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A. F. HARTER.
OVEN DOOR.
ORIGINAL FILED AUG. 15, 1921.

Fig. 1.

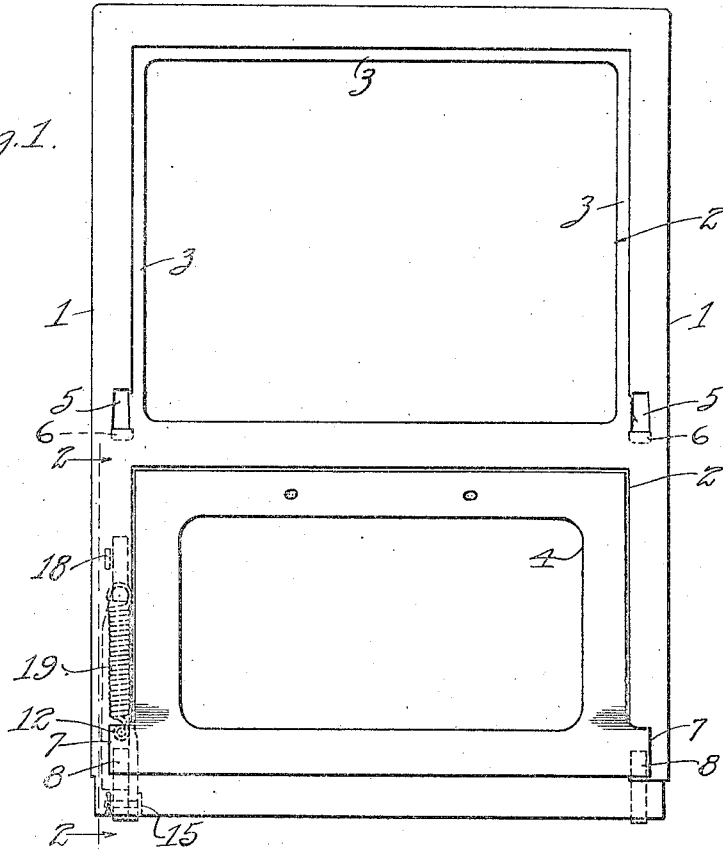


Fig. 2.

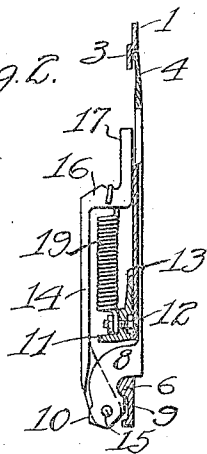


Fig. 3.

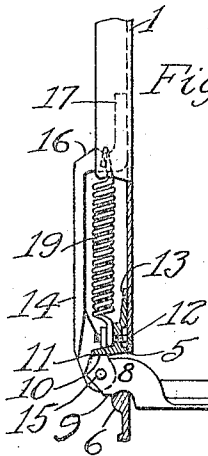
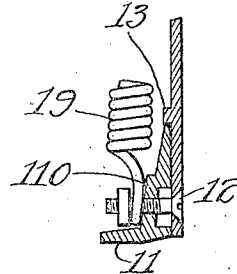


Fig. 4.



Witness:
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By J. M. Roberts, Esq. Atty.

UNITED STATES PATENT OFFICE.

AUGUSTUS F. HARTER, OF OAK PARK, ILLINOIS, ASSIGNOR TO CRIBBEN & SEXTON COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

OVEN DOOR.

Application filed August 15, 1921, Serial No. 492,250. Renewed November 25, 1922.

To all whom it may concern:

Be it known that I, AUGUSTUS F. HARTER, a citizen of the United States, residing at Oak Park, in the county of Cook, State of Illinois, having invented certain new and useful Improvements in Oven Doors, do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to doors for ovens of cooking stoves or ranges, and consists in the novel and useful constructions herein described and then pointed out in the appended claims.

In the accompanying drawings, which illustrate a practical embodiment of my present invention and in which the same reference numerals indicate similar parts in the different figures, Fig. 1 is a view in front elevation of the door-jamb of a gas-stove oven with the upper door omitted for simplicity of illustration; Fig. 2 is a detail sectional view on the line 2—2 of Fig. 1 with the parts in their positions when the lower door is closed; Fig. 3 is a similar view with the parts in their positions when the lower door is opened, and Fig. 4 is a detail view.

As shown the invention is applied to the frame of a gas-stove having an oven section composed of an upper baking oven and a lower broiling oven separated by the usual sheet-metal partition and provided with upper and lower door openings and doors, although it is to be understood that the improvements may be applied to drop doors for other forms of ovens in other types of stoves.

In the drawings the front frame or door jamb is designated by the reference numeral 1 and is provided with corresponding upper and lower door-openings 2. While it is to be understood that each of these openings in this type of stove is in practice provided with a drop-door constructed according to my invention, the door for the upper opening is omitted in the present drawings in order to simplify the illustration of the frame itself. The frame at its top and sides around each door opening is recessed or channeled on its outer face as at 3 to form a seat for the door 4 when the latter is closed. The upright members of the frame are pierced with rectangular openings 5 at the lower corners of the door-openings as shown, and preferably also are provided on their

inner faces with bearing lugs 6 at the lower ends of these openings serving as pivotal supports for the door and curved or rounded on their bearing faces. The associated door is provided on its front at its lower corners with lateral wings 7 overlying its openings 5 and having rearwardly extending curved trunnions 8 passing through the openings 5 and depending downwardly in the rear of the lugs 6. The trunnions are curved to fit the curvature of the lugs and are provided with forwardly extending ears 9 adapted to take under the lugs 6 and abut against the frame when the door is closed as shown in Fig. 2, and with rearwardly extending ears 10 adapted to abut against a suitable stop-piece 11 on the frame when the door is opened as shown in Fig. 3. The stop-piece 11 is preferably in the form of a bracket projecting rearwardly from the frame and bolted thereto as at 12 above the corresponding perforation 5 and held against displacement or stress vertically by a top lug 13. A bowed link 14 is pivoted at its lower end as at 15 to the inner end of the trunnion, and its upper end is angular and extends forwardly as at 16 into the vertical plane of the trunnion 8 and bracket 11, terminating in a runner 17 resting against and traveling on the inner face of the jamb against the guide 18. A coiled spring 19 is attached at its upper end to the angular portion 16 of the link and at its lower end to the bolt 12, tending by its stress to hold the door in the position of Fig. 2.

In practice the link mechanism may be applied to one or both trunnions of the door, being merely duplicated, but I prefer to employ it usually on the left side of the door as shown. When the door is closed the trunnions are moved inwardly by the bearing lugs to bring the lower end of the door against the sill of the frame with the wings 7 closing the openings 5, and the top and sides of the door seat in the channels of the frame so that the outer surface of the door is practically flush with the frame. The tension of the retractile spring holds the link down to exert stress or strain on the lower end of the attached trunnion to hold the door closed with the ears 9 against the frame. When the door is swung down the rocking of the trunnion through its opening raises the link to distend the spring and put

it under tension, with the parts as shown in Fig. 3; when the operator releases the door the spring contracts to close the door.

The wings 7 and inner trunnions 8 make an invisible hinge; the ears 10 act as a stop or brace to hold the open door level and flush with the oven-bottom; and the ears 9 provide an adjusting point to prevent the door going too far forward and not allowing enough play at its pivot, and they can be ground down or faced off to take up the joint. The bracket 11 may be beveled as at 110 to incline the spring toward the front of the frame, so that no keepers or clips need be employed for the upper end of the link.

I claim:

1. In a device of the class described, an oven having a front frame provided with perforations at the lower corners of its door-opening, a door having curved trunnions at its lower corners entering said perforations, a link secured at its lower end to one of the trunnions and having sliding engagement at its upper end with the frame, and a retractile spring secured at one end to the upper end of said link and at its other end to the frame.

2. In a device of the class described, an oven having a front frame provided with perforations at the lower corners of its door-opening, a door having curved trunnions at its lower corners entering said perforations, a bowed link secured at its lower end to one of the trunnions and having sliding engagement at its upper end with the frame, and a retractile spring secured at one end to the upper end of said link and at its other end to the frame above said trunnion.

3. In a device of the class described, an oven having a front frame provided with perforations at the lower corners of its door-opening, curved lugs at the base of the perforations, a door having wings at its lower corners provided with rearwardly and downwardly curved trunnions entering the perforations and engaging the lugs, a bowed link secured at its lower end to one of the trunnions below its lug and having sliding engagement at its upper end with the frame,

and a retractile spring secured at one end to the upper end of said link and at its other end to the frame above said trunnion.

4. In a device of the class described, an oven having a front frame provided with perforations at the lower corners of its door-opening, a door having curved trunnions at its lower corners entering said perforations, a stop-ear on the lower end of one of the trunnions, a link pivoted at one end to said trunnion and having sliding engagement at its upper end with the frame, a bracket on the frame in the path of the ear, and a retractile spring between the bracket and link.

5. In a device of the class described, an oven having a front frame provided with perforations at the lower corners of its door-opening, stops secured on the inner face of the frame above the perforations, a door having lateral wings at its lower corners closing the perforations when the door is closed, curved trunnions on the inner faces of the wings movable in the perforations, ears on the trunnions engaging the stops when the door is opened, a link pivoted at its lower end to the inner end of one of said trunnions, and a spring co-acting with said link and frame to normally hold the door in its closed position.

6. In a device of the class described, an oven having a front frame provided with channels in its outer face and with perforations at the lower corners of its door-opening outside the line of said channels, stops secured on the inner face of the frame above the perforations, a door constructed to lie within said channels and having lateral wings at its lower corners closing the perforations when the door is closed, curved trunnions on the inner faces of the wings movable in the perforations, ears on the trunnions engaging the stops when the door is opened, a link pivoted at its lower end to the inner end of one of said trunnions, and a spring co-acting with said link and frame to normally hold the door in its closed position.

In testimony whereof I affix my signature.

AUGUSTUS F. HARTER.