

May 1, 1923.

1,453,710

R. HOFFMAN

STOVE CONSTRUCTION

Filed March 24, 1922

2 Sheets-Sheet 1

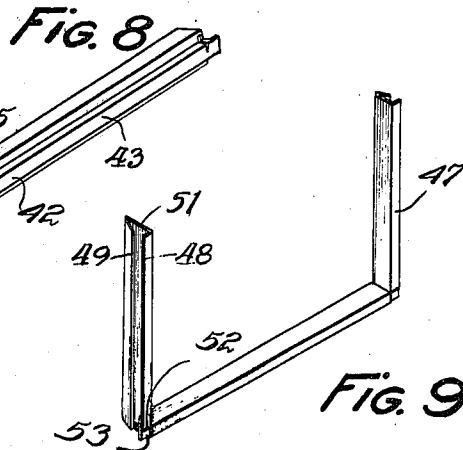
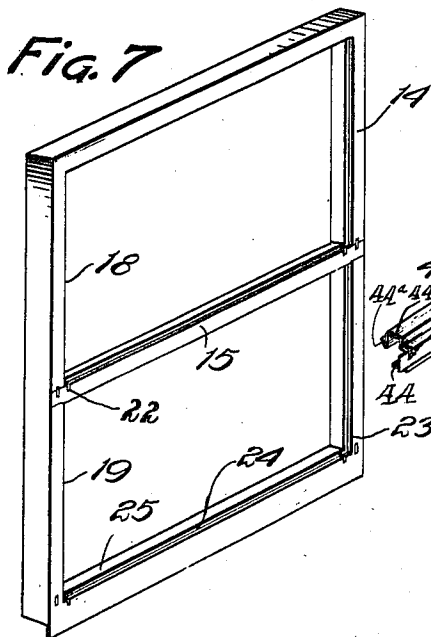
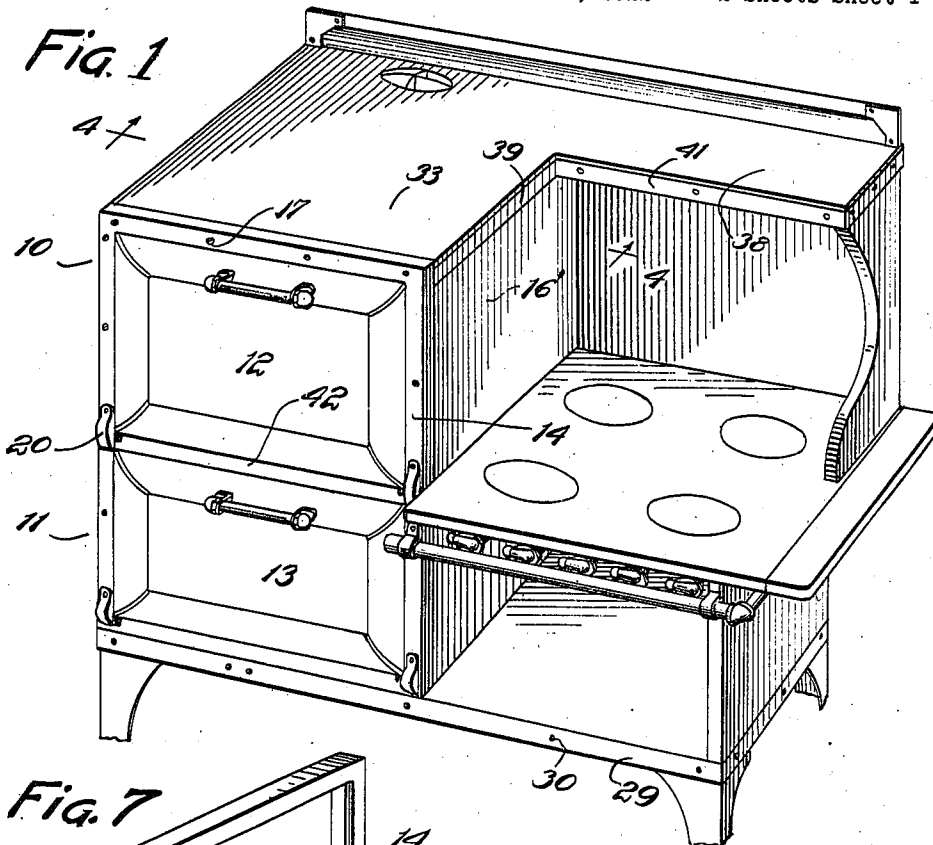


Fig. 9

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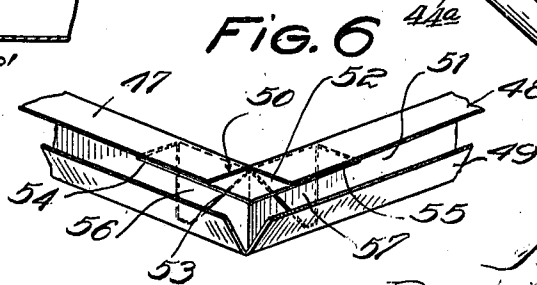
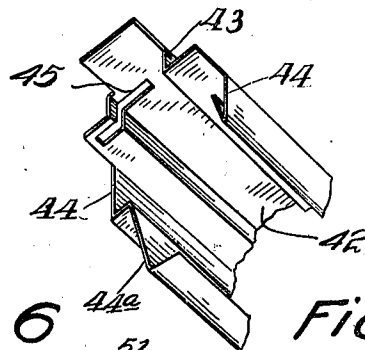
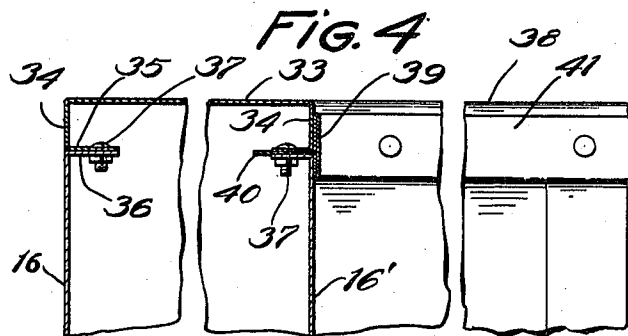
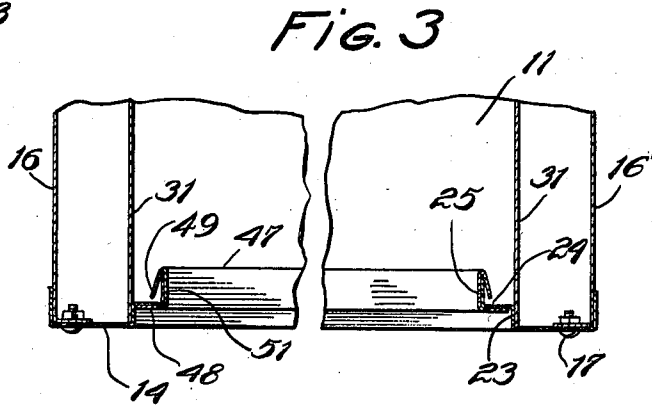
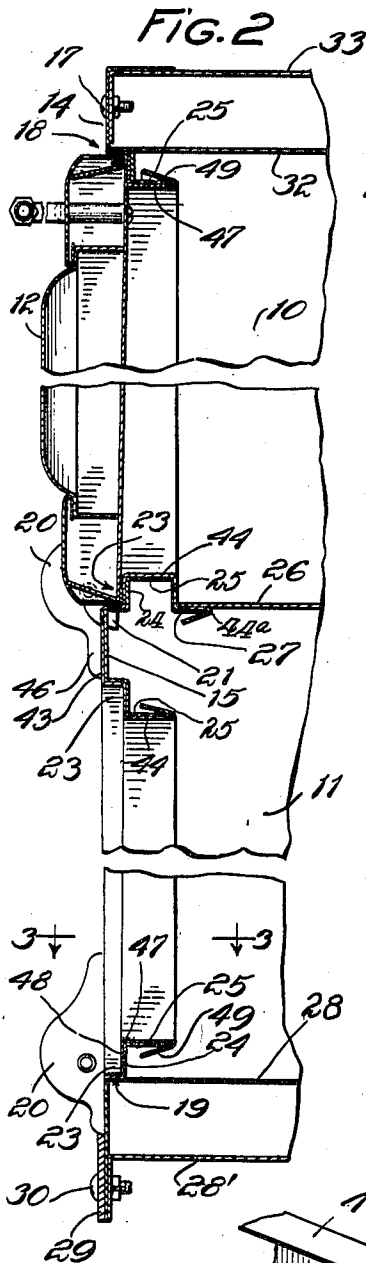
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STOVE CONSTRUCTION

Filed March 24, 1922

2 Sheets-Sheet 2



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Patented May 1, 1923.

1,453,710

UNITED STATES PATENT OFFICE.

RUDOLPH HOFFMAN, OF KANKAKEE, ILLINOIS, ASSIGNOR TO SEARS, ROEBUCK AND CO., OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

STOVE CONSTRUCTION.

Application filed March 24, 1922. Serial No. 546,335.

To all whom it may concern:

Be it known that I, RUDOLPH HOFFMAN, a citizen of the United States, residing at Kankakee, in the county of Kankakee and State of Illinois, have invented a certain new and useful Stove Construction, of which the following is a specification.

This invention relates, in general, to stove constructions and has more particular reference to an improved construction for the oven or ovens and associated parts of cook stoves.

In constructions of this character provided in the past, considerable difficulty arose in the assembling of the ovens due to the tendency of the heavy enamel finish provided on the work to crack and break off in patches particularly at the joint between contiguous sections during the assembling. One object of the present invention is to obviate such contingencies and to provide a practical construction presenting a neat workmanlike appearance.

Another undesirable characteristic of prior constructions which it is the aim of the present invention to remedy is the tendency of the enamel finish on certain portions of the oven front to disintegrate and become gummy and to rub off due to the heat in the oven, also the unsightly and insanitary appearance of the oven proper presented by the rusting of certain portions therein exposed to view when the oven door is open. The invention provides for these portions of the oven, a facing of a non-corrosive metal which, besides obviating these undesirable features, considerably enhances the appearance of the oven.

These and other objects of the invention are attained by the construction and arrangement illustrated in the accompanying drawings forming part hereof in which Figure 1 is a perspective view of a cook stove having superimposed ovens constructed in accordance with the invention. Fig. 2 is a fragmentary vertical sectional detail of the forward part of the ovens, the lower one of which has its door removed. Fig. 3 is a fragmentary horizontal sectional detail of the lower oven taken on the line 3—3 of Fig. 2. Fig. 4 is a fragmentary detail partly in section and partly in elevation of the upper portion of the ovens and adjacent portions of the stove structure and is taken on the line 4—4 of Fig. 1. Fig. 5 is a per-

spective detail of a piece of the facing employed for covering the cross piece between the upper and lower ovens. Fig. 6 is a similar view of the facing employed for covering the door jambs within the ovens, and Figs. 7, 8 and 9 are perspective details respectively of the frame structure of the forward portion of the oven and the facings for covering the cross piece and the jambs in the oven, all of which are illustrated in dissociated relation. Throughout the views the same reference numerals are applied to the same parts.

Referring to Fig. 1, the stove to which my invention is herein applied comprises an oven section providing an upper or baking oven 10 and a lower or broiler oven 11 provided respectively with oven doors 12 and 13.

The oven structure has at its forward end a sheet metal frame 14 provided with a cross piece 15 also preferably of sheet metal. The oven side walls 16 and 16' have inturned forward edge portions interfitting with inturned side edge portions of the frame 14 and fastened thereto by bolts 17 entering the front of the frame (see Fig. 3). The frame 14 has the oven openings 18 and 19 defined by the cross piece 15 which are arranged to be closed by the oven doors 12 and 13, respectively. The oven doors may, of course, be of any suitable type although I prefer those having spring-operated means for moving the same, such means being herein enclosed within ornamental housings 20 at opposite sides of the doors. The doors, furthermore, have stop fingers 21 entering slots 22 provided in the cross piece 15 of the frame 14 serving as limiting abutments for the stop fingers when the door is swung out, in a well known manner. The openings 18 and 19 are further defined by inturned edge portions on the frame 14 and cross piece 15 forming rabbeted grooves 23 and jambs 24 for the oven doors and projected inwardly from the jambs 24 are flanges 25, the purpose of which will presently be made to appear. The oven doors entering the rabbeted grooves 23 effectually seal the ovens.

The ovens 10 and 11 are separated by a partition 26 preferably of a single piece of sheet metal resting at its forward end upon a step 27 provided integral with the upper flange 25 on the cross piece 15. In oven construction, it is common practice for the purposes of heat insulation to provide dou-

ble walls in the oven doors and all enclosing walls. In the present construction the bottom of the oven 11 is thus shown as provided at 28 in spaced relation to the bottom outside wall 28' which is secured together with the lower edge of the frame 14 to the base 29 suitably by bolts 30. In a similar manner the side walls of the ovens are provided at 31 in spaced relation to the outer side walls 16 and 16' and the upper wall of the oven 10 is provided at 32 in spaced relation to the outer upper wall 33. These constructions so far as they have been generally described are old and no invention is here claimed therein.

The top wall 33 is secured to the frame 14 by bolts 17 similarly as the side walls as shown in Fig. 2 and has depending side portions 34 projecting in the plane of the side walls as shown in Fig. 4. At a point spaced from the top wall 33 the side portions 34 have inturned edge portions 35. The latter are adapted to engage with similar inturned edge portions 36 of the side walls and to be secured together therewith by bolts 37 on the inside. With this type of construction the side walls are flush and present a neat appearance unmarred by bolt heads. Furthermore I have found that the grating of portions of the walls upon one another, the flexing and bending and the torsional stresses set up in the walls which, where the edges of the oven wall sections simply overlap, cause cracking and breaking off of the heavy enamel finish usually provided on such walls, is avoided due to the fact that all strains are placed directly upon and are borne by the inturned edge portions.

On the side toward the shelf 38 I prefer to provide a finishing strip 39 for the joint between the top wall 33 and the side wall, as shown in Figs. 1 and 4. The strip 39 is preferably made of sheet metal having a laterally projecting tongue portion 40 extended in between the inturned edge portions 35 and 36 to be secured together with these portions by the bolts 37. The transverse portion on the outside is adapted to lap the joint and thus to present a neat trim appearance. In order to secure rounded edges on this portion of the strip I prefer to form the same as shown in Fig. 4 by bending a portion at right angles to the tongue 40 and then bending the metal twice upon itself, thus completing a T-shaped strip presenting rounded edges on the transverse portion. A trimming 41 presenting an appearance similar to the facing 39 and placed co-extensive therewith is preferably provided on the skirt of the shelf 38.

The heat in the ovens is not generally sufficient to affect the enamel finish of the outside walls because of the double wall construction on all sides. The cross piece 15, however, it will be seen is directly subjected

to this heat and where the usual enamel finish is applied thereto the same has been found in practice to disintegrate in time and become rough and gummy and very often to rub off entirely. The metal thus exposed soon corroded as a result of the action of the moisture and hot gases attendant upon the preparation of food in the ovens. To avoid these contingencies I provide no enamel finish on the cross piece 15 but cover the same with a sheet metal facing 42, a perspective detail of which appears in Fig. 5. The latter comprises an intermediate channel shaped portion 43 and integral channel shaped side portions 44 as appears in cross-section in Fig. 2. Only the intermediate portion 43 covering the face of the cross piece 15 remains exposed when the oven doors are closed. The upper side portion 44 of the facing 42 has an additional flange 44^a to be bent over upon the terminal edge of the step 27 as shown in Fig. 2, whereby to secure the one side edge of the facing in place. The side portions 44 it will be seen cover the lower jamb in the upper oven and the upper jamb in the lower oven. The facing 42 has slots 45 provided therein to register with the slots 22 provided in the cross-piece 15 of the frame 14 to receive the stop fingers 21 of the oven door 12. Preferably the housings 20 containing the means for operating the oven doors have extensions 46 to cover the outer ends of the facing 42 to present a finished appearance. The facing 42 is preferably of a non-corrosive metal such, for example, as aluminum which, besides presenting a neat trim appearance, in certain instances blending with the color of the enamel provided on the stove, is substantially impervious to the heat in the oven.

Similarly to the facing 42, a facing 47 illustrated in perspective in Fig. 6 is provided for the door jambs within the ovens. Since the facing 42 covers the lower jamb of the upper oven and the upper jamb of the lower oven, the facings 47 are provided of a U-shape for covering the remaining three walls in each of the ovens. I prefer to form the facings 47 of frames made of strips of sheet metal having channel shaped cross section, the opposite flanges 48 and 49 of which may be cut as shown at 50 in Fig. 6, up to (but not through) the intermediate connecting web portion 51 so that the strip may be bent with the web portion 51 forming the inner peripheral wall of the frame. When bent in this manner there is opened a notch 52 at each of the corners of the frame between the flanges of the adjacent sides of the frame. To close these notches I prefer to provide corner plates 53 having angularly extending portions 54 extending longitudinally along the inner side of the flanges 48. Co-extensive with these portions and formed from the same piece of metal, the latter be-

ing initially substantially rectangular in shape, are wing portions 56 and 57 provided by cutting diagonally partway across the plate 53 and bending the portions on opposite sides of the cut in angular relation to the angularly extending portions 54 and 55 so that the wing portions embrace adjacent sides of the frame and are disposed in engagement with the connecting web portion 51 thereof. The portions 54, 55, 56 and 57 are all preferably welded or otherwise held to the flanges 48 and the connecting web portion 51 to provide a rigid structure.

The frames are entered into the ovens with the flange 48 covering the face of the jamb 24 (see Figs. 2 and 3). The opposite and inner flange 49 is then bent over the terminal edge of the inwardly projected flange 25 thus securing the facing in place permanently in the oven.

The jamb portions of the frame 14 and associated parts disposed within the oven and hence subject at all times to the heat therein have ordinarily been found to corrode in time so that an unsightly and insanitary appearance was presented when the oven doors were opened. The facing herein provided is preferably of a non-corrosive metal such, for example, as aluminum, which is substantially impervious to the heat in the oven. In this way the undesirable feature noted is obviated. Furthermore the facings serve as trimmings and considerably enhance the appearance of the open ovens.

It will be understood that while the invention has been illustrated and described with considerable particularity, it is contemplated that various changes may be made in the details of construction and arrangement without departing substantially from the spirit and scope of the invention as expressed in the appended claims.

I claim as my invention.

1. In a stove construction, a sheet metal oven comprising a wall having an inturned edge portion, another wall having a portion disposed in the plane of said first mentioned wall and having an inturned edge portion adapted for abutment with said first mentioned portion within said oven and means for fastening said inturned edge portions together inside said oven.

2. In a stove construction, a sheet metal oven comprising a wall having an inturned edge portion, another wall having a portion disposed in the plane of said first mentioned wall and having an inturned edge portion adapted for abutment with said first mentioned portion within said oven, means for fastening said inturned edge portions together inside said oven, and a strip adapted to be interposed between said abutting edge portions having a transverse portion serving as a finishing piece for covering the

joint between said walls on the outside thereof.

3. In a stove construction, a sheet metal oven having enameled top and side walls, said top wall comprising depending side portions extending in the plane of said side walls and having inturned edge portions extending therefrom, said side walls having similarly inturned edge portions adapted for abutment with said first mentioned edge portions, and securing means passed through said edge portions to fasten the same together.

4. In a stove construction, a sheet metal oven having enameled top and side walls, said top wall comprising depending side portions extending in the plane of said side walls and having inturned edge portions extending therefrom, said side walls having similarly inturned edge portions adapted for abutment with said first mentioned edge portions, securing means passed through said edge portions to fasten the same together, and a finishing piece adapted to be fitted in the joint between said edge portions on the outside of said side wall, said piece having a lateral projection adapted to be entered between said edge portions to be secured thereby.

5. In a stove construction, the combination with two contiguous wall sections having inturned edge portions for fastening said sections together, of a finishing piece for closing the joint between said sections on the outside comprising a tongue adapted to be interposed between said inturned edge portions to be fastened thereby.

6. In a stove construction, the combination with two contiguous wall sections having inturned edge portions for fastening said sections together, of a finishing piece for covering the joint between said sections on the outside comprising a T-shaped sheet metal member having its leg disposed between said inturned edge portions for fastening said piece therebetween and having its cross piece lapping said joint, said cross piece being formed by bending the sheet metal at right angles to said leg portion and then twice upon itself whereby to form a rounded edge cross piece of double thickness to present a neat trim appearance at said joint.

7. In a stove construction, the combination of a pair of ovens superimposed with a single-wall partition therebetween, said ovens being open in front and provided with oven doors, a cross piece between said ovens supporting said oven partition wall, said ovens being provided with double walls for heat insulation on all sides, excepting the front at said cross piece, said side walls being enameled on the outside to impart a neat appearance to said oven, and a facing strip for said cross piece covering the same

on all sides exposed to view when said oven doors are open or closed, said facing strip presenting a neat trim appearance and being of a noncorrosive metal substantially

5 impervious to the heat of said ovens.

8. In a stove construction, the combination of superimposed sheet metal ovens, said ovens being provided with double walls for heat insulation and having an open front and a single-wall partition between said 10 ovens, a sheet metal cross piece between said ovens supporting said partition, said cross piece and said oven walls at said open front being formed with rabbeted grooves, oven 15 doors for said ovens adapted to enter said grooves to close said ovens, a non-corrosive facing strip for covering said cross piece and covering the groove therein to prevent any portion thereof being exposed, and fac- 20 ing strips fitting in the grooves in said oven walls similarly to said cross piece.

9. In a stove construction, the combination of superimposed sheet metal ovens, said ovens being provided with double walls 25 for heat insulation and having an open front and a single-wall partition between said ovens, a sheet metal cross piece between said ovens supporting said partition, said cross piece and said oven walls at said open front 30 being formed with rabbeted grooves, oven doors for said ovens adapted to enter said grooves to close said ovens, a non-corrosive facing strip for covering said cross piece and covering the groove therein to prevent 35 any portion thereof being exposed, and facing strips fitting in the grooves in said oven walls similarly to said cross piece, said last mentioned strips and a portion of said cross piece strip being within said oven and ex- 40 posed to view only when said oven doors are open.

10. In a stove construction, an oven having an open front and an oven door for closing said opening, said opening being formed 45 with a jamb for said door within said oven, and a facing of noncorrosive metal for said jamb.

11. In a stove construction, an oven having an open front, an oven door mounted in 50 said opening, and a facing for the sides of said opening in said oven covered by said door when closed, said facing being substantially noncorrosive and serving as a trimming to enhance the appearance of said 55 oven when open.

12. In a stove construction, the combination of an upper and a lower oven having an open front, a cross piece in said opening between said ovens, an oven door for said 60 upper oven mounted over said cross piece and having a downwardly projecting stop finger thereon, said cross piece having a slot therein to receive and limit the movement of said finger, and a facing piece for said 65 cross piece of non-corrosive metal having

a slot therein to register with said first mentioned slot.

13. In a stove construction, the combination of an upper and a lower oven having an open front, a cross piece in said opening 70 between said upper and lower ovens, said upper oven having a door jamb therein, an oven door for said upper oven mounted over said cross piece and adapted to engage said jamb and a facing piece for 75 said cross piece of non-corrosive metal, said facing piece having a side portion extending over said jamb.

14. In a stove construction, the combination of an upper and a lower oven having 80 an open front, a cross piece in said opening between said upper and lower ovens, said cross piece providing door jambs for the lower portion of said upper oven and the upper portion of said lower oven, oven 85 doors mounted in said openings above and below said cross piece adapted to engage said jambs, a facing strip for said cross piece of non-corrosive metal, said facing strip having side portions extending over 90 the lower jamb in said upper oven and the upper jamb in said lower oven.

15. In a stove construction, the combination of an upper and a lower oven having 95 an open front, a cross piece in said opening between said upper and lower ovens, said cross piece and the walls of said ovens about said openings being formed to provide door jambs, oven doors for said upper and lower 100 ovens above and below said cross piece adapted to engage said jambs, a facing strip for said cross piece of non-corrosive material having side portions extending over the lower jamb in said upper oven and the 105 upper jamb in said lower oven and facing strips for the jambs in said ovens on the remaining three sides of said openings.

16. In a stove construction, sheet metal ovens disposed in superimposed relation having double walls for heat insulation and 110 having an open front, a cross piece in said opening separating the upper from the lower oven at the partition wall between said ovens, oven doors for closing said oven 115 openings, the outer walls of certain of said double oven walls being enameled for neatness in appearance, said cross piece being especially not susceptible of enameling because subject to the heat in said ovens, said cross piece being provided with a facing 120 of non-corrosive material substantially impervious to the heat and serving as well to impart a neat trim appearance to said oven.

17. In a stove construction the combination in an oven having an opening in the 125 front wall thereof and a door for closing said opening, said oven having a sheet metal door jamb therein set in said oven to provide a rabbeted groove in front thereof wherein said door is adapted to enter in 130

closing, inwardly projecting flanges defining said oven opening on the edges of said jamb, and facings for said jambs comprising strips of channel form set over said inwardly projecting flanges so that one of the flanges of said channels covers said jamb, the other of the flanges thereof being bent over upon said inwardly projecting flanges to secure said strips in place, said strips being of a non-corrosive metal substantially impervious to the heat of the oven.

18. In a stove construction, the combination in an oven having an opening in the front wall thereof and a door for closing said opening, said oven having a door jamb therein set in said oven providing a rabbeted groove in front thereof wherein said door is adapted to enter in closing, side walls defining said oven opening at the edges of said jamb, and a facing strip of a single continuous length for covering said jamb, said strip being of a channel form, the flanges of said channel being cut out in to the connecting web thereof to permit said strips to be bent at the corners of the oven opening, the outer flange of said strip being adapted to cover said door jamb and the inner flange to be engaged over the terminal edge of the walls defining the sides of said oven openings whereby to secure said strip in place, said strip being substantially impervious to the heat of the oven.

19. In a stove construction, a frame comprising sides having peripheral side walls extending in angular relation at the corners of said frame, said sides having out-turned edge portions forming peripheral flanges on said frame, said flanges being continuous on the sides of said frame but providing notches at the corners between adjacent sides and reinforcing corner plates for closing said notches and strengthening said frame, said plates each comprising angularly extending portions constituting an angle plate for spanning said notches and engaging on the inner sides of said adjacent peripheral flanges and wings co-extensive with said angularly extending portions of said plate adapted to lie along the outer sides of said peripheral side walls, said wings beings formed by cutting a plate part-way across toward the point where said angularly extending portions converge and bending the portions on the sides of the cut in angular relation to said angularly extending portions.

20. In a stove construction, a frame com-

prising sides having peripheral side walls extending approximately at right angles at the corners of said frame, said sides having outturned edge portions forming peripheral flanges on said frame, said flanges being continuous on the sides of said frame but providing notches at the corners between adjacent sides, and reinforcing corner plates for closing said notches and strengthening said frame, said plates each being made of a rectangular sheet of metal cut diagonally partway across and having the portions on opposite sides of the cut bent at right angles to angularly extending portions forming the adjoining edges of said plate, said angularly extending portions being adapted to be engaged along the inner sides of said adjoining peripheral flanges of said frame and said bent portions being adapted to be engaged along the outer sides of said peripheral side wall.

21. In a stove construction, a frame made of a continuous sheet metal strip having an inner wall to form the sides of said frame and an integral flange on one edge of said wall to form peripheral flanges on said frame, said flange being cut transversely whereby to permit bending of said inner wall at the corners of said frame, said cut when open forming a notch upon the bending of said frame at each of the corners of the latter, sheet metal corner plates for said frame having portions extending at angles in the same plane defined by cutting a substantially rectangular plate diagonally part-way across and bending the portions on each side of the cut at angles to said angularly extending portions, said angularly extending portions being adapted to be engaged with said peripheral flanges on opposite sides of said notches and said bent portions being adapted to be engaged with said inner wall whereby to close said notches and to reinforce said frame.

22. In a stove construction, the combination of an oven having two contiguous wall sections secured together upon the inner side of the oven and forming a joint, a shelf extending laterally from said oven adjacent said joint, and finishing means including a portion covering said joint in said wall and a second portion coextensive with the first and extending along the front of said shelf.

In testimony whereof, I have hereunto affixed my signature.

RUDOLPH HOFFMAN.