Nov. 14, 1933. H. H. HEIDBREDER 1,935,567

RANGE

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Fig. 1

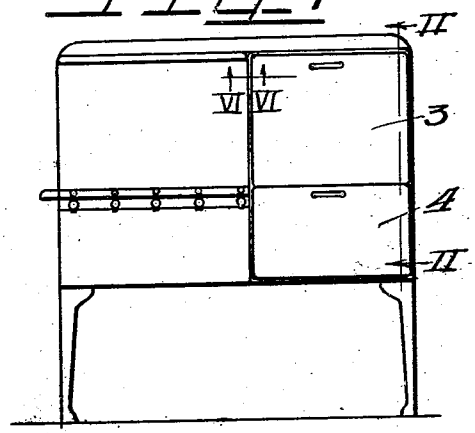


Fig. 5

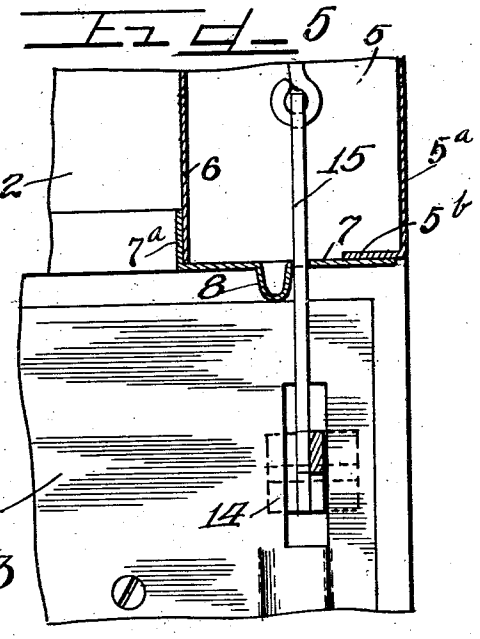
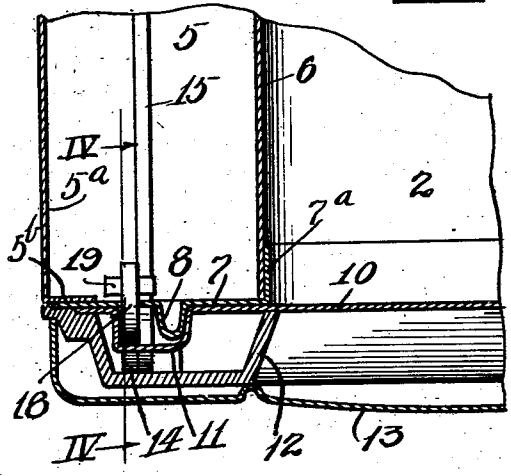


Fig. 3



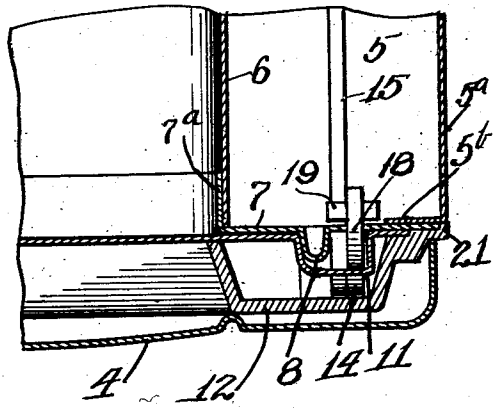


Fig. 6

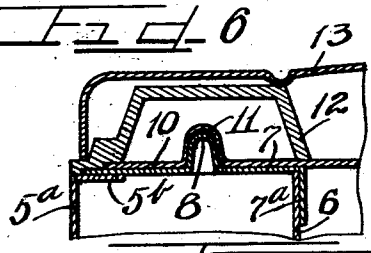
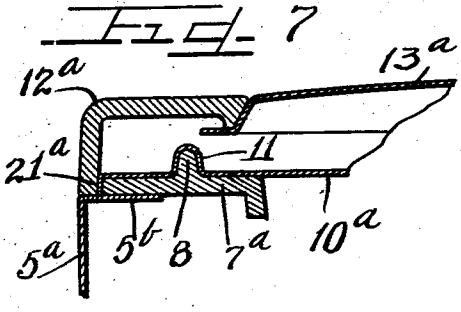


Fig. 7



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RANGE

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Fig. 2

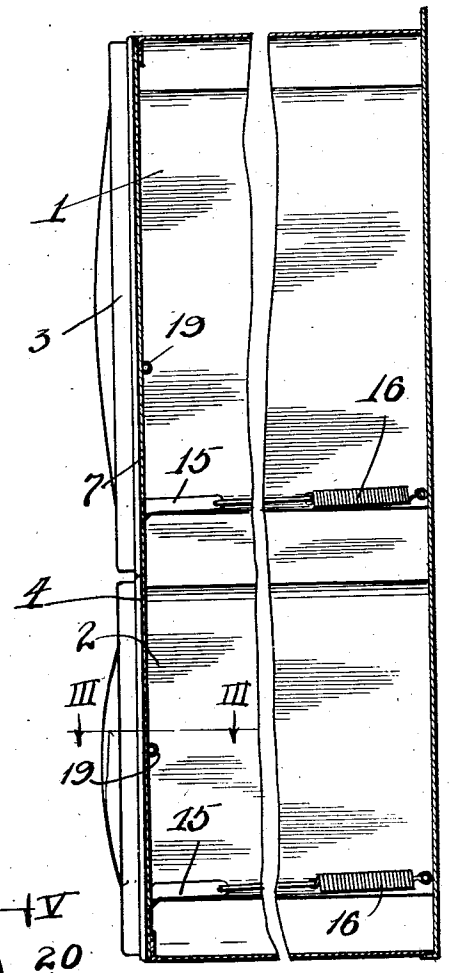
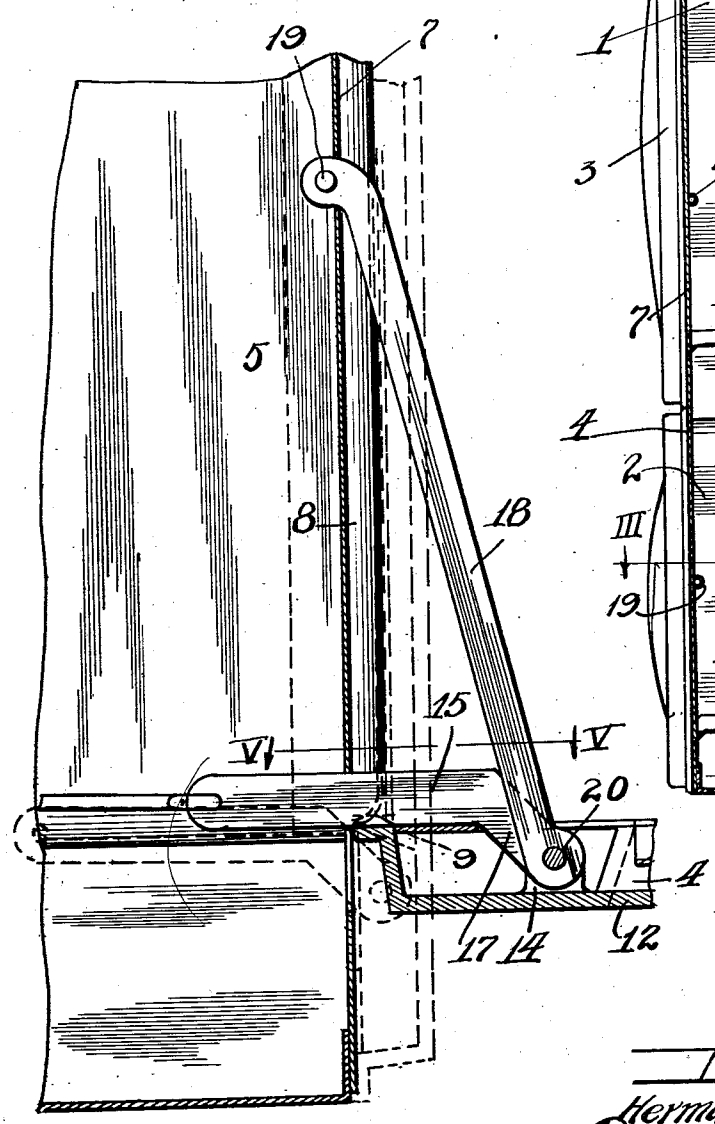


Fig. 4



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Patented Nov. 14, 1933 1,935,567

UNITED STATES PATENT OFFICE

1,935,567

RANGE

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Application May 18, 1929. Serial No. 364,067

13 Claims. (Cl. 126—39)

This invention relates to a range adapted for cooking, baking and broiling purposes.

As now constructed, such ranges usually have a frame or a border around the oven and broiler compartments to which the doors are hinged. Modern finishing methods with porcelain enamel frequently cause such borders to warp out of shape, and when the same are drawn into shape, the enamel finish is apt to chip or crack. This invention is designed to eliminate this objection in providing a door structure or closure that extends over such frames or borders.

A further feature of this invention exists in the provision of a dead air space upon the sides, and the top of the oven and broiler compartments to confine the heat and prevent the stove from becoming excessively hot.

A still further novel feature resides in the means and manner of hinging the doors.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claims.

In the accompanying drawings which illustrate a preferred form of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is a front elevational view of a range involving this invention.

Figure 2 is an enlarged sectional view taken substantially upon the line II—II of Figure 1 showing the door in elevation.

Figure 3 is an enlarged sectional view taken substantially upon the line III—III of Figure 2.

Figure 4 is an enlarged fragmentary sectional view taken substantially upon the line IV—IV of Figure 3, but showing the door in open position, and in dotted lines in closed position.

Figure 5 is an enlarged sectional view taken substantially upon the line V—V of Figure 4.

Figure 6 is a fragmentary sectional view taken upon the line VI—VI of Figure 1.

Figure 7 is a view similar to Figure 6 illustrating a modified form of structure.

In referring to the drawings which illustrate an embodiment of this invention, it will be noted that there has been illustrated a range having an upper oven 1 and a lower oven 2. The upper oven 1 is adapted to be closed by a door 3 while the lower oven is adapted to be closed by a door 4. These doors are supported in a similar manner and involve a similar operation. It will therefore only be necessary to describe one thereof. In Figure 3 there is shown in cross section the lower oven 2 and it will be noted that there is a dead air space 5 upon each side of the same. Each dead air space 5 is formed by the outer wall 5*a* of the range, which has an inwardly directed flange 5*b* and an interior wall 6. The dead air spaces of the two ovens are closed at their fronts by a front frame which may consist of sheet metal or cast iron or other metal constructions. In the present instance, sheet metal plates 7 are used. Each plate 7 has a lateral flange extending at right angles to the front face thereof for telescoping over the interior wall 6 of the air chamber. The outer margins of the plates 7 rest against the inturned flanges 5*b* of the outer wall 5*a*.

Each plate 7 is provided with an outwardly directed rib or bead 8 adjacent each oven compartment. Each bead 8 terminates at its lower end in a rounded shoulder 9 as shown in Figure 4 for a purpose that will later appear. Various constructions of oven doors may be used, and as a matter of illustration, there is shown in Figure 3 an inner plate member or lining 10 to which a pair of substantially U shaped frame members 12 are attached, one adjacent each lateral margin thereof. The lining 10 is provided with channellike guide ways 11 which are outwardly directed and which are located within the U shaped frame members 12. The outer surface of the door is formed by an ornamental plate 13 or the like. The U shaped members 12 have upstanding bearing lugs 14 to which the door operating mechanism is pivoted.

The bead 8 on the front frame extends across the top and down the sides of the oven and the channel 11 in the door is made to conform to the bead 8 as shown in Figure 6 across the top and down a portion of the sides of the oven. The channels 11 are only enlarged as shown in Figure 3 to accommodate the bars 18 of the door operative mechanism.

In each dead air space 5 there is a horizontal bar 15 which is anchored at its rear end to the rear wall of the range by means of a coil spring 16. The forward end of each bar 15 is downwardly inclined as indicated at 17 in Figure 4 and extends through a suitable slot in the plate

7 when the door is swung to its open position as shown in Figure 4. Each bar 15 is pivoted at its forwardly inclined end to a lug 14 on the adjacent frame member 12. The aforementioned bar 18 is pivoted coaxially with each bar 15. The upper end of each bar 18 extends through a slot in the plate 7 and is retained by a small stud 19 which is adapted for engaging the plate 7 adjacent said lug for anchoring the bar 18 thereto. It will be noted that the channel guideways 11 receive the bars 18 and that the ribs 8 also extend into these channel guideways 11. When the door is in its closed position as shown in dotted lines in Figure 4, the vertical bars 18 will lie in these channel guideways 11 as shown. It will be noted that the pivot 20 that supports the bars 15 and 18 lies a short distance from the lower end of the door or intermediate the ends of such door. When the door is swung downwardly into its horizontal and open position, the parts will assume the position shown in Figure 4 and the lower edge of each frame member 12 will engage or abut the shoulder 9 on the lower end of the ribs 8.

With reference to Figure 3, it will be noted that the door frame 12 overlaps the edge of the front frame as indicated at 21. This overlap and the fitting of the channel 11 over the bead 8, forms a seal for the oven which retains the heat and prevents the escape of steam and vapor from the oven, which frequently discolors the front frame of the stove and which is often more or less insantiary.

In its horizontal or open position the oven door 4 is held or supported at two spaced points, one point is at the axis 20 of the pivot that supports the vertical bar 18 and the other point is at the shoulder 9. Consequently the door will be firmly held in such horizontal position. It is evident that as the door is pulled downwardly or outwardly into its open position, the bars 15 will be pulled outwardly as shown in Figure 4 and put the springs 16 under tension. However due to the inclined arm portion 17 such springs will not be able to swing the doors shut from their open position. However, when an oven door is swung upwardly a short distance, to bring the parts off dead center, the springs 16 will become effective for automatically pulling the doors into their closed positions.

In Figure 7, there is illustrated a modified form of door structure and front frame. In that form the front frame is indicated by the reference 7*a*. It has an integral bead 8. The door embodies an angular border frame 12*a*, which overlaps the ends of the front frame as indicated at 21*a*. The front 13*a* is attached to one flange of the frame and the inner liner 10*a* is secured or welded to the other flange of the frame.

From the foregoing, it will be apparent that the border around oven doors has been eliminated since the doors completely cover the front frame and the construction is such that the ovens are effectively sealed by the doors. The novel feature of hinging the doors whereby they may be supported and maintained in a horizontal position to facilitate the entrance or removal of foodstuffs from the ovens is also important. It will be appreciated that the novel hinge construction for the doors will automatically swing the same into their closed positions after the same have been elevated a short distance from their horizontal positions due to the action of the springs 16. This will of course relieve the housewife of the necessary burden of lifting and closing the doors which are frequently quite heavy. It will further be evident that the doors are flush with the outer walls of ranges creating a neat and smooth finish.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. A stove having a plurality of compartments therein, and having a front surface surrounding each of said compartments, a closure member engaging said surfaces and adapted to close each of said compartments, said closure members extending to the marginal edges of said surfaces, whereby said surfaces are substantially entirely concealed by said members.

2. A stove having a plurality of compartments, a front frame, having openings therein for providing access to said compartments, a closure member for each of said openings, said members extending to the top, bottom and side marginal edges of said frame and concealing substantially the entire frame.

3. A stove having two compartments in superimposed relationship, a closure member for each of said compartments, said closure members extending to the extreme top and bottom marginal edges of the stove.

4. In a gas stove, a front framework defining entrances for a plurality of compartments, and a door for each entrance, said doors abutting and extending entirely to the edges of said framework to entirely cover and conceal such framework when the doors are closed.

5. In a stove structure of the class described, the combination of a vertical framework forming a supporting front for the stove structure and defining a plurality of compartments, a closure for each compartment, said closures meeting edge to edge in a common plane and forming an uninterrupted front covering for the stove structure entirely concealing every part of said framework.

6. A range having a plurality of ovens with spaced walls about said ovens forming compartments with the outer wall of said range, a front frame having door openings provided with lateral flanges telescoping the side walls of said ovens, and a door for each of said ovens, said doors having portions overlapping the edges of said frames flush with the side walls of said range for concealing said frames, whereby said ovens are sealed for preventing heat escaping therefrom when said doors are in a closed position.

7. In a door construction for ovens of ranges wherein the door completely covers the oven opening and the frame defining said opening when said door is in a closed position, a pair of bars having downwardly offset outer ends, said outer ends being hinged to said door above the bottom margin thereof whereby the bottom margin of said door lies below said hinge connection when the door is closed.

8. In a range having an oven with a lateral border on each side of said oven, an outwardly directed rib on each border adjacent said oven, hinged bars supported from said borders and a door pivoted to the lower end of said bars intermediate the ends thereof, said ribs having their lower ends rounded for engaging the lower end

of said door when the same is moved to horizontal position.

9. In a range having an oven with a lateral border upon each side of said oven, a door for closing said oven, said door having a pair of guideways located adjacent the border, hinged rods pivoted at their upper ends to said border and pivoted at the lower ends to said door and located in said guideways, and yielding means extending through said border and connected to said door for automatically closing the same.

10. In a range having an oven, a frame for said oven, a door for closing said oven, means including a pair of substantially vertical bars having their upper ends pivoted to said frame and their lower ends extending downwardly for suspending said door in a horizontal position, a pair of horizontal bars having their outer ends pivoted coaxially with the lower ends of said vertical bars, and resilient means for anchoring said horizontal bars to said range for swinging said door to a closed position when elevated slightly above the horizontal position.

11. In a range having an oven, a door for closing said oven, a plurality of lugs secured to said door, a plurality of substantially vertical bars having their lower ends pivoted to said lugs for suspending said door in a horizontal position, a plurality of horizontally extending bars having their outer ends pivoted to said lugs coaxially with said first mentioned bars, and resilient means secured to said horizontal bars for swinging said door to a closed position when elevated slightly above the horizontal position.

12. In a range having an oven, a frame for said oven, a door for closing said oven, a pair of U-shaped ribs on said frame contacting with said door for guiding and sealing said door to prevent the heat escaping from said oven when said door is in a closed position, said ribs having their lower ends rounded for engaging the lower edge of said door when the same is swung to open position, and hinged means for supporting said door for downward movement into horizontal position.

13. In a range having an oven, a door for closing said oven, a plurality of substantially vertical bars having their lower ends pivoted to said door for suspending said door in a horizontal position, a plurality of horizontally extending bars having their outer ends downwardly inclined and pivoted coaxially with the lower ends of said vertical bars, and a plurality of resilient members secured to said horizontal bars for moving said door to a closed position when elevated slightly above the horizontal position.

HERMAN H. HEIDBREDER.