Nov. 3, 1942. J. M. COOK 2,300,405

PORTABLE OVEN

Filed Sept. 14, 1939 3 Sheets-Sheet 1

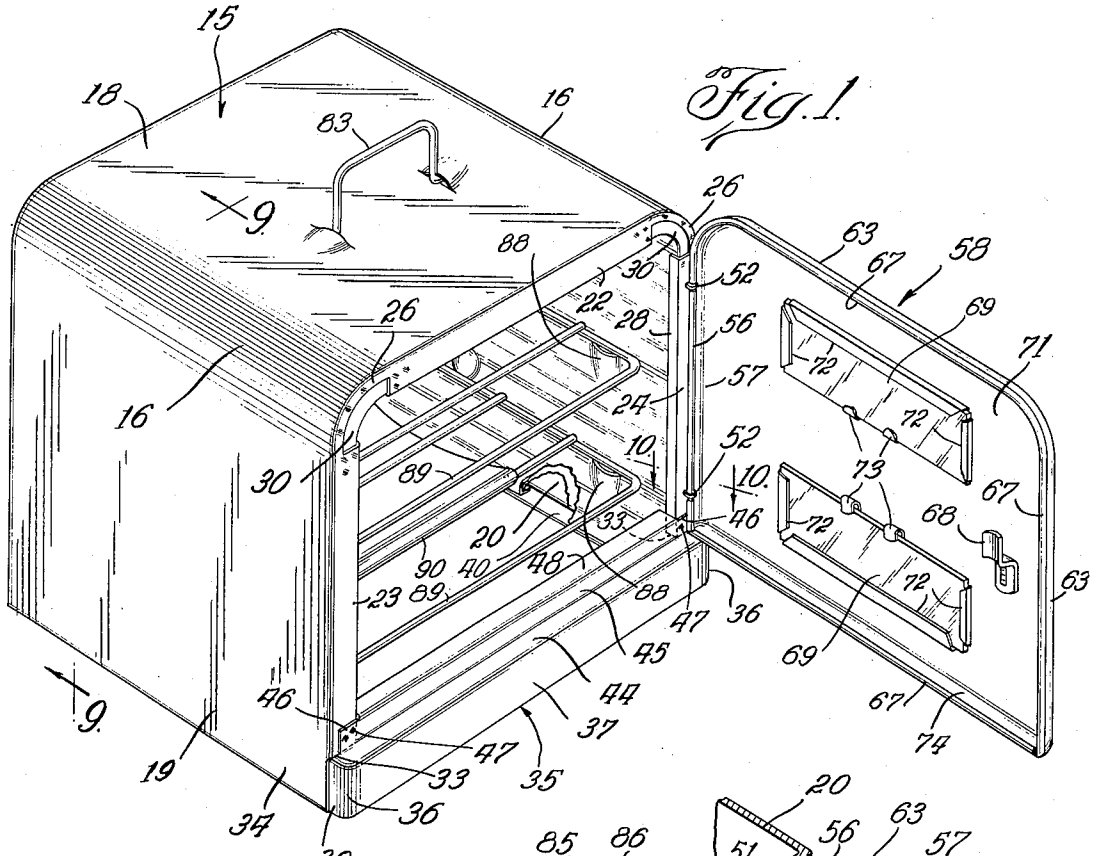


Fig. 1.

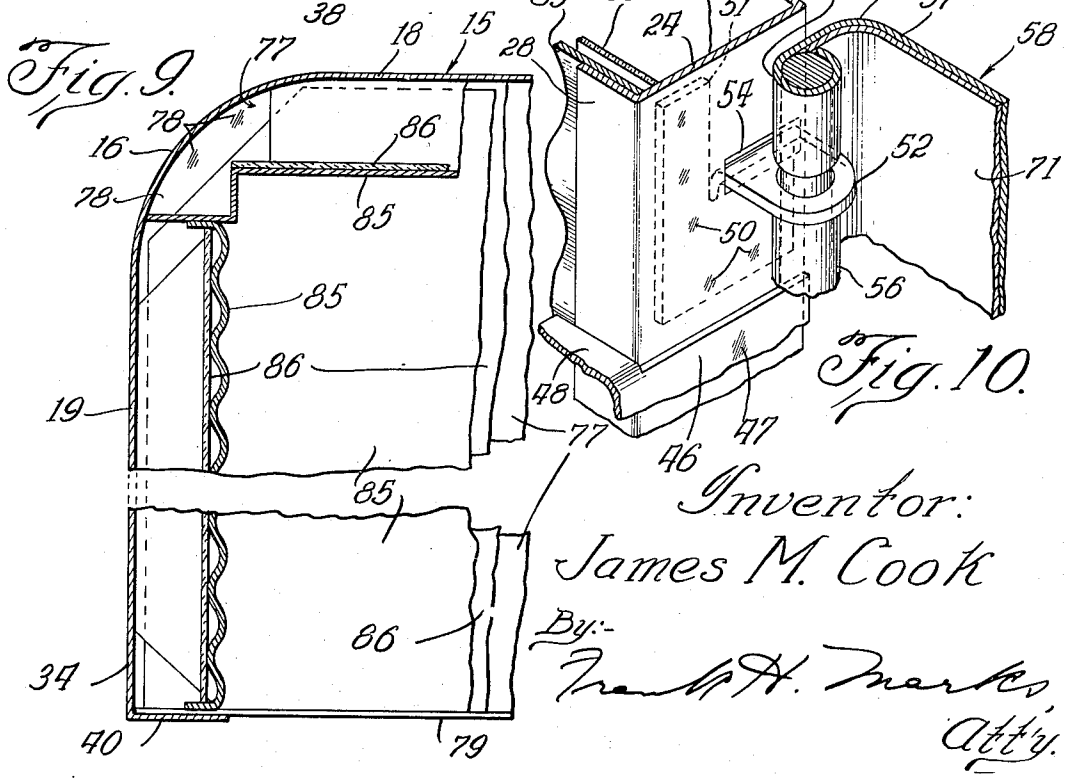


Fig. 9.

Fig. 10.

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Fig. 2.

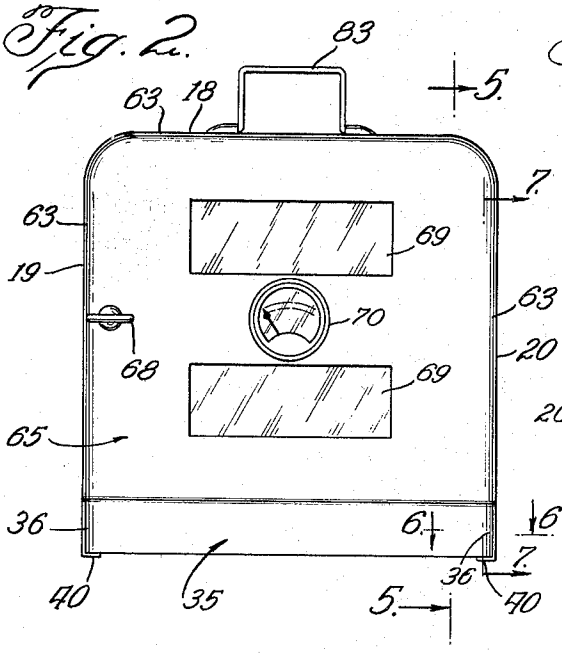
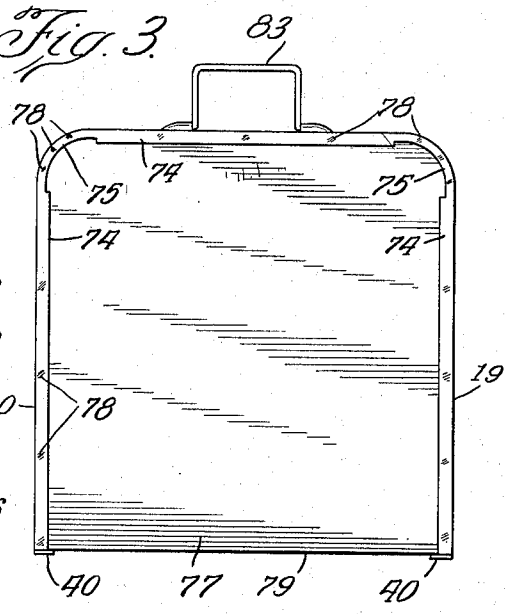


Fig. 3.



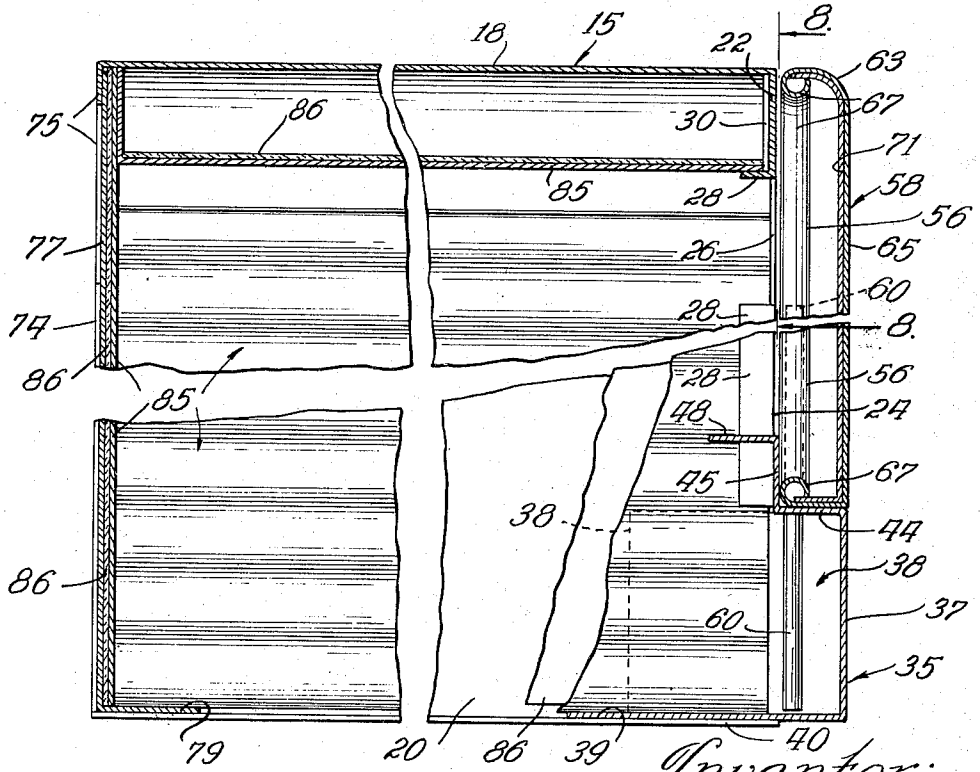


Fig. 5.

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Fig. 7.

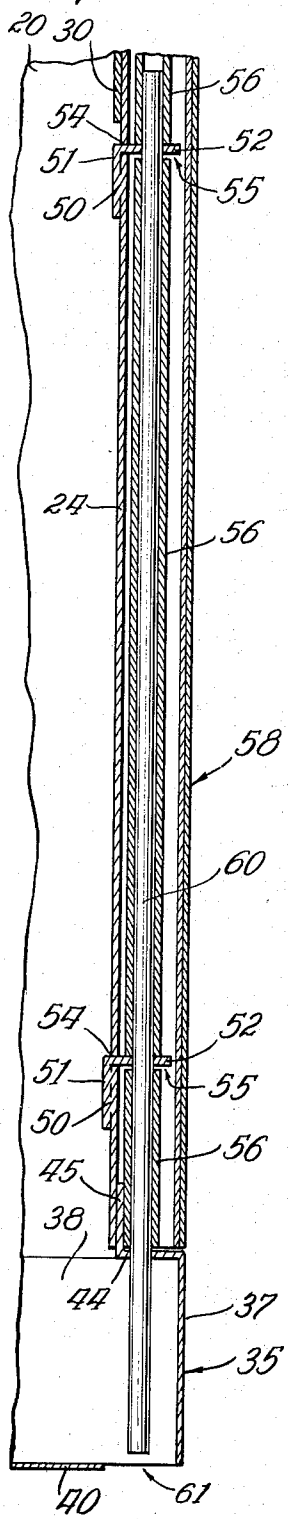


Fig. 4.

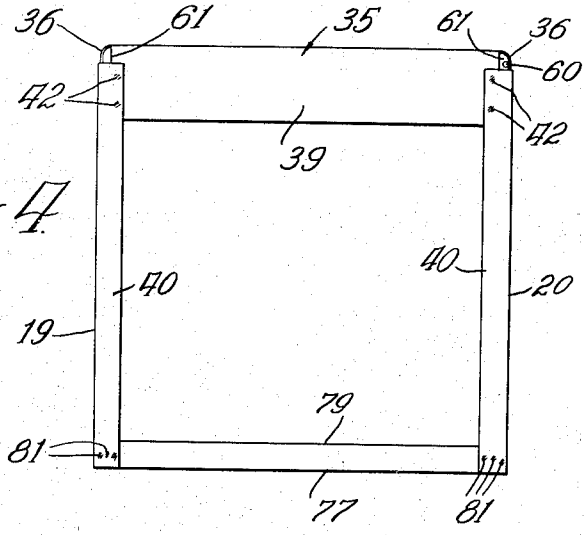


Fig. 8.

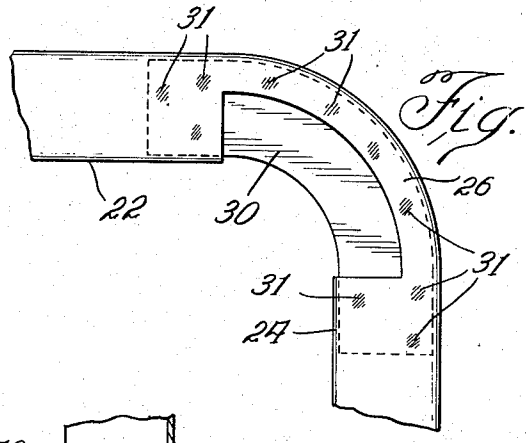
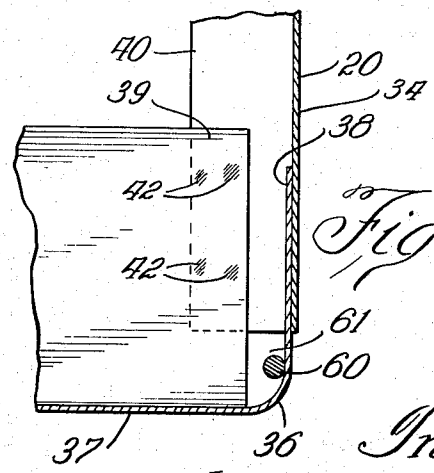


Fig. 6.



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Patented Nov. 3, 1942

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UNITED STATES PATENT OFFICE

2,300,405

PORTABLE OVEN

James M. Cook, La Grange, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York

Application September 14, 1939, Serial No. 294,827

8 Claims. (Cl. 126—275)

This invention relates to cabinet construction for portable ovens and other devices and is concerned more particularly with the production of a cabinet of enhanced simplicity, strength and appearance.

It is an object of my invention to provide a cabinet of sheet metal affording the use of a single piece in the formation of the sides and top of the cabinet.

It is another object of my invention to provide a cabinet structure which, when ordinarily observed in service, exhibits no welds or other usual connections.

It is a further object of the invention to provide a portable cabinet of such construction that substantially no load is carried by a joint.

An additional object resides in an improved method of manufacturing a cabinet.

A further object is to provide a cabinet with a door connected by a substantially concealed hinge.

It is also an object to provide a hinge construction enabling a door to be expeditiously connected to the casing of a cabinet.

It is also an object of the invention to provide a cabinet whose door and casing substantially merge with each other at the juncture thereof.

Another object is to provide an improved corner construction.

Further objects and advantages of the invention will appear as the description proceeds.

The invention will be better understood upon reference to the following description and accompanying drawings, in which:

Fig. 1 is an isometric view showing a cabinet with the door open, illustrating features of my invention.

Figs. 2 and 3 are respectively front and rear elevations of the same.

Fig. 4 is a bottom plan view of the same.

Figs. 5, 6 and 7 are enlarged fragmentary sectional views taken substantially as indicated by the lines 5—5, 6—6 and 7—7, respectively, in Fig. 2.

Fig. 8 is an enlarged fragmentary elevation taken as indicated by the line 8—8 in Fig. 5.

Fig. 9 is a sectional view taken as indicated by the line 9—9 in Fig. 1.

Fig. 10 is an enlarged fragmentary sectional and isometric view taken as indicated by the line 10—10 in Fig. 1.

Referring now more particularly to the drawings, there is shown for illustrative purposes a portable oven although it will be appreciated as the description proceeds that the invention is concerned with the construction of cabinets in general and therefore is of more or less universal application.

In accordance with the principles of my invention, I employ a piece of sheet metal as shown at 15 dimensioned in accordance with the particular size of cabinet to be constructed, and form two bends 16 to provide curved corner edges which do not tax the metal in the bending thereof and present an unusually smart appearance. The bends divide the piece 15 into a top panel 18 and side panels 19 and 20. Since the sides and top are all of the same piece, it is apparent that the appearance throughout the sides and top is smooth, thereby avoiding the welds and other unattractive effects resulting from the use, which has heretofore been prevalent, of separate top and side pieces welded, riveted or otherwise joined at points readily visible. This wrapper construction also has the advantage that it may be produced more economically by virtue of the absence of connections between the sides and top. By imparting a gentle bend at 16, moreover, sheet metal which has been blued or similarly surfaced to enhance its appearance, will not chip during the bending operations. To provide finished and smooth corners, the sheet 15 is marginally bent substantially throughout its periphery, providing at the front a flange 22 depending from the top 18, and flanges 23 and 24 extending inward from the side panels 19 and 20, respectively, the side flanges being connected to the top flange by relatively narrow quadrant arcuate flange portions 26 sufficiently narrow to be capable of being bent into the plane of said flanges without undue crimping and sufficiently wide to permit of its being spot-welded or otherwise suitably connected to another part. The flanges 22, 23 and 24 are preferably rebent, providing rearwardly extending lips 28 which, with the associated panels 15, 19 and 20, provide pockets to retain lining plates for the oven, as will appear.

The corner flange portions 26 are reinforced by quadrant angle plates 30 fitted behind and spot-welded as at 31 or otherwise suitably connected to the flange portions and flanges.

The flanges 23 and 24 terminate at 33 short of the bottoms 34 of the panels 19 and 20, and said bottoms are bridged by a flame baffle bar or shield 35 also preferably formed of sheet metal and having preferably rounded corner bends 36. The bar 35 has a front base wall 37 with rearwardly extending ends 38 and a rearwardly extending lip 39 (Fig. 6) fitted inside the panel bottoms 34 and over base flanges 40 bent inwardly from said

panels 19 and 20, the lip 39 being spot-welded as at 42 or otherwise suitably connected to the flanges 40, providing a substantially rigid brace between said bottoms and thus imparting a fixed shape to the casing. It will be noted that there is no weld or other connection between the side panels and the ends 38, and thus nothing to mar the appearance of the panels. The ends 38 afford side reinforcement for said panels and assist in locating the lip 39 in welding position relative to the panel flanges 40. The bar 35 affords a sill or ledge 44 terminating rearwardly in an upwardly extending door stop wall 45 whose ends 46 confront and are spot-welded as at 47 or otherwise suitably joined to the panel flanges 23 and 24, thereby assisting in locating the lip 39 in welding position relative to the panel flanges 40. A lip 48 extends rearwardly from the wall 45 to assist in baffling the flame over which the oven is adapted to be placed, so as to concentrate the flame on the food being cooked and to shield the user from the flame.

Welded as at 50 or otherwise suitably secured to the flange 24 are hinged brackets 51 (Fig. 7) having registering eyes 52 projecting forwardly through openings 54 in the flange. These eyes are adapted to be received in slots 55 in a tubular bead 56 at one side 57 of a door 58, and a straight hinge pin 60 slipped upward through the opening 61 in the baffle 35 and lodged in the bead and eyes. The pin fits snugly in the bead and is frictionally held therein against accidental escape, so as to securely anchor the door hingedly to the casing.

The door may be formed by a die operation so as to present a transversely rounded corner margin 63 at its top and sides, the surface thereof being substantially flush with the surface of the wrapper sheet 15 and the corners 36 of the baffle bar 35, and the outer face 65 of the door being substantially flush with the exposed face 37 of the baffle bar 35, when the door is closed. The edge of the margin may be bent into a tubular bead throughout as shown at 67 for strength and improved appearance. A latch 68 serves to retain the door in closed position. The door may have windows 69 and a thermostat 70 if desired. A heat reflecting lining plate 71 anchored to the door by the beading 56 and 67 may be formed with lips 72 cooperating with the front plate portion of the door and with fingers 73 formed on the door to secure the windows in place (Fig. 1).

The bottom lip 67 on the door is preferably flat and adapted to rest on the sill 44.

The rear margin of the sheet 15 is bent to provide a flange 74 which is narrowed at the corners 75 so that said corners are not crimped materially in the bending process. A rear panel 77 is spot-welded as to 78 or otherwise suitably connected to the forward face of the flange 74, and has a forwardly extending bottom lip 79 similarly secured as at 81 to the side panel flanges 40.

A handle 83 may be hingedly secured to the top panel 15 or if desired to each side panel 19, 20.

The structure thus far described constitutes the complete body. The sheet metal parts may be made of steel and of such thin gage as to make a body of light weight and yet of sturdy construction. The sheet metal may be blued or otherwise surfaced to prevent rusting and enhance the appearance, and may be drawn by die means to a depth of approximately $\frac{1}{16}$ of an inch, as in the case of the door, without chipping the surfacing. Chipping of the surfacing of the sheet 15 is avoided because it is shaped by bending, which does not unduly stretch the metal as does a drawing operation. The corners 36 of the baffle piece 35 may be drawn or bent.

The heat reflecting lining plates 85 for the casing may be slipped into their respective positions and held in place by the front flanges 22, 23 and 24, the associated lips 28, the baffle lip 39, the rear panel 77 and its lip 79, and by mutual contact. Asbestos sheets 86 may be provided between the lining plates and the respective panels. The side lining plates may be formed with supporting abutments 88 to support shelves 89, the lower of which preferably carries a baffle 90 to protect the food from the flames.

It will be seen from the foregoing that the lining and shelving, together with any food contents, are all supported essentially by the bottom lips 39, 40 and 79, that the side and top panels and door and the front of the baffle strip 35 are perfectly free of welds, rivets and joints of all sorts, and the door when closed covers all welds at the front of the casing, the resulting oven presenting an attractive appearance throughout.

Various modifications may suggest themselves to those skilled in the art without departing from the spirit of my invention, and, hence, I do not wish to be restricted to the specific form shown or uses mentioned, except to the extent indicated in the appended claims, which are to be interpreted as broadly as the state of the art will permit.

I claim:

1. Angle construction comprising a piece of sheet metal having a curved cross-section and having an integral relatively narrow planar lip substantially coextensive transversely with and normal to the curved surface of said piece, and a relatively wide planar corner piece welded to and substantially coplanar with and at least coextensive with said lip, the first piece having a portion extending beyond the curved portion and having a lip of substantially the same width as an coplanar with and welded to said corner piece, said corner piece and second lip being of sufficient width to reinforce said first piece so as to preserve the curvature of said surface.

2. A cabinet construction comprising angularly related substantially planar walls, having a curved juncture, lips bent angularly from said walls and of such width as to maintain the shapes of said walls, an arcuate lip bent from said juncture and connected to and of substantially less width than the first mentioned lips, said walls and juncture and all of said lips being parts of the same piece of sheet metal, and a member integrally united to all of said lips.

3. A cabinet construction comprising a body including two sides and a top formed of a continuous piece of sheet metal, said sides terminating in inwardly turned bottom lips, and providing a front opening, a sill closing the bottom of said opening, means concealed from the front by said sill and uniting said sill to said lips, said sides and top having inwardly turned reinforcing front lips cooperating with said sill to frame said opening, means cooperating with said front lips in reinforcing the junctures of said sides with said top, a door for said opening and formed to shield the front lips, and means shielded by said door and hinging said door to one of said lips.

4. A cabinet construction comprising a body having an opening, a door for said opening, a pair of vertically alined eyes on said body adjacent said opening, said door having a rear-

wardly projecting flange terminating rearwardly in an inwardly projecting margin curled upon itself to form a hollow bead open at the bottom thereof, said flange being transversely slotted through said bead to receive said eyes, a hinge pin fitting frictionally in said eyes and bead, a sill for said door and connected to said body, said sill having a passage to admit said pin to said bead, an upper part of said bead being formed to limit the extent of insertion of said pin.

5. A cabinet construction comprising a body having a top wall and a straight side wall joined by a curved portion, a door having a marginal hollow reinforcing bead of the same contour as said top and side walls and curved juncture portion of said body, said body having eyes projecting adjacent the straight wall thereof, said bead being interrupted to receive said eyes, said bead being open at the lower end of the side portion thereof, and a hinge pin fitted in said bead and eyes, the curved portion of said bead preventing said pin from being inserted too far.

6. An oven cabinet construction comprising a body having two sides and a top formed of a continuous piece of sheet metal, the junctures between said sides and top being rounded, said sheet being marginally bent to define a smooth edge and a flange at the front of said body and an opening framed by said flange, a door mounted on said body to close said opening, the door comprising a continuous piece of sheet metal at the side and top margins thereof and bent inwardly to define a substantially continuous smooth edge, the front contour of said body being substantially coincident with that of the said door when said door is shut, said door being transverse curved forward and inward from said contour to provide curved surfaces substantially flush with the adjacent side and top surfaces of said body.

7. An oven cabinet comprising a sheet metal open bottom box having a top and sides depending therefrom, said sides having bottom flanges extending toward each other and front flanges extending toward each other, said front flanges being spaced above the bottoms of said sides, and a sheet metal bridge member having a bottom flange projecting rearwardly below said front flanges and resting on and integrally united to said bottom flanges, said member having upstanding rearwardly extending arms projecting between said front and bottom flanges and substantially engaged with said sides, said arms being joined to an upstanding bight disposed forwardly of said front flanges, said member having a substantially horizontal portion between said bight and said front flanges, an upstanding portion at the rear of said bight and integrally united with said front flanges, and a second horizontal portion extending rearward from the top of said upstanding portion and between said front flanges, said member being of such height as to constitute a flame shield with reference to flames of a burner at the bottom of said cabinet.

8. An oven cabinet, comprising a sheet metal open bottom box having a top and sides depending therefrom, said sides having bottom flanges extending toward each other and front flanges extending toward each other, said front flanges being spaced above the bottoms of said sides, and a sheet metal bridge member having a bottom flange projecting rearwardly below said front flanges and resting on and integrally united to said bottom flanges, said member having upstanding rearwardly extending arms projecting between said front and bottom flanges and substantially engaged with said sides, said arms being joined to an upstanding bight disposed forwardly of said front flanges, said member having a substantially horizontal portion between said bight and said front flanges, an upstanding portion at the rear of said bight and integrally united with said front flanges, and a second horizontal portion extending rearward from the top of said upstanding portion and between said front flanges, said member being of such height as to constitute a flame shield with reference to flames of a burner at the bottom of said cabinet, and a door mounted on one of said front flanges and having its bottom substantially engaged with the first-mentioned horizontal portion which functions as a sill when said door is closed.

JAMES M. COOK.