Jan. 1, 1952 B. B. KAHN ET AL 2,580,927

STOVE

Filed Dec. 15, 1948

Fig-1

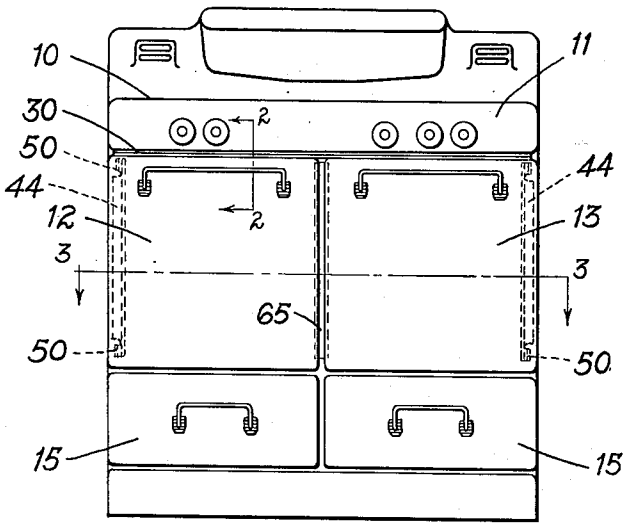


Fig-2

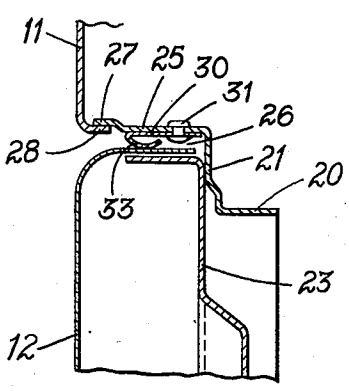


Fig-3

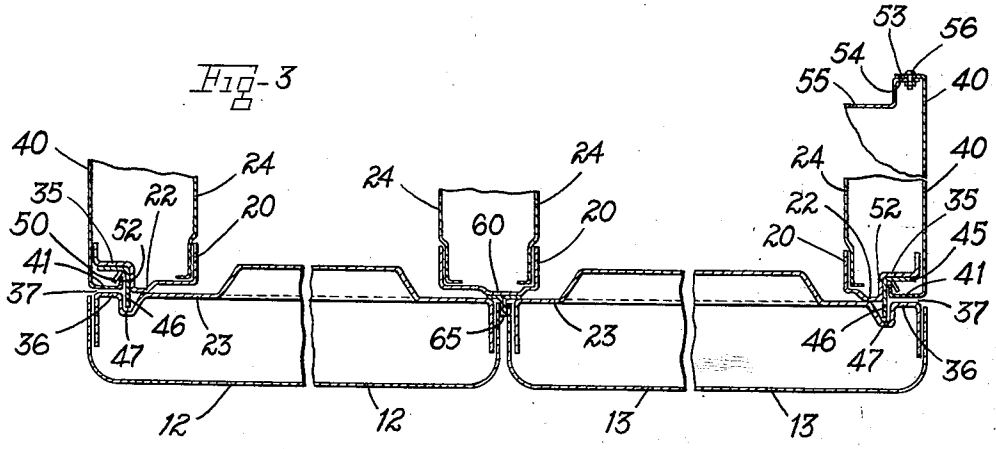


Fig-4

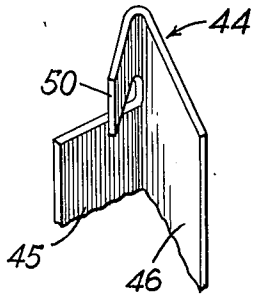
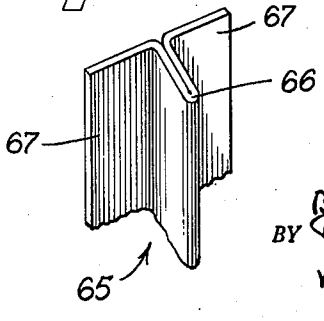


Fig-5



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Patented Jan. 1, 1952

2,580,927

UNITED STATES PATENT OFFICE

2,580,927

STOVE

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Application December 15, 1948, Serial No. 65,304

12 Claims. (Cl. 126—37)

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This invention relates to cooking stoves, and more particularly to an oven door construction for cooking stoves.

One of the principal objects of the invention is to provide a simple and economical oven door construction which will effectively seal the top and sides of the oven opening in a cooking stove against the escape of hot gases from within the oven around the door without the use of complex or expensive sealing members.

A further object is to provide an oven door construction wherein the sides of the door and the oven opening incorporate interfitting portions which cooperate substantially without actual bearing engagement with each other to form a tortuous passage obstructing the escape of hot gases from within the oven.

An additional object is to provide such an oven door construction wherein the body of the stove carries a sealing member which includes a portion cooperating with the front end of the side panel of the stove to retain the panel in proper position without the necessity for additional fastening means for the panel at the front of the stove.

It is also an object of the invention to provide an oven door construction for a gas range which includes a resilient seal above the door arranged inwardly of the junction between the frame and the front panel of the cooking top to prevent the passage of products of combustion from the oven into the cooking top where they may interfere with the proper operation of the cooking top burners.

Other objects and advantages of the invention will be apparent from the following description, the accompanying drawing and the appended claims.

In the drawing:

Fig. 1 is a view in front elevation of a cooking stove embodying an oven door construction in accordance with the invention;

Fig. 2 is an enlarged fragmentary section on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged broken section on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged fragmentary view in perspective of the upper end of one of the sealing members at the outer sides of the oven doors; and

Fig. 5 is an enlarged fragmentary view in perspective of one end of the sealing member between the doors of the stove.

Referring to the drawing, which illustrates a preferred embodiment of the invention, Fig. 1 shows a gas range provided with a cooking top 10 which includes a front panel 11 in which are

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mounted the usual valve controls for the cooking top burners and oven. The range is shown as provided with two ovens, the oven at the left hand side of the range having a door 12 and commonly being a broiling or meat-cooking compartment, and the other oven having a door 13 and commonly being the baking oven. Both doors are mounted at their lower edges for swinging movement on a horizontal axis with respect to the body of the range, and below each door is a drawer 15, one of which may be a broiler drawer.

Referring more particularly to Figs. 2 and 3, it will be seen that the main frame 20 at the front of the stove forms a pair of openings at the front of the stove which are adapted to be closed by the oven doors 12 and 13, and the frame includes portions 21 and 22 adjacent the outer sides and tops of the oven openings which receive corresponding portions of the door lining 23 in abutting contact when the doors are closed. The door lining 23 may be bolted or otherwise secured to the main door panels 12 and 13 in the usual way, and the oven liners are indicated at 24.

At the top of each oven opening, the frame 20 includes a flange 25 extending forwardly of the adjacent door-contacting portion 21, and these parts are so proportioned that the flange 25 extends above the upper edge of the door and in spaced relation therewith when the door is closed, leaving a space 26 therebetween as indicated in Fig. 2. This forwardly projecting flange 25 is off-set upwardly at its forward end 27 and overlaps a rearwardly projecting flange 28 along the lower edge of the panel portion 11 of the cooking top. The junction between these parts 27 and 28 is commonly left unsecured, the cooking top being bolted or otherwise secured to the frame at other positions in such manner that the parts 27 and 28 are held in substantial contact with each other.

In order to seal the space 26 across the top of the door against the escape of hot gases from within the oven, a sealing strip 30 is secured to the flange 25 between the frame portions 21 and 27, and this strip extends entirely across the front of the range above both of the doors 12 and 13, as indicated in Fig. 1. The sealing strip 30 includes a leg portion which is shown as riveted at 31 to the flange 25, and it also includes a resilient loop portion 33 which extends downwardly and rearwardly from the front edge thereof. This loop 33 is of such dimensions as to have resilient wiping contact with the upper edge of the door when the latter is closed and thus to form therewith a resilient seal for the space 26.

With this construction at the top of the door,

the sealing strip 30, which is of simple construction and easily installed, is carried by the body of the range out of direct view from in front of the range, but it provides an effective seal against the escape of hot gases past the top of the door. This arrangement is particularly desirable and effective in a gas stove, since with the strip 30 thus positioned between the interior of the oven and the junction between the flanges 25 and 26, it prevents the passage of products of combustion from the oven through this junction point into the cooking top, where the presence of such products of combustion is highly undesirable as tending to reduce the available supply of air required for proper operation of the cooking top burners.

Along each of the outer sides of the stove, the frame 20 is off-set rearwardly at positions laterally outside its door-contacting portions 22, each of these frame portions 35 thus being spaced from the corresponding portion 36 of the door lining and forming therewith a slot 37 opening laterally outwardly of the stove when the door is closed. The side panels 40 of the stove each include an inwardly turned front flange 41 which extends into the slot 37, these parts being so proportioned as to leave clearance between the flange 41 and the door lining when the inner part of the door is in contact with the frame portions 21 and 22 as shown in Fig. 3.

Sealing or baffle members 44 are provided for retarding the escape of hot gases from within the ovens through the slots 37, each of these sealing members having the form of an angle iron arranged longitudinally of one of slots 37. One leg 45 of the angle is welded or otherwise secured to the frame portion 35, and the other leg 46 projects forwardly of the stove to form a baffle extending beyond thhe adjacent door-contacting frame portion 22. The door lining is formed with a groove 47 arranged to receive the baffle 46 when the door is closed, and as shown in Fig. 3, this groove 47 is somewhat deeper than the width of the part of baffle 46 which extends beyond frame portion 22 so that when the door is closed, there is substantially no actual contact between the baffle 46 and the walls of the groove. However, since the baffle and groove interfit to cut off direct passage between the contacting portions of the door and frame and the outer end of slot 37, leaving only a tortuous passage through the groove and around the baffle, it has been found in practice that the escape of hot gases through the slot is effectively obstructed.

The sealing members 44 also serve as retaining means for the side panel 40 of the stove. The leg 45 of each member 44 is slotted near its upper and lower ends to provide tabs or tongues 50 which are bent forwardly to form grooves with the adjacent portions of baffles 46. The front flange 41 of each side panel which extends within the slots 37 is provided with a further flange 52 along its inner edge, and these flanges 52 are adapted to be received within the grooves formed by tongues 50. At its rearward edge, each side panel is formed with a flange 53 adapted to overlap a similar end flange 54 on the main back panel 55 of the stove. With this construction and arrangement, each side panel is readily mounted in position by fulcruming its front flange 52 in the grooves formed by the tongues 50 of the proper member 44, and then swinging the panel towards the body of the stove until its flange 53 is in proper overlapping relation with the back flange 54. The latter pair of flanges is then readily bolted together at 56 to complete this assembly operation.

Figs. 3 and 5 show the construction at the middle of the stove for sealing against the escape of hot gases from within the oven. The frame 20 includes a central portion which defines the inner sides of both oven openings and is formed forwardly at 60 to overlap laterally the inner edges of both doors 12 and 13. A sealing or baffle member 65 having a T-shape in horizontal section is riveted or otherwise secured to this frame portion 60 with its leg portion 66 projecting forwardly of the stove. Thus when the doors are closed, their inner edges contact the side wings 67 of this sealing member 65, while its leg portion 66 projects between the two doors and acts as a baffle retarding the escape of hot gases through the space between the doors in a manner similar to the baffles 46 at the sides of the stove.

The invention thus provides a simple and effective sealing construction for the top and sides of an oven door to obstruct the escape of hot gases from within the oven. Since the tendency for such gases to escape is greatest at the top of the oven, a resilient seal is provided across the top of the door, but this tendency is less at the lower positions along the sides of the door, and the interfitting groove and baffle arrangement described has been found to give adequate sealing. In addition, this construction is simple and economical to manufacture and install, and the arrangement and use of the side sealing members to retain the side panels of the stove in position further promotes advantageous results in production.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the sides and top of said opening positioned for abutting contact when said door is closed, said door and said frame including portions along a side edge of said opening extending laterally outwardly of said contacting side portions thereof in spaced relation with each other when said door is closed to form a slot opening laterally in the side of said stove, and means carried by said laterally extending frame and door portions arranged for interfitting relationship laterally outwardly of said abutting portions when said door is closed to obstruct the passage of gases from the interior of said oven through said slot.

2. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the sides of said opening positioned for abutting contact when said door is closed, said door and said frame including portions along a side edge of said opening extending laterally outwardly from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, one of said laterally extending frame and

door portions having a groove therein arranged longitudinally of said slot and laterally outwardly of said abutting portions, and the other of said laterally extending frame and door portions carrying a baffle member arranged to project within said groove when said door is closed to obstruct the passage of gases from the interior of the said oven through said slot.

3. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the sides of said opening positioned for abutting contact when said door is closed, said door and said frame including portions along a side edge of said opening extending laterally from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, one of said laterally extending frame and door portions having a groove therein arranged longitudinally of said slot and laterally outwardly of said abutting portions, and a baffle carried by the other of said laterally extending frame and door portions in position to project within said groove in spaced relation with the walls thereof when said door is closed to define with said groove a tortuous passage from said contacting side portions of said door and frame to the exterior of said stove for obstructing the passage of gases from the interior of said oven through said slot.

4. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions along a side edge of said opening extending laterally outwardly from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, a side panel extending rearwardly of said stove from said slot and including a front flange extending within said slot in overlapping relation with said laterally extending frame portion, a baffle member mounted longitudinally of said slot on said laterally extending frame portion and projecting forwardly therefrom, said baffle and said flange including interfitting portions cooperating to retain said side panel in position on said stove, and said laterally extending door portion having a groove therein arranged for interfitting relationship with said baffle when said door is closed to obstruct the passage of gases from the interior of said oven through said slot.

5. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions along a side edge of said opening extending laterally outwardly from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, a side panel extending rearwardly of said stove from said slot and including a front flange extending within said slot in overlapping relation with said laterally extending frame portion, and a sealing member mounted on said laterally extending frame portion longitudinally of said slot for obstructing the passage of gases from the interior of said oven through said slot, said sealing member and said front flange on said side panel including portions arranged in interfitting relationship to retain said side panel in position.

6. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions along a side edge of said opening extending laterally outwardly from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, a side panel extending rearwardly of said stove from said slot and including a front flange extending within said slot in overlapping relation with said laterally extending frame portion, said front flange on said side panel including a flange extending rearwardly therefrom, a sealing member mounted on said laterally extending frame portion longitudinally of said slot for obstructing the passage of gases from the interior of said oven through said slot, said sealing member including portions cooperating to form a groove opening forwardly of said frame, said rearwardly extending flange on said side panel being received within said groove to retain said side panel in position on said frame, and means for securing the rearward end of said side panel to said frame.

7. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions along a side edge of said opening extending laterally outwardly from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, a side panel extending rearwardly of said stove from said slot and including a front flange extending within said slot in overlapping relation with said laterally extending frame portion, a baffle member mounted longitudinally of said slot on said laterally extending frame portion and projecting forwardly therefrom, said door being formed with a groove adapted to receive said baffle member therein when said door is closed to obstruct the passage of gases from the interior of said oven through said slot, said front flange on said side panel including a flanged inner edge extending rearwardly of said stove, and said baffle member including a portion projecting forwardly of said frame at a position spaced laterally outwardly of said groove for interengagement with said flanged edge of said side panel to retain said side panel in position.

8. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions along a side edge of said opening extending laterally outwardly from said opening in spaced relation with each other when said door is closed to form a slot in the side of said stove, a side panel extending rearwardly of said stove from said slot and including a front flange extending within said slot in overlapping relation with said laterally extending frame portion, a baffle member mounted longitudinally of said slot on said laterally extending frame portion and projecting forwardly therefrom, said front flange of said side panel having a rearwardly extending flanged edge, said baffle including a portion forming a groove for receiving said flanged edge, means for securing the rearward end of said side panel to said frame, and said laterally extending door portion having a groove therein arranged to receive said baffle therein when said door is closed to obstruct the

passage of gases from the interior of said oven through said slot.

9. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the sides and top of said opening positioned for abutting contact when said door is closed, a flange on said frame adjacent the top of said opening projecting forwardly of said door-contacting portion thereof above the upper edge of said door and in spaced relation therewith when said door is closed, said door and said frame including portions along a side edge of said opening extending laterally outwardly of said contacting side portions thereof and in spaced relation with each other when said door is closed to form a slot opening laterally in the side of said stove, means arranged to form a resilient seal between the upper edge of said door and said forwardly projecting flange when said door is closed, and interfitting means carried by said laterally extending frame and door portions laterally outwardly of said abutting portions for obstructing the passage of gases from the interior of said oven through said slot when said door is closed.

10. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the top of said opening positioned for abutting contact when said door is closed, said frame including a flange extending forwardly of said door-contacting portion thereof above the upper edge of said door and in spaced relation therewith when said door is closed, a cooking top on said stove including a front panel positioned above said oven opening, said panel having a flange along the inner edge thereof extending rearwardly above said door when said door is closed and forming a junction with said forwardly extending frame flange at a position substantially forward of said door-contacting frame portion, and means arranged to form a resilient seal between the upper edge of said door and said forwardly projecting flange when said door is closed, said seal means being positioned between said junction and said contacting frame and door portions in the closed position of said door to prevent the passage of gases from the interior of said oven through said junction into said cooking top.

11. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the top of said opening positioned for abutting contact when said door is closed, said frame including a flange extending forwardly of said door-contacting portion thereof above the upper edge of said door and in spaced relation therewith when said door is closed, a cooking top on said stove including a front panel positioned above said oven opening, said panel including a flange along the lower

edge thereof extending rearwardly below and in overlapping relation with the forward edge of said forwardly projecting frame flange and terminating at a position substantially forward of said door-contacting frame portion to form with said frame flange a junction located forwardly of said door-contacting frame portion, and means arranged to form a resilient seal between the upper edge of said door and said forwardly projecting flange when said door is closed, said seal means being positioned between said flange on said front panel and said contacting frame and door portions in the closed position of said door to prevent the passage of gases from the interior of said oven through said junction between said front panel and said frame into said cooking top.

12. A cooking stove of the character described including an oven and comprising a frame forming an opening for said oven, an oven door hinged on said frame, said door and said frame including portions adjacent the top of said opening positioned for abutting contact when said door is closed, said frame including a flange extending forwardly of said door-contacting portion thereof above the upper edge of said door and in spaced relation therewith when said door is closed, a cooking top on said stove including a front panel positioned above said oven opening, said panel including a flange along the lower edge thereof extending rearwardly and forming a junction with the forward edge of said forwardly projecting flange at a position substantially forward of said door-contacting frame portion, and a sealing strip secured to said forwardly projecting flange between said junction and said door-contacting frame portion, said sealing strip including a resilient portion extending downwardly and rearwardly into wiping contact with the upper edge of said door in the closed position of said door to form with said upper edge of said door a seal preventing the passage of gases from the interior of said oven through said junction into said cooking top.

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