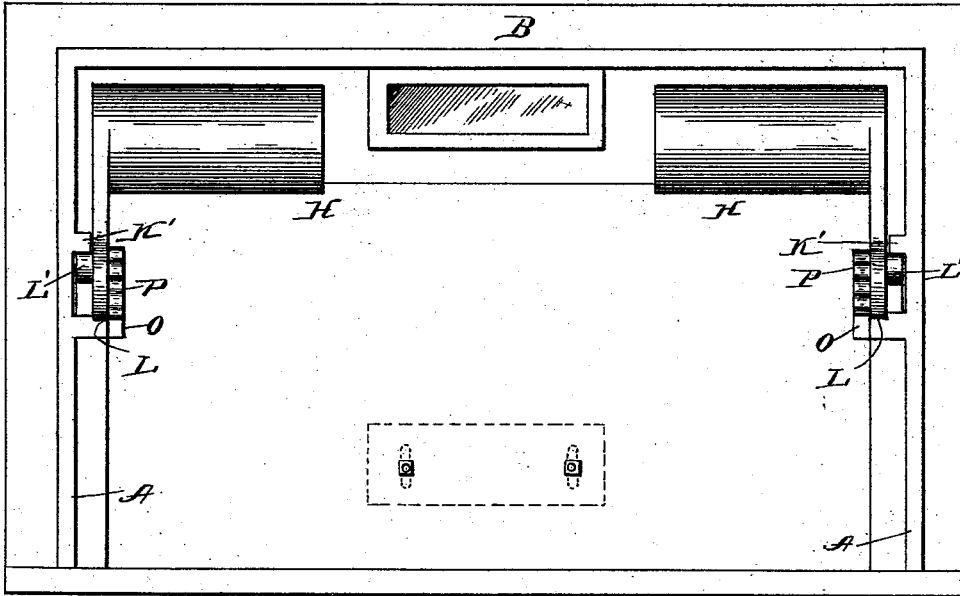
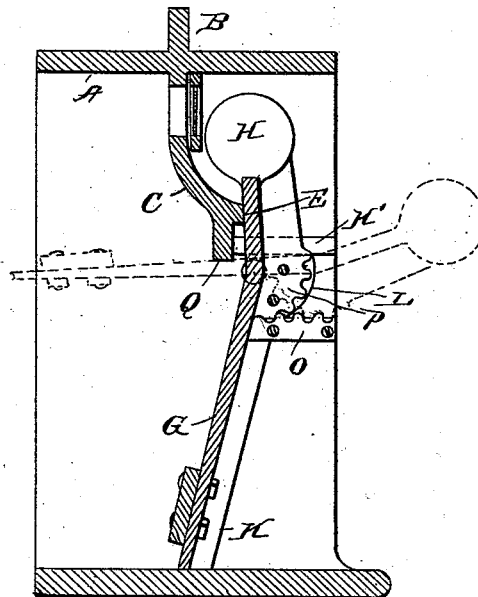


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANK H. VAN HOUTEN, OF FISHKILL-ON-THE-HUDSON, NEW YORK,
ASSIGNOR TO THE DUTCHESS TOOL COMPANY, OF SAME PLACE.

OVEN-DOOR.

SPECIFICATION forming part of Letters Patent No. 524,362, dated August 14, 1894.

Application filed July 21, 1893. Serial No. 481,129. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. VAN HOUTEN, of Fishkill-on-the-Hudson, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Oven-Doors; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in oven doors, more especially such as are used in bakers' ovens, the objects of the invention being to provide a simple structure, which will fit tight or close the doorway completely, not be liable to get out of order because of rough usage and variations in temperature to which it may be subjected, and further which will require little space in which to open and will not obstruct the doorway when opened.

Referring to the accompanying drawings:— Figure 1 is a front elevation of a door constructed in accordance with my invention. Fig. 2 is a cross sectional view of the same taken in a plane from front to rear.

Like letters of reference in both the figures indicate the same parts.

In carrying the invention into practice in the most simple, and as I consider it, preferable form, I provide a rectangular frame or jamb lettered A in the drawings, of convenient size for the oven of which it is to form a part.

For convenience in building the frame in with the brick work, it is provided with a wide flat base and a web B extending up around on the outside.

The frame is preferably made of somewhat greater height than the door opening proper, and a depending web C, is provided, having a peep opening or window at the center, closed by a pane of transparent material through which the interior of the oven may be inspected, and a forwardly projecting bearing surface E at the bottom against which the door closes to form a tight joint as will presently appear.

In doors intended for ovens, difficulty has been experienced because of the wearing of the supporting bearings which causes the door

to fit unevenly in the opening, thereby leaving cracks, &c., making the oven inefficient, and it is one of my principal objects to overcome this and other difficulties of a like nature. For this purpose, I form the door G to swing on horizontal centers and counterbalance it by means of the weighted upper portion H (cut away at the center so as not to obstruct the window) and the adjustable weight at the bottom, in such manner that when closed the major portion of the weights will be on one side of the pivotal centers and tend to hold the door closed, and when open, the weight will be so distributed as to keep the door open until given an impetus toward closing. This is secured partially by giving the door a slight bend backward about in line with its horizontal centers, thus when in closed position as shown in Fig. 2, the greater portion of the weight is back of the centers keeping the door closed tightly against the sill at the bottom and against the bearing surface E at the top of the door opening.

On the sides or jambs of the door frame, I form or attach horizontal bearing surfaces K, extending rearward parallel with the plane of movement of the door and upon the ends of the door I form or attach segments L adapted to rest on the straight bearing surfaces and form the supports or bearings for the door. The contact of the surfaces is a rolling contact as the door is opened or closed, and thus there is little or no wear.

To prevent any upward movement of the door, overhanging straight bearing surfaces K' are provided against the under side of which the pintles L' take a bearing should the door tend to ride up.

Inasmuch, as under some circumstances it may be found desirable to provide a means for preventing the door from getting out of alignment when being moved, I attach racks Q to the bearings K, and gear segments P to the other segments L for meshing with said racks, as shown in Fig. 2, thus even during its swinging movements the door is held in alignment and it is always brought back to its proper seat when closed.

A stop surface Q is provided at the extreme lower portion of the central web for limiting the opening of the door (see dotted lines Fig. 2).

A door constructed in accordance with this invention it will be seen, may be easily fitted, there are no loose parts to become lost or broken, and the manipulation is very easy, inasmuch, as the parts are so evenly balanced that when started the door will almost move of itself. The balance weight is made adjustable in order to insure a proper balance of each particular door, thus insuring a proper balancing of each door irrespective of the character of the castings.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a door for bakers' ovens, the combination with the frame having the straight horizontal bearing surfaces at each side, and running in a direction from front to rear of the door opening, of the weighted door having the segmental bearings resting and rocking on the straight bearings at the sides of the door frame; substantially as described.

2. In a door for bakers' ovens, the combination with the door frame having the bearings at each side, of the centrally pivoted door supported on said bearings and the weight on the upper end of the door working from one side to the other of the axis of rotation of the door, whereby the center of gravity is thrown on one or the other side of said axis, and the door is held in opened or closed position as the case may be; substantially as described.

3. In a door for bakers' ovens, the combination with the frame having the internal depending web and bearings at each side, of the door supported on said bearings to swing on the horizontal axis, and co-operating with the depending web and bottom of the frame to close the door opening, and the weight on the upper end of said door, working from one side to the other of the axis of the door, whereby the center of gravity is shifted and the door held in open or closed position as the case may be; substantially as described.

4. In a door for bakers' ovens, the combination with the door frame having the depending web and the horizontal bearing surfaces extending from front to rear at each side, of the door fitting against the depending web and base of the frame to close the door open-

ing, and the weight on the upper end of said door working up over the axis upon which the door turns; substantially as described.

5. In a door for bakers' ovens, the combination with the frame having the depending web and horizontal bearings extending from front to rear at each side, of the centrally pivoted door having the weighted upper end, the segmental bearings working on the horizontal bearings on the door frame and the adjustable weight on the lower portion of the door; substantially as described.

6. In a door for bakers' ovens, the combination with the frame having the horizontal bearings at each side and running in a direction from front to rear of the door opening and rack bars as described, of the door having the centrally arranged segmental rack and bearings as described, co-operating with and rocking on the racks and bearings on the sides of the door, to hold the door in line while being opened and shut; substantially as described.

7. In a door for bakers' ovens, the combination with the frame having the two horizontal bearings extending from front to rear at each side, of the door having the centrally arranged segments resting on the lowermost bearings at each side, and the pintles co-operating with the under side of the upper bearings to prevent the vertical displacement of the door; substantially as described.

8. In a door for bakers' ovens, the combination with the frame having the bearings at each side, of the door centrally pivoted in said bearings and having the upper portion cut away to admit of the formation of a window or peep opening below the level of the upper edge of the door; substantially as described.

9. In a door for bakers' ovens, the combination with the frame having the depending web provided with a central window or peep opening, the centrally pivoted door turning on a horizontal axis and having the center of its upper portion cut way over the window or peep opening; substantially as described.

FRANK H. VAN HOUTEN.

Witnesses:

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