

June 20, 1950

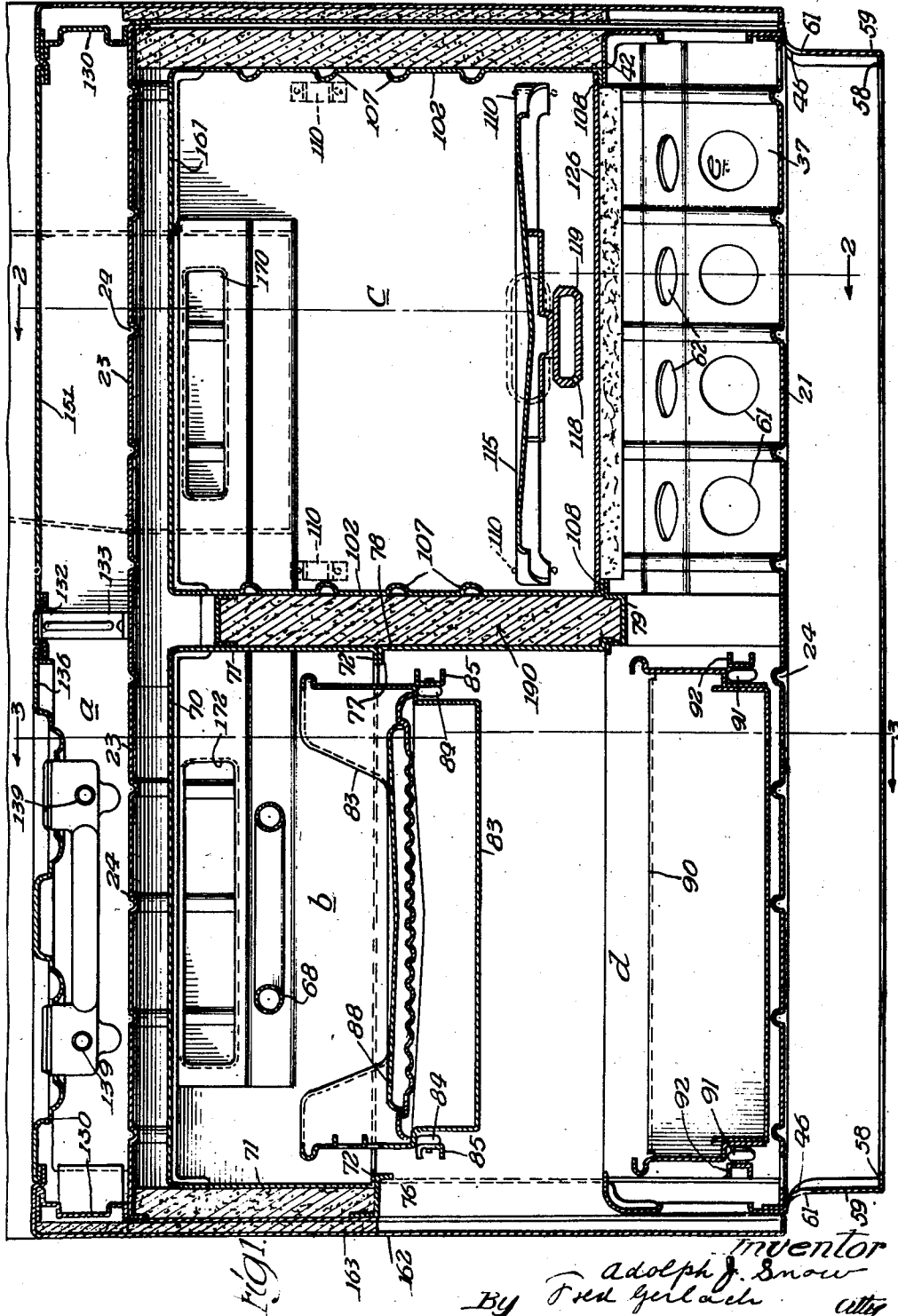
A. J. SNOW

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STOVE FRAME

Filed Nov. 29, 1946

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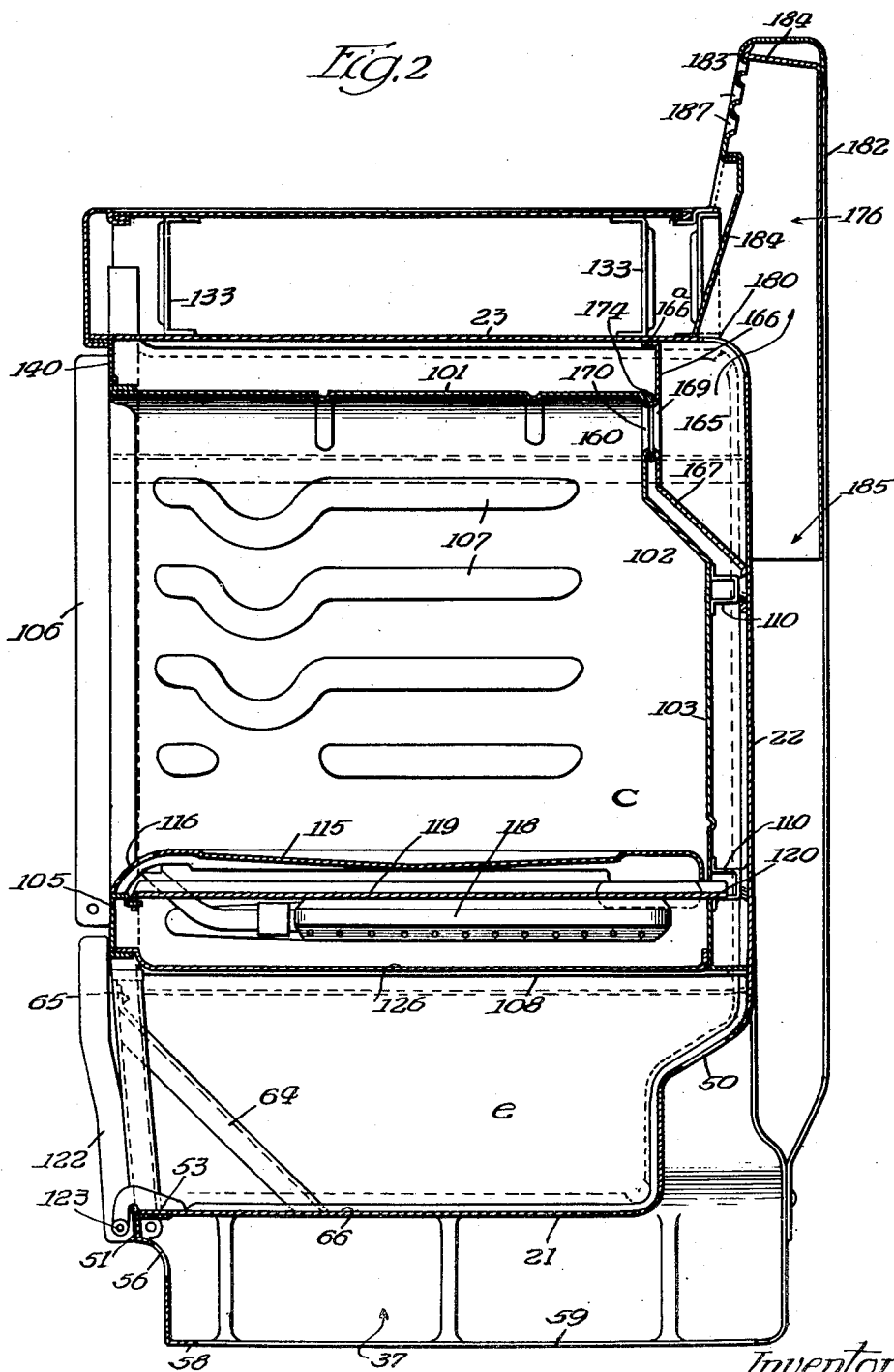
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STOVE FRAME

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Fig. 2



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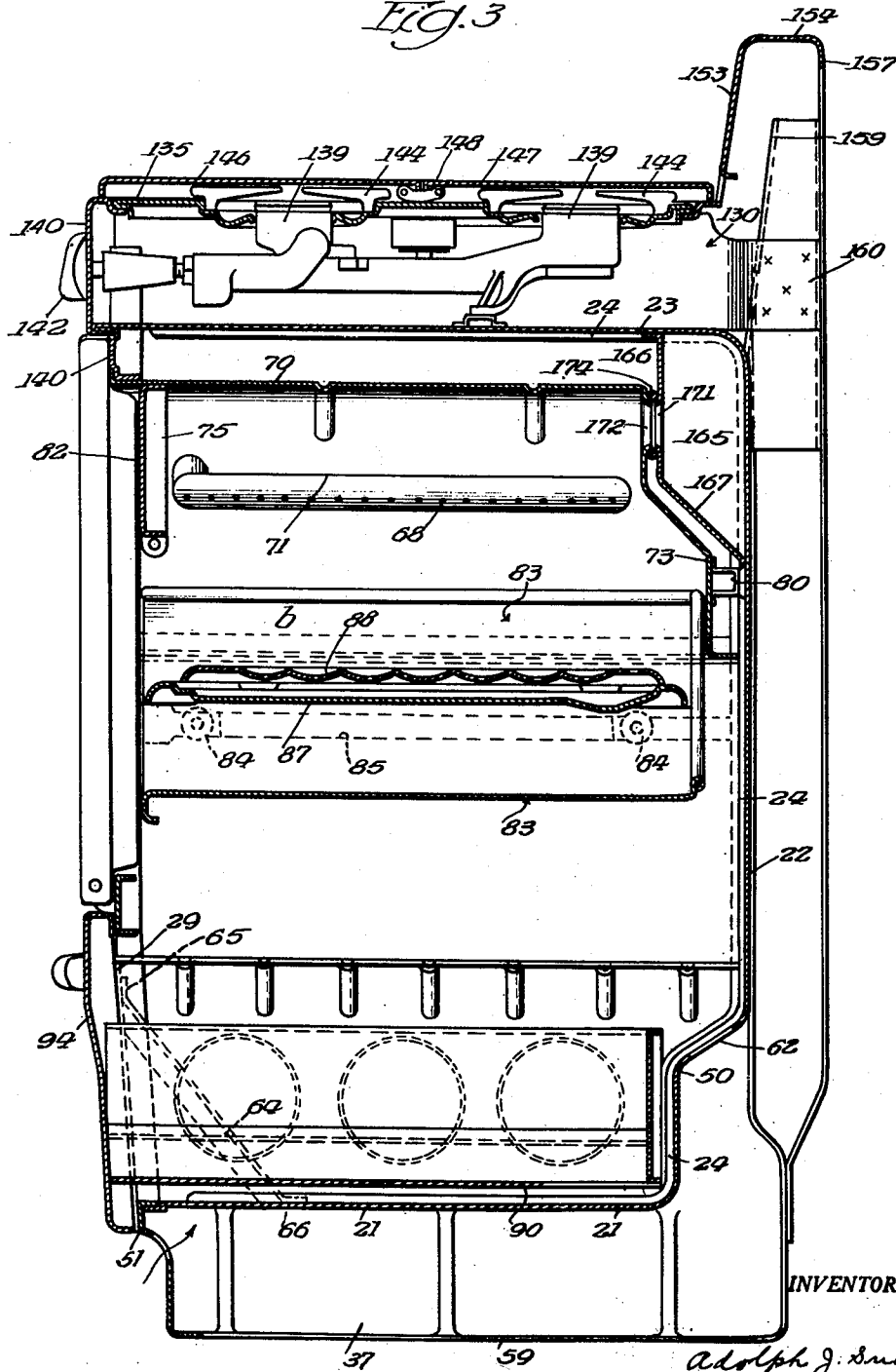
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Fig. 3



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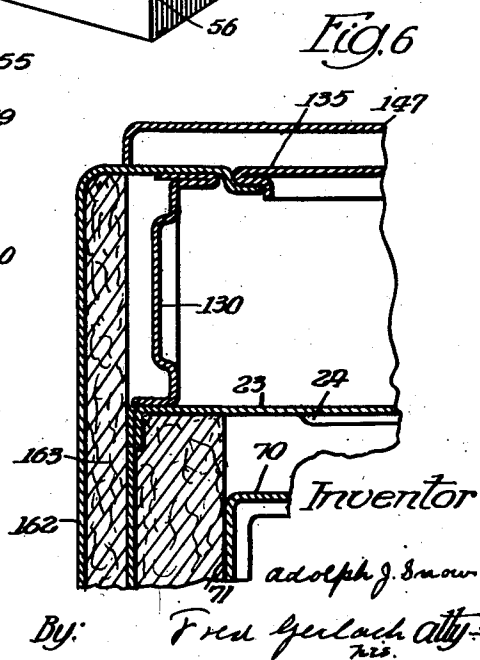
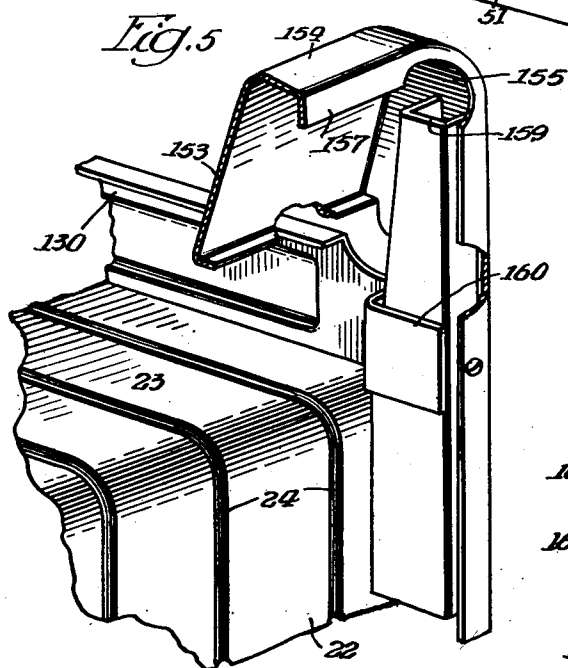
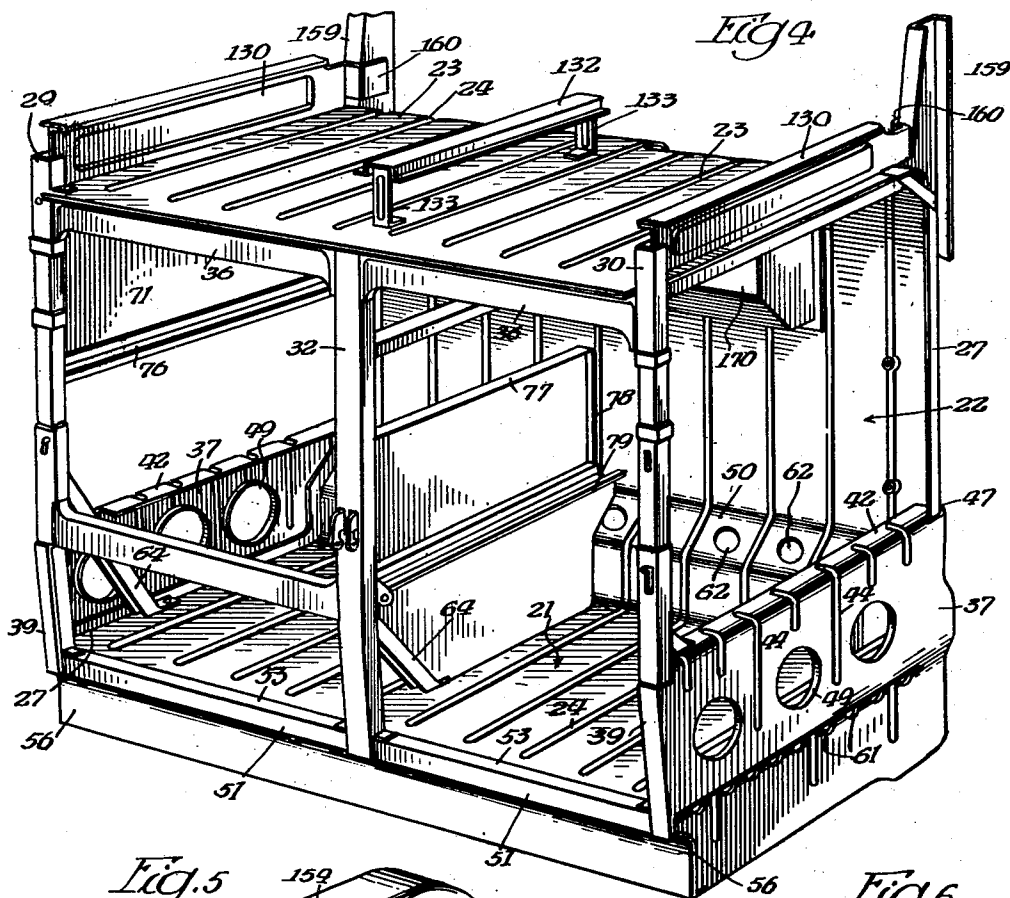
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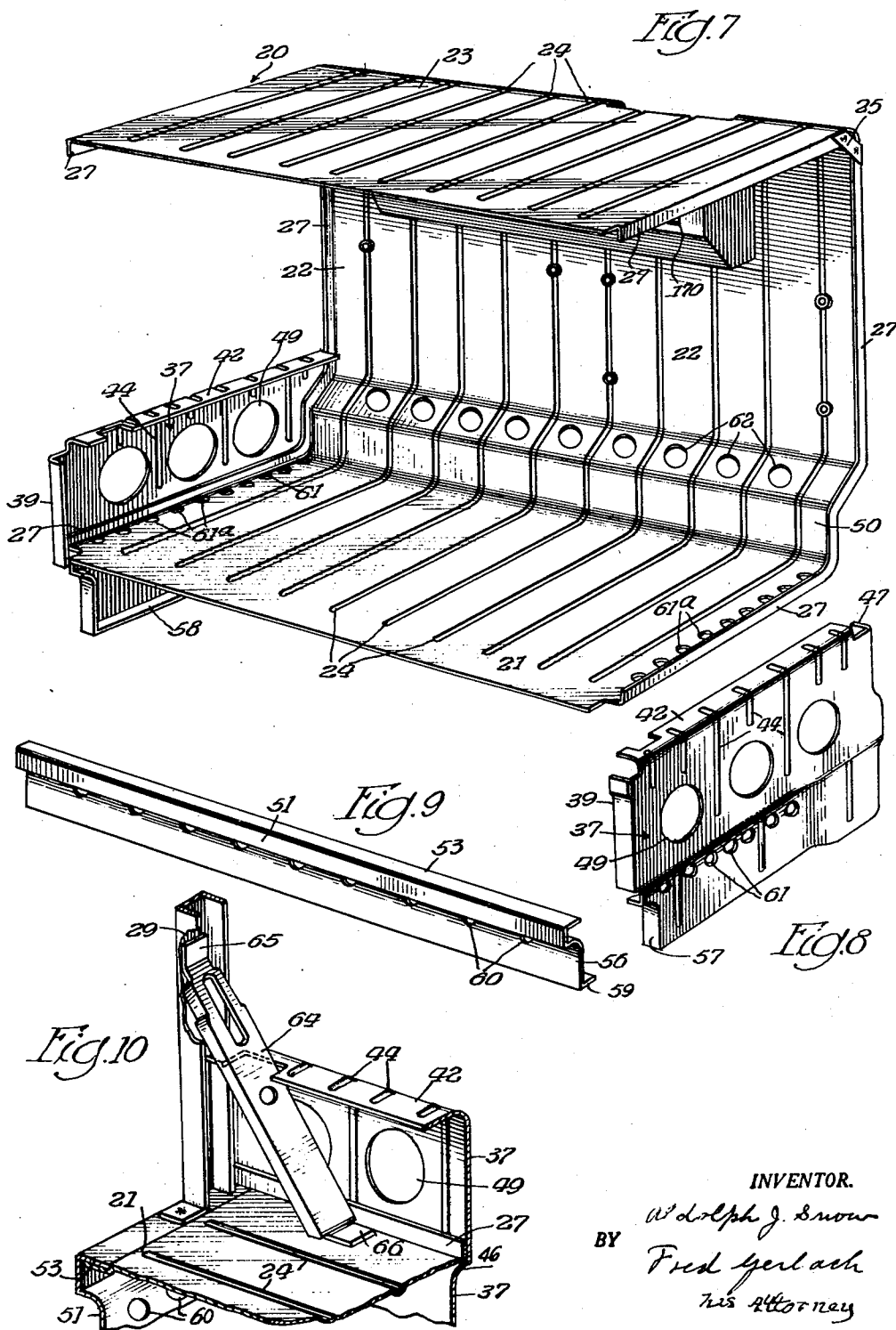
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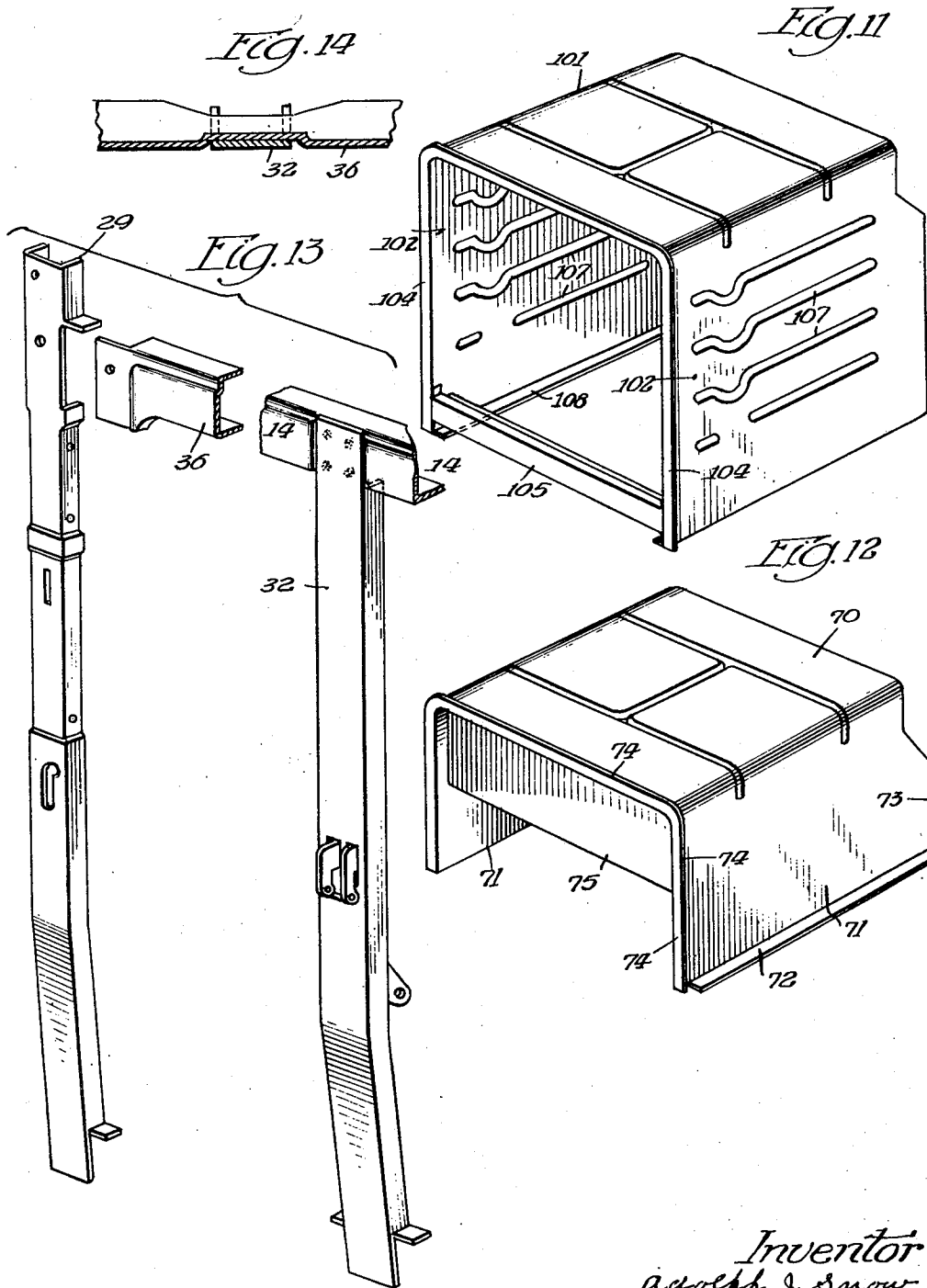
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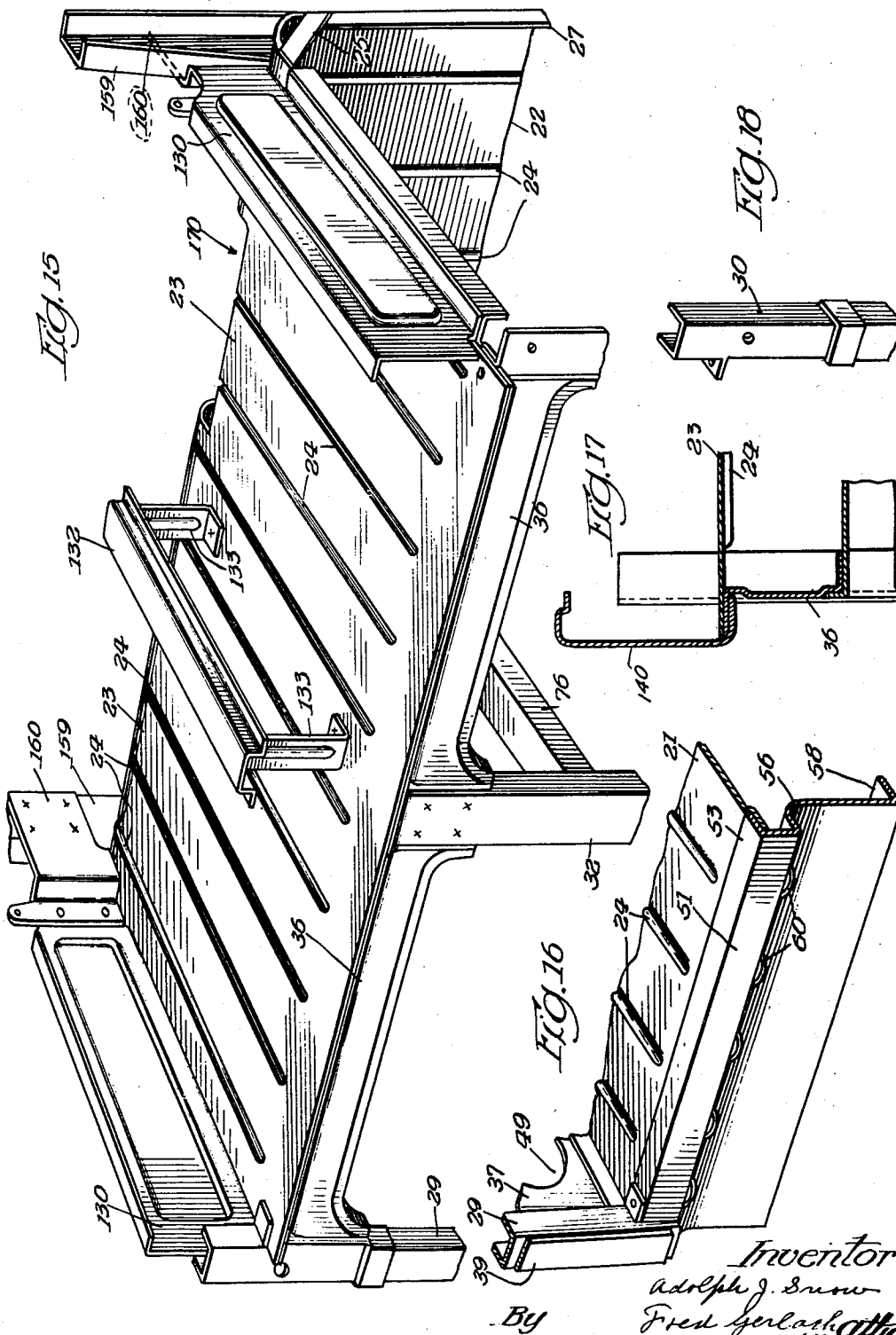
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STOVE FRAME

Filed Nov. 29, 1946

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UNITED STATES PATENT OFFICE

2,512,118

STOVE FRAME

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3 Claims. (Cl. 126—39)

1

This invention relates, in general, to stoves, but more specifically to the construction of cooking ranges.

One object of the invention is to provide a cooking range, the structural parts of which may be produced from sheet metal, for lightness in weight, and in which the parts are combined to provide a rigid frame structure.

Another object of the invention is to provide an improved cooking range in which the main structural element embodies a sheet metal wrapper with integral top, back and bottom members, and stiffening members, which wrapper is utilized with other sheet metal elements.

A further object is to provide an improved range of this character, which will be simple, durable, and light in construction, inexpensive to manufacture and assemble, and effective and efficient in operation.

To the attainment of these ends, and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed, and shown in the accompanying drawings exemplifying this invention, in which

Fig. 1 is a vertical, transverse sectional view of a range of this character, constructed in accordance with the principles of this invention, with parts omitted.

Fig. 2 is a vertical sectional view as taken on line 2—2, Fig. 1, through the oven compartment.

Fig. 3 is a vertical sectional view as taken on line 3—3, Fig. 1, through the broiler section.

Fig. 4 is a detail perspective view of the frame structure.

Fig. 5 is a detail perspective view, on an enlarged scale, of one corner of the oven wrapper structure and a portion of the "splash back."

Fig. 6 is an enlarged, detail sectional view of the front portion of the upper burner compartment.

Fig. 7 is a detail perspective view of the wrapper frame, with parts omitted.

Fig. 8 is a detail perspective view of a portion of one of the side walls of the wrapper frame.

Fig. 9 is a detail perspective view of a front channel bar for the wrapper frame.

Fig. 10 is a detail perspective view of one corner of the wrapper frame, also one of the supporting uprights and the brace for the upright.

Fig. 11 is a detail perspective view of the oven liner.

2

Fig. 12 is a detail perspective view of the broiler liner.

Fig. 13 is an exploded perspective view of some of the uprights, and a portion of one of the cross bars.

Fig. 14 is a detail sectional view on line 14—14, Fig. 13.

Fig. 15 is a detail perspective view of a portion of the wrapper frame, and the supporting members therefor.

Fig. 16 is a detail perspective view of a portion of the lower part of the wrapper frame, and supports therefor.

Fig. 17 is an enlarged, detail sectional view of the front panel, and supporting means therefor.

Fig. 18 is a detail perspective view of a portion of one of the upright members of the supporting frame structure.

The invention is exemplified in a cooking range of the cabinet type, which comprises generally a top-burner box or compartment *a*; a broiler compartment *b* below the top-burner box and at one side of the cabinet; a baking or oven compartment *c* at the other side of the cabinet; a utensil drawer in a compartment *d* below the broiler compartment; and a warming compartment *e* below the compartment *c*; all of which are enclosed by the range body.

The body structure comprises a wrapper of sheet metal, generally designated 20 (Fig. 7), which consists of an integral and primary structural element that extends below, back of, and over the compartments, and from end to end of the cabinet and the bottom of the burner box. This wrapper includes a horizontally extending bottom member 21, a back member 22, and a top member 23, which are formed of a single sheet of material, such as metal. These members are provided with embossed ribs 24 which extend transversely and vertically, turned flanges 27 at their ends, and gusset plates 25 for stiffening the wrapper, and adapting it for structural support. The front end of top member 23 of the wrapper is rigidly supported by corner posts 29 and 30, and an intermediate post 32, all preferably of channel cross-section, and of sheet metal.

The front end of the top member 23 of the wrapper is supported by channel bars 36 of sheet metal, and extending between the upper portions of corner posts 29 and 30 and the intermediate post 32, to all of which it is secured, preferably by welding, and forms a rigid upper front corner structure.

Lower panels 37, which are formed of sheet

3

metal, provide structural ends for the lower portion of the wrapper, and these panels 37 are each provided with a vertically extending flange 39 which laps and is welded to the front faces of the respective corner posts 29 and 30, and is also provided with a rear vertically extending flange 47 which laps and is welded to the wrapper frame. Each end panel 37 is provided with an intumed top flange 42, for stiffening purposes, and is reinforced by ribs 44, embossed therein, and the panels form transverse structural connections between the front corner posts 29 and 30 and the bottom member 21 of wrapper 20. Each panel 37 extends below bottom member 21 of the wrapper, and is provided with an inset ledge 46 which underlies the end margins of said bottom member 21. The flanges 27 on bottom member 21 are secured, preferably by welding, to the inner faces of end panels 37 above ledges 46; the vertically extending flanges 47 fit against and are secured, preferably by welding, to the back wall 22 of the wrapper (Fig. 4), and at its front end the flange 39 fits and is secured to the front of the respective corner posts 29 and 30. Openings 49 are formed in the end panels 37 for the convenient insertion of welding tools during the fabrication of the frame structure. The lower rear corner of the wrapper is angularly inserted or deflected inwardly, as at 50, to provide a space which may be utilized for fuel supply connections to the range or other parts.

The bottom member 21 is supported in spaced relation from the floor by the lower portions of the end panels 37 which extend below member 21, and also by a front channel bar or member 51. Bar 51 is formed of sheet metal and provided with an upper flange 53 on which the front margins of the bottom member 21 of the wrapper fit. The edge of the member 21 preferably abuts this front wall of the bar 51 (Fig. 16). The lower portion of bar 51 is deflected inwardly or inset, as at 56, and its ends conform to, abut against, and are welded to inset portion 57 (Figs. 4 and 9) on the front ends of the lower portion of end panels 37. Bar 51 is also provided with a bottom flange 58, and each end panel 37 is also provided with a bottom flange 59, which flanges are adapted to rest on the floor. Front base bar 51 and the lower portions of end panels 37 are respectively provided with openings 60, 61, for the circulation of air under the bottom member 21 of the wrapper. The openings 61a in the bottom member 21 of the wrapper permit air to enter the compartment in the wrapper. The back member 22 of the wrapper is also provided with openings 62, for admitting air into the wrapper from the back thereof, at the inwardly deflected or inset portion 50. The corner posts 29 and 30 are additionally secured to the bottom member 21 of the wrapper by braces 64 (Fig. 10) which are channel-shaped in cross-section, extend through flanges 42 of end panels 37, and have their upper ends secured, preferably by welding, as at 65, to the inner faces of posts 29 and 30, and their lower ends are secured, as at 66, to the bottom member 21 of the wrapper.

The space between the left-hand corner post 29 and the center post 32 is utilized for the broiler compartment b and the utensil drawer compartment below the broiler compartment. The space between intermediate post 32 and the right-hand corner post 30 is utilized for the baking compartment or oven c and the warming compartment e.

The sheet metal wrapper and posts exemplify 75

4

a structural frame for a range, which is essentially formed of sheet metal, is extremely rigid and light in weight, and adapted for economical quantity production.

The broiler compartment b has a liner which is formed of sheet metal and comprises a top wall 70 which is spaced from the top member 23 of the wrapper, side walls 71 which are provided at their lower ends with flanges 72, a back wall 73, and a front out-turned flange 74 around top wall 70 and side wall 71, which is adapted to fit against the front face of corner post 29 and intermediate post 32. A panel 75 extends across the upper portion of the front of said liner, rearwardly of flange 74, and forms a baffle for the front upper portion of the broiler compartment b. A burner 68 for the broiler is suitably supported in the upper portion of the broiler liner. Flange 72 on one side wall 71 fits on and is supported on an angle bar 76 which extends between and has its ends welded to the back face of corner post 29 and the back wall 23 of the wrapper. Flange 72, at the other side of the broiler liner, fits on an intumed flange 77 of a plate 78 which has its front end welded to center post 32 and its rear end welded to back wall 22 of the wrapper. A channel bar 79 extends between and is welded to the central portion of the back wall 22 of the wrapper and the intermediate front post 32. The plate 78 and bar 79 form a structural stiffening element between center post 32 and the back of the wrapper, as well as a support for the liner for the broiler compartment. The back wall 73 of the broiler liner has welded thereto a pair of spacers 80 which are secured, in any suitable manner, to the back wall 22 of the wrapper.

The back wall 73 of the broiler liner is spaced from the back member 22 of the wrapper, for minimizing heat transfer between the broiler compartment and the back of the cabinet. The broiler liner is open at its front, and a hinged door 82 provides access to and a closure for the broiler compartment. A broiler drawer 83 is mounted for transverse movement into and out of the broiler compartment on rollers 84 which are mounted on bars 85 which are secured in any suitable manner in the broiler compartment. A broiler pan 87 is slidably mounted for movement into and out of drawer 83, and is provided with a top grid 88.

A drawer 90 for storage of utensils is slidably mounted below the broiler compartment. Drawer 90 is mounted on rollers 91 which are carried by transverse bars 92 which have their front ends secured, respectively, to posts 29 and 32, and their rear ends welded, or otherwise secured, to one of the end panels 37 and the rear member 22 of the wrapper. A door 94, which is fixedly secured to drawer 90, forms a closure for the front end of compartment e.

The baking compartment or oven c has a sheet metal liner which comprises a top wall 101, spaced from the top member 23 of the wrapper; side walls 102; a back wall 103; an out-turned flange 104 which extends around top wall 101, side walls 102 and overlaps the center post 32 and corner post 30. The front of the liner is open, and a bar 105, preferably of channel formation, extends between and is welded or otherwise secured to the front lower portions of side walls 102. This bar 105 forms a rigid connection between the lower front corners of side walls 102. A hinged door 106 is adapted to close the front of the baking compartment c, and overlaps flanges 104 and bar 105. The side walls 102 are provided with

5

embossed ribs 107, for supporting a baking pan at different elevations, as well understood in the art. Back wall 103 of the oven liner has secured thereto four spacer lugs 110 which space the liner from back wall 23 of the wrapper. Side walls 102 of the oven liner, at their lower ends, are provided with inturned flanges 108 which fit on the flange 42 on the panel 37 and on a flange of cross-bar 79. A bottom 115 for the oven is formed of sheet metal, and is provided with a front downwardly curved edge 116 which fits on the top flange of cross-bar 105.

A burner 118 for the oven is suitably supported under the bottom 115. A baffle 119 is supported over the burner by a tongue 120 which extends into the slot in back wall 103 of the oven liner, and its front end is supported by the upper flange of bar 105. A floor 126 below the burner 118, and formed of sheet metal, is supported at its front end on the lower flange of bar 105 and on the inturned flange 108 of one side wall 102 of the oven liner.

Compartment e is disposed below plate 126, and has an open front. A door 122, hinged at 123, forms a closure for and provides access to the compartment e.

The top member 23 of the wrapper 20 forms the bottom of the top-burner box or compartment a above the broiler compartment b, and the space at the side of the burner compartment which extends over the oven compartment c. At each end of the top member 23 of the wrapper, a channel beam 130, formed of sheet metal, has its lower flange secured to member 23 of the wrapper. The front end of each beam 130 is also secured to the portions of the respective corner posts 29, 30 which extend above the top member 23 of the wrapper. Central supports or brackets 133 are secured to and supported by the top member 23 of the wrapper. An aeration pan 136 is removably supported on the top of the brackets 130. A series of gas burners 139 in the burner box a are suitably supported on the top of member 23 of the wrapper. An upper front finishing panel 140, formed of sheet metal, extends between the channel bars 130 and across the front of the space above the wrapper. The control handles 142 for the burners 139 are mounted on the front of panel 140. Grates 144 for the burners 139 are removably supported on the aeration pan 136.

A lid for covering the burner box includes a pair of leaves 146, 147 which are hinged together at 148, and the rear end of leaf 147 is suitably pivoted to permit the leaves of the lid to be swung into parallel upstanding relation at the back of the burner box. A sheet metal cover plate 151 overlies the space over the top member 23 of the wrapper, for covering the space between brackets 133 and the right-hand channel beam 130, which may be hinged so that it can be lifted to provide access to said space.

A splashback comprises a front wall 153, top wall 154, end walls 155, and a back flange 157 integrally formed of sheet metal. The splashback extends across the back of the range, and is supported by brackets 159, of sheet metal, which are channel-shaped in cross-section and supported by plates 160 which are welded to channel beams 130. The connecting webs of brackets 159 are secured to the rear ends of plate 160, and the ends 155 of the splashback are secured to the upper portions of the brackets 159.

A finishing end panel 162 is provided at each side of the range. Each panel 162 extends verti-

6

cally from the inset 46 in one of the lower end panels 37 to the top of the channel beam 130, and transversely from the front of one of the posts 29, 30 to a line rearwardly of the back member 22 of the wrapper, and coincident with the vertical back edge of one of the ends 155 of the splashback. Each panel 162 has a liner of insulation 163, and is suitably secured to a flange 27 of the wrapper and one of the lower end panels 37.

A flue structure is provided for venting hot air and gases from broiler compartment b and oven compartment c. This structure embodies a flue 165 in the upper rear corner of the wrapper 20. This flue is formed by said wrapper and a wall which includes a vertical portion 166 which has its upper end flanged, as at 166a, and welded to the inner face of top member 23 of the wrapper and a downwardly and rearwardly inclined portion 167, the lower end of which is welded to the back member 22 of the wrapper. The vertical portion 166 of the wall of flue 165 is provided with an opening 169 which registers with an opening 170 in the back wall of the oven liner, through which hot air and gases from the oven compartment flow. The wall portion 166 is also provided with an opening 171 which registers with an opening 172 in the back wall of the broiler liner. An insulating element 174 is provided around openings 169, 170, between the front wall of flue 165 and the back of the oven liner, and a similar insulating element is provided around openings 171, 172 between the broiler liner and the front wall of flue 165, for minimizing heat transfer between said liners and flue 165.

A stack 176 for venting hot air and gases from flue 165 is mounted on and supported from the portion of the back of the wrapper which is disposed rearwardly of the baking compartment c. These gases pass into said stack through an opening 180 in the upper rear portion of the wrapper. This stack is formed with side walls 181, a back wall 182, a front wall 183, and an inclined top wall 184. Between the lower end of the front of inclined front wall 183 and the top wall 184, an opening is formed for venting gases from the stack through horizontal slots 187 in the front wall of the splashback. The lower end 185 of the stack is open to permit air in back of wrapper 20 to flow into said stack, which receives the hot air and gases from the broiler compartment liner. Air for supporting combustion at the burner 118 for the baking compartment c and broiler compartment b enters the wrapper 20 through openings 61 and 62 in the wrapper. The baking compartment c is vented through openings 169, 170 to flue 165. The broiler compartment b is vented through opening 172 into flue 165. Gases pass from flue 165 through opening 180 into stack 176, from which they escape into slots 187 in the splashback. The upper rear corners of the broiler liner and oven liner are angularly inset and spaced from the front wall of flue 165. Stack 176 draws unheated air from the back of the wrapper through its lower open end, to cool the air and gases discharged from the stack.

The oven compartment and the broiler compartment are both disposed within the wrapper frame 20, and are laterally spaced from each other to form a space between the adjacent walls of the compartment, in which space insulating material 190 may be placed. Obviously, insulating material may also be provided at any and all places, wherever necessary or desired.

While the preferred form of the invention has been herein shown and described, it is to be un-

7

derstood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:

1. A structure for a range, provided with walls forming a broiler compartment and an oven compartment arranged side by side, embodying a sheet metal wrapper including a bottom, back and top, within which the broiler and oven compartments are disposed side by side, corner posts and an intermediate post secured to and extending between the bottom and top of the wrapper, lower side panels of sheet metal between the corner posts and the back of the wrapper, sheet metal side panels secured to the lower side panels and forming closures at the sides between the top and bottom of the wrapper and extending over the lower side panels, a stiffening member between the said intermediate post and the back wall of the said wrapper, a bar between and secured to one of the corner posts and the back wall of the wrapper, said stiffening member being adapted to support a liner for a broiler compartment, and a bar between the said intermediate post and the back of the wrapper, the said bar and one of the side panels being provided with means for receiving an oven liner.

2. A range of the character described, embodying a wrapper including integral bottom, back and top walls, a framework to which the forward edges of the bottom and top walls are secured, means forming an oven compartment and a broiler compartment disposed within said wrapper and extending behind said framework, said compartments terminating short of the bottom of said wrapper, means forming a burner box above the top of said wrapper, closures for the fronts of said compartments, lower side pan-

8

els between the frame-work and the back of said wrapper, and closure walls for the sides of the structure, the lower portion of the back wall of said wrapper and of the said lower side panels being deflected inwardly to form an air circulation passage.

3. A range of the character described, embodying a wrapper formed of sheet material and having integral bottom, back and top walls, a supporting structure therefor, means dividing said wrapper into two chambers disposed side by side, a liner in one chamber constituting an oven, a burner for said oven, a liner in the other chamber constituting a broiler compartment, a burner for the broiler compartment, means whereby air may be supplied to the compartments through said wrapper, means whereby gases may flow from said compartments through a wall of said wrapper, means forming a top burner box, the bottom of which box is formed by the top wall of said wrapper, a portion of the back wall of said wrapper being deflected inwardly, and lower side panels for the wrapper, said side panels being also deflected inwardly, there being air circulating openings through said wrapper and said lower side panels.

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