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RANGE FLUE STRUCTURE

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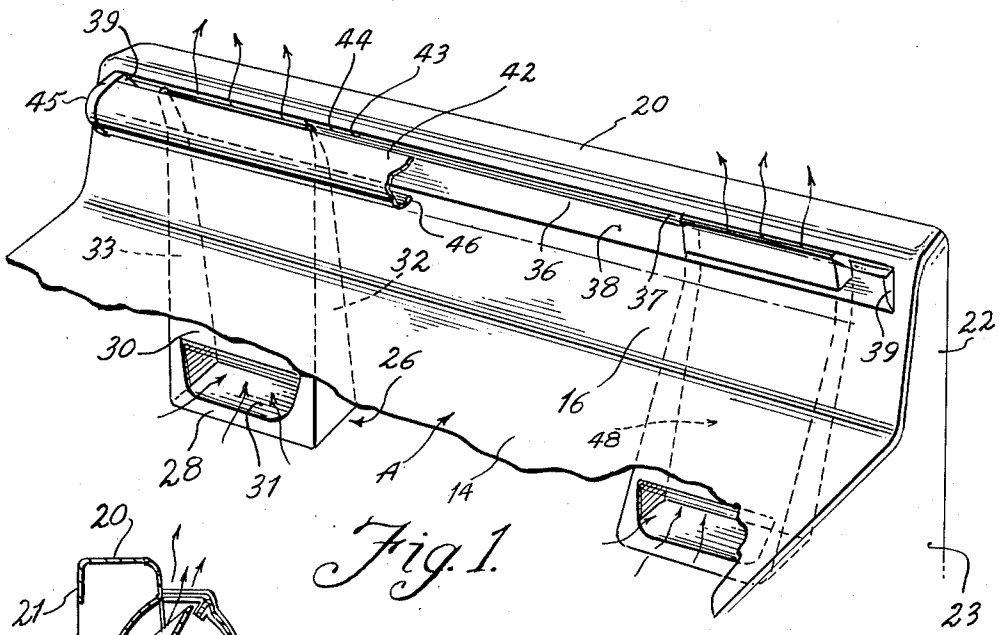


Fig. 1.

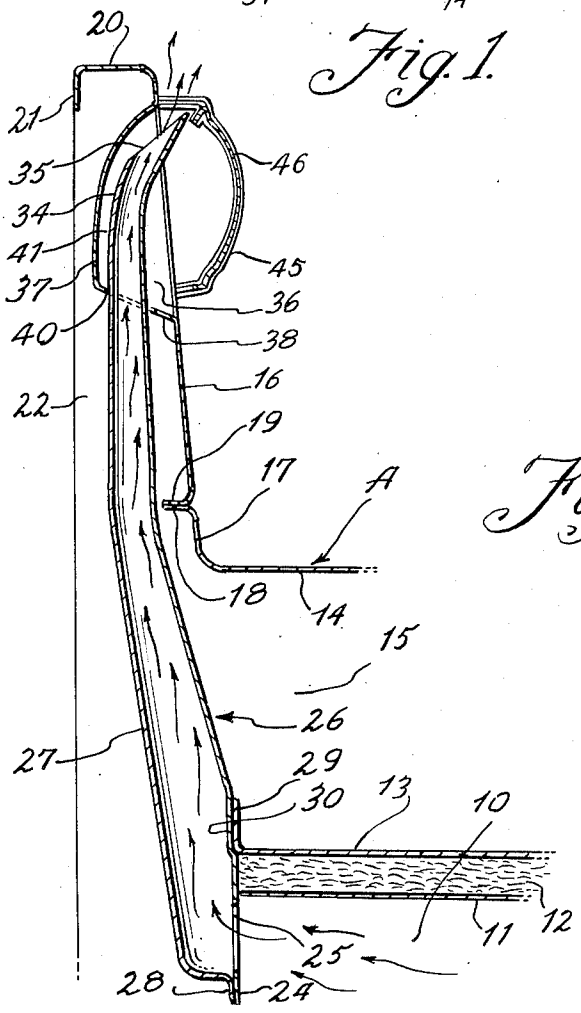


Fig. 2.

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RANGE FLUE STRUCTURE

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10 Claims. (Cl. 126—21)

This invention relates to vent structures such as are found in kitchen ranges, and more particularly to the oven vent or flue for gas stoves and cooking ranges

Considerable attention has been given to the problem of venting the ovens and/or broilers of cooking ranges. In the investigation of this problem it has been determined that the vents or oven flues should be located so that they are not obstructed and will not be restricted by accumulation of dust and dirt, etc., adjacent or within the flue. These factors have brought about designs in which the flue outlet is in the front of the stove and along the face of the back splasher thereof.

The result of such developments has been generally a marring of the appearance of the range with the unsightly flue outlets. Further, the hot flue gases discharging from the flue in the area of the back splasher has caused the back splasher to heat up excessively and moreover the flow of the hot gases if restricted at all brings about an additional build-up of the back splasher temperature. The flue outlets and back splasher adjacent these outlets have been difficult to clean and the accumulation of stain, etc., further contributes to the general unsightliness of the ranges.

It is accordingly an object of this invention to provide flue or vent structures particularly suited for use in kitchen ranges that will overcome the disadvantages present in prior art structures. Another object is to provide a concealed oven flue in the face of a range back splasher whereby the appearance of the range is not blemished by an unsightly flue, yet to arrange the flue so that the flow of hot gases therethrough is unrestricted and, moreover, so that the hot gases are directed outwardly and away from the back splasher. Still another object is in the provision of an oven flue that has an outlet in the face of the back splasher which is normally concealed by a light panel, the panel being removable whereby the flue and back splasher can be quickly, easily and thoroughly cleaned.

A further object is in providing an oven flue structure extending through the back splasher of the range but in spaced relation therewith so that there is substantially no metal-to-metal contact between the two and direct conduction of heat is thereby minimized. Yet a further object is to provide structure as described in which an opening of substantial size is provided about the flue so that cool air may circulate freely thereabout and, further, wherein the flow of cool air about the flue is induced by the discharge of the hot gases therefrom. Additional objects and advantages will appear as the specification proceeds.

An embodiment of the invention is illustrated in the accompanying drawing, in which—

Figure 1 is a broken perspective view showing a cooking range embodying the invention; and Fig. 2 is a vertical sectional view taken through substantially the center of the flue shown at the left in Fig. 1 and looking toward the right end of the range.

Shown in the figures of the drawing is a cooking stove

or range that is designated generally with the letter A. The range A may be substantially conventional insofar as the majority of the functional parts thereof is concerned and the range A is provided with a closed cooking compartment 10 that may be an oven or broiler compartment, etc. The compartment 10 is partially defined by an upper wall 11 that is covered with an insulation 12 to minimize the loss of heat from the compartment 10. A division panel 13 is mounted above the wall 11 in spaced relation therewith and the insulation 12 is confined between the two walls or panels 11 and 13.

The range A is also provided with the usual top wall 14 which will be provided with a plurality of burners, etc., which are not shown. The top is spaced above the division panel 13 and a compartment 15 is provided therebetween that will accept the necessary burners, conduits and support structures therefor, none of which are shown. Extending upwardly from the top wall 14 and at a slight inclination is a back splasher 16. If desired, the top wall 14 may have an upwardly-turned corner portion 17 equipped with a flange 18 and the flange 18 may be welded or otherwise rigidly secured to a rearwardly-turned flange 19 provided along the lower longitudinal edge of the back splasher 16.

The back splasher 16 inclines upwardly and rearwardly and along the upper edge thereof it is equipped with a rearwardly-turned top wall 20 that has formed integrally therewith a downwardly-turned flange 21 which is spaced from and rearwardly of the face or front of the back splasher 16. The back splasher is also provided with side walls 22 which merge with the side walls 23 provided by the stove or range A.

The oven space or compartment 10 is equipped with a rear wall 24 that is provided with an enlarged vent opening or discharge port 25 therethrough adjacent the wall member 11 defining the upper limits of the compartment 10. A vent or flue structure 26 provided by an open-ended conduit 27 communicates at the lower end thereof through the port or opening 25 with the interior of the oven compartment 10. Preferably the flue 26 is rigidly secured about the opening 25 so that all of the exhaust gases escaping from the compartment enter the flue 26 and are carried upwardly therethrough. This rigid sealing mounting about the opening 25 may be accomplished by equipping the conduit 27 with a downwardly-turned flange 28 that is welded or otherwise rigidly secured to the back wall 24 of the oven compartment. It will be appreciated that the conduit 27 will also be equipped with outwardly-turned flanges along the sides thereof which will be similarly secured to the back wall 24 of the oven compartment. In further providing a rigid structure it is seen that the divider panel 13 may have formed integrally therewith an upwardly-turned ledge or flange 29 that is in abutting relation with the wall portion 30 of the conduit 27 and the members 29 and 30 are rigidly united in any suitable manner.

By referring to Fig. 1 in particular it can be seen that the flue 26 can be considered as having an enlarged and substantially closed bottom end portion that is provided along the forward wall thereof with an opening 31 that is in register with the opening 25 provided in the rear wall of the oven compartment. From this enlarged end portion at the bottom of the flue 26 the side walls 32 and 33 thereof taper inwardly and upwardly and are of substantially an inverted V-shape. The upper end portion of the flue 26 narrows considerably and adjacent the upper end thereof it is curved forwardly as indicated at 34 in Fig. 2. The upper end of the flue is open to provide the discharge port or outlet 35.

Adjacent the upper longitudinal edge of the back splasher 16 the back splasher is pressed inwardly along the face thereof to provide the elongated recess or chan-

nel 36. The channel 36 is provided with an arcuate rear wall 37 that curves inwardly and downwardly and merges at its lower end with the outwardly and downwardly inclined bottom wall 38. The ends of the channel or depressed portion 36 are defined by the walls 39 (seen best in Fig. 1).

The bottom wall 38 of the channel or recess 36 is provided with an enlarged opening 40 therethrough that readily accepts the upper end portion of the flue 26. Preferably the opening 40 is considerably larger than the flue 26 at the area thereof that passes through the bottom wall 38 of the channel. It will also be noted that the rear wall of the flue is generally arcuate and is substantially parallel with the arcuate rear wall 37 of the channel 36. The flue and the wall 37 are spaced apart to provide an open flow channel 41 therebetween as seen in Fig. 2. The rear wall of the flue 26 terminates slightly below and inwardly from the face of the back splasher 16 and the arcuate wall 37 then provides in effect a continuation of the rear wall of the flue. On the other hand, the forward wall of the flue 26 extends upwardly and outwardly beyond the edge of the rear wall of the flue and as a result the flue opening 35 is inclined upwardly and forwardly.

The upper end portion of the flue 26 is substantially concealed by the elongated, arcuate panel 42 which extends from one end to the other of the back splasher 16 and substantially encloses or conceals the entire channel or recess 36. The panel 42 is provided with an upper longitudinal edge 43 which is spaced forwardly from the face of the back splasher 16 and thereby provides an elongated slot or opening 44 through which hot gases discharging from the flue outlet 35 may escape. The panel 42 is held in position enclosing the recess 36 and substantially concealing the upper end of the flue 26 by means of the holders or sockets 45 which are provided adjacent each end of the back splasher 16 and which are rigidly secured thereto. The panel 42 is releasably carried by the members 45 and for this purpose the members 45 are equipped with slots or recesses into which the end portions of the panel 42 may be inserted or removed therefrom. Mounting members of this character are well known in the art and for this reason a more elaborate description and illustration thereof is believed unnecessary. It will be noted in Fig. 1 that only one of the members 45 is illustrated, the other being removed so that the end portion of the channel 36 can be better illustrated.

The panel member 42 is frequently referred to as the light panel, for the light bulb or tube with which most ranges are now provided is mounted behind this panel. Such a light source will preferably be mounted intermediate the ends of the back splasher 16 but since such light sources may be wholly conventional and are well known in the art a showing and description thereof is not presented. The lower longitudinal edge portion 46 of the light panel 42 is spaced from the back splasher 16 as shown in the drawings so that light provided by the light source will be directed downwardly and outwardly along the face of the back splasher 16. If desired, the light panel 42 may be equipped centrally with a name plate so that the trade name or manufacturer's name may be presented at a convenient location on the range.

It will be noted in Fig. 1 that a pair of flue structures are provided. Such an arrangement is preferable where the range A is equipped with a pair of separated cooking enclosures or compartments. In such event it will be necessary to separately vent each of the enclosed cooking compartments. The flue structure appearing at the right of Fig. 1 is designated with the numeral 48 and since its mounting, function, etc., are identical with the flue 26 which has been described in detail a detailed description of the flue member 48 will not be set out.

In operation of the structure, when the burners provided for the cooking compartment 10 are lighted, the hot gases created within the compartment 10 flow outwardly through the opening 25 and into the flue 26 through the opening 31 in the forward wall thereof. The hot gases rise within the flue and eventually are discharged outwardly through the open upper end 35 thereof. In the event that a pair of cooking compartments are provided and a pair of flues, the same conditions take place within the flue structure 48.

The outlet 35 of the flue is oriented so that the hot gases escaping therefrom are directed forwardly and upwardly and away from the face of the back splasher 16. The flue 26 is spaced from the back splasher 16 and there is substantially no heating up of the back splasher through direct conduction of heat from the flue and to the back splasher. The rear wall 34 of the flue is spaced from the rear wall 37 of the recess or depressed channel portion 36. Thus there is sufficient clearance for the free circulation of air about the flue and such circulation of air will maintain the back splasher 16 in a relatively cool condition even through the flue structure 26 heats up considerably.

It will be noted that between the flue wall 34 and channel wall 37 a flow passage 41 is provided. When the hot gases discharge through the outlet 37 of the flue a nozzle effect is established and the flow of relatively cool air upwardly through the passage 41 is thereby induced. Thus while the oven or cooking compartment 10 is in use the hot gases flowing through the flue 26 and outwardly therefrom actually cause a flow of cool air upwardly and about the back splasher and upper end of the flue and these cool gases are effective to maintain the back splasher in a relatively cool condition.

The range provided is very attractive, for the unsightly flue and the outlet opening thereof is concealed by the elongated light panel 42 which extends substantially from one end to the other of the back splasher. Yet the panel 42 is releasably carried by the mounting members 45 and the back splasher, particularly in the areas of the flues, can be cleaned readily by simply removing the light panel 42 which provides access to the channel 36 throughout its entire length and also to the flues 26 and 48 which extend upwardly and through the back splasher.

While in the foregoing specification an embodiment of the invention has been set out in considerable detail for purposes of illustration, it will be apparent to those skilled in the art that numerous changes may be made in these details without departing from the spirit and principles of the invention.

I claim:

1. In a structure of the character described, a range equipped with a top wall and having a back splasher extending upwardly therefrom, said back splasher having an elongated depressed portion in the face thereof provided with a rear wall and with a bottom wall having an opening therethrough, and a flue adapted to communicate with an oven space and at its upper end extending through said opening and in spaced relation with the edges thereof, the upper end of said flue being spaced from the rear wall of said depressed portion whereby air is aspirated upwardly through said opening by the discharge of gases from said flue.

2. The structure of claim 1 in which said back splasher is equipped along the face thereof with an elongated panel substantially covering said depressed portion and enclosing said flue therein.

3. In a cooking range provided with an enclosed cooking compartment and having a top wall spaced thereabove, a back splasher extending upwardly from said top wall, a conduit communicating with the interior of said cooking compartment and extending upwardly therefrom, said back splasher being provided along the face thereof with a depressed wall portion providing a generally arcuate rear wall and a downwardly and forwardly inclined bottom wall, said bottom wall being provided with an enlarged opening therethrough communicating with the exterior of said range, the upper end portion of said conduit

extending through said opening and being arranged in spaced relation with the edges of said enlarged opening and with said arcuate rear wall to provide a flow passage therebetween, the upper end portion of said conduit being provided with an outlet opening oriented upwardly and forwardly, said conduit providing a flue for said cooking compartment and the discharge of hot gases from the outlet opening thereof being effective to aspirate air through said enlarged opening and said flow passage.

4. The structure of claim 3 in which said back splasher is equipped with spaced-apart mounting members, and in which a panel is releasably carried by said mounting members and substantially conceals said depressed portion and said upper end of said conduit.

5. In cooking ranges and the like equipped with a substantially enclosed cooking compartment and equipped also with a back splasher spaced above said cooking compartment, said cooking compartment being provided with an opening in a wall thereof, said back splasher being provided with an elongated longitudinally-extending recess in the face thereof, said recess having an arcuate rear wall and a downwardly and forwardly inclined bottom wall provided with an enlarged opening therethrough, an elongated flue communicating at one end with said cooking compartment through the opening in a wall thereof and adjacent its other end extending through the opening in said downwardly and forwardly inclined bottom wall, the upper end portion of said flue being generally arcuate and extending forwardly and upwardly, said flue being spaced from said arcuate rear wall and from the edge portions defining the opening in said downwardly and forwardly inclined bottom wall, whereby an upward flow of air is induced between said flue and said arcuate rear wall by the discharge of hot gases from said flue to tend to maintain said back splasher at a temperature below that of said flue.

6. The structure of claim 5 in which said back splasher is equipped with spaced-apart mounting members, and in which an elongated panel is releasably carried by said mounting members, said panel substantially covering said recess and concealing said flue.

7. The structure of claim 6 in which said range is equipped with a pair of cooking compartments each provided with a flue.

8. In a range having an oven and an upwardly extending back splasher, said back splasher having a depressed area in the face thereof providing a bottom wall having an enlarged opening therein, a panel carried by said back splasher in covering relation with said depressed area to define a chamber therein and having a slot at the top thereof aligned with said chamber to provide an outlet therefor, and a flue communicating with said oven and extending upwardly through said enlarged opening and chamber and terminating adjacent said outlet, said flue being spaced from the edges of said enlarged opening and walls of said chamber whereby the discharge of gases from said flue aspirates air through said opening and chamber about said flue.

9. In a range having an oven and an upwardly extending back splasher, said back splasher having an enlarged opening therein, a panel carried by said back splasher in covering relation with said opening to define a chamber thereabout and being spaced from said back splasher along the upper edge of said chamber to define a slot communicating therewith and providing an outlet therefor, and a flue communicating with said oven and extending upwardly through said enlarged opening and chamber and terminating adjacent said outlet, said flue being spaced from the edges of said enlarged opening and from the walls of said chamber whereby the discharge of gases from said flue aspirates air through said opening and chamber about said flue.

10. In a structure of the character described, a stove or the like equipped with a top wall and having a back splasher extending upwardly therefrom, said back splasher being provided with a depressed portion in the face thereof having an opening therethrough, and a flue adapted to communicate with an oven space and extending through said opening and upwardly through said depressed portion and in spaced relation with both, said back splasher being equipped along the face thereof with an elongated panel substantially covering said depressed portion and concealing said flue.

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