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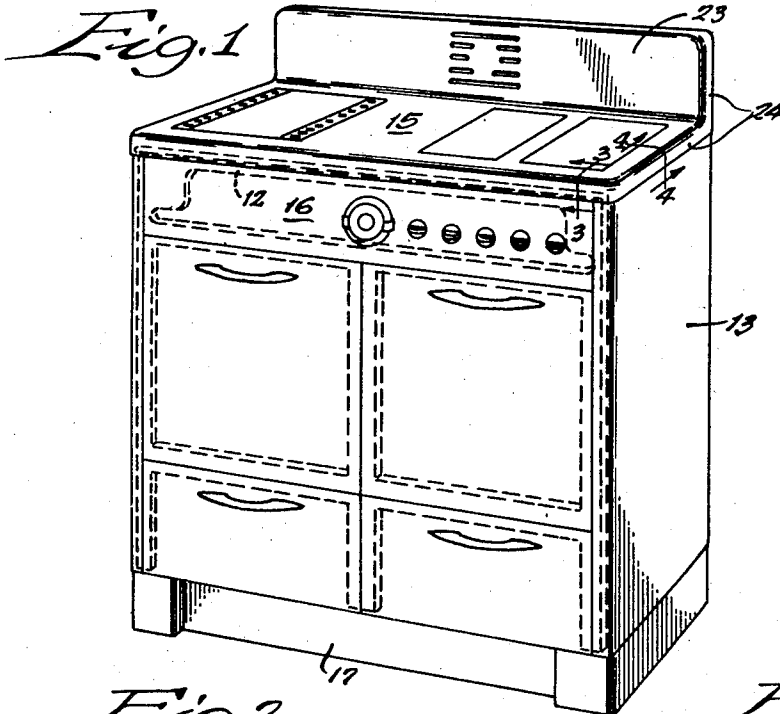
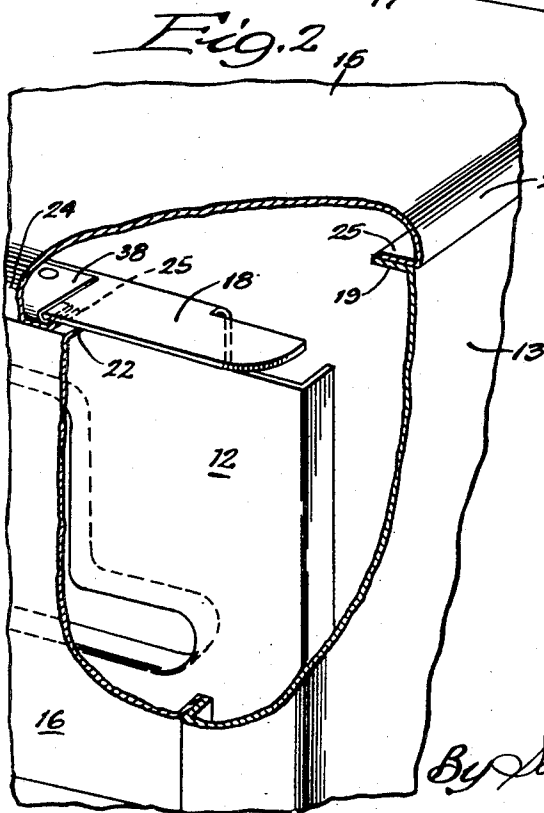
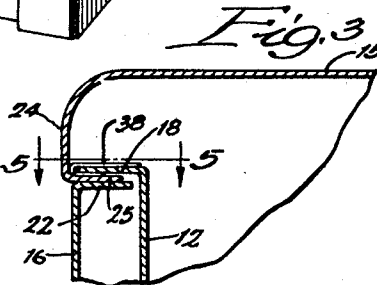
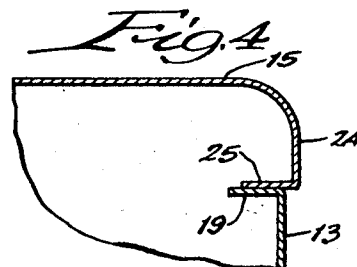
C. J. ROGERS ET AL

2,434,811

STOVE CONSTRUCTION HAVING TOP SECTION SECURING MEANS

Filed July 11, 1945

2 Sheets-Sheet 1



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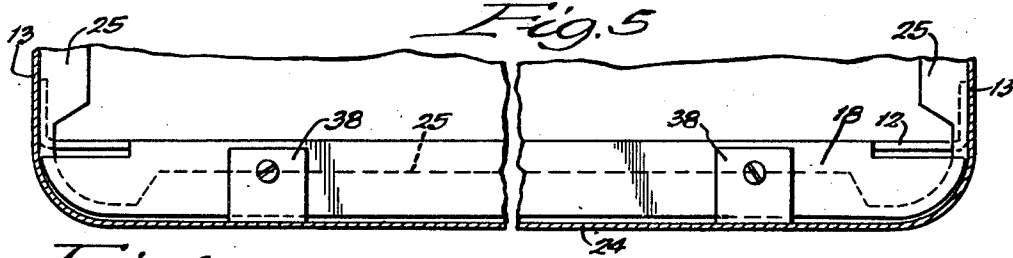
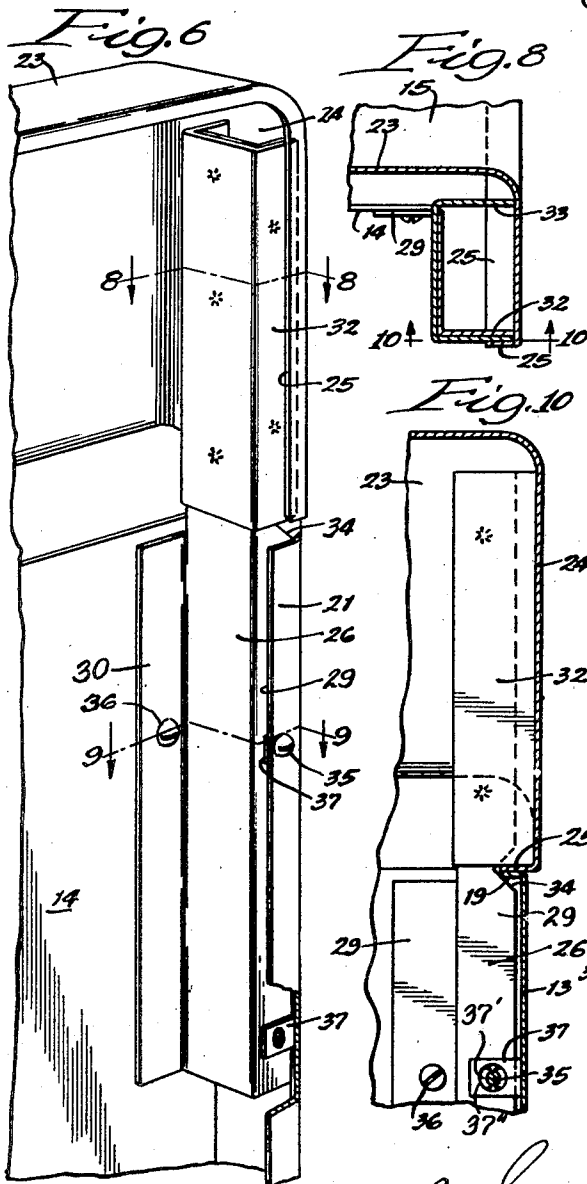
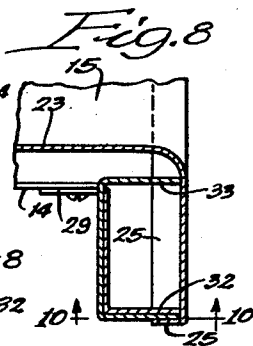
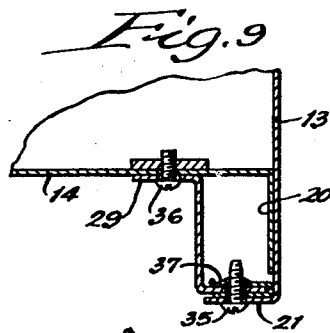
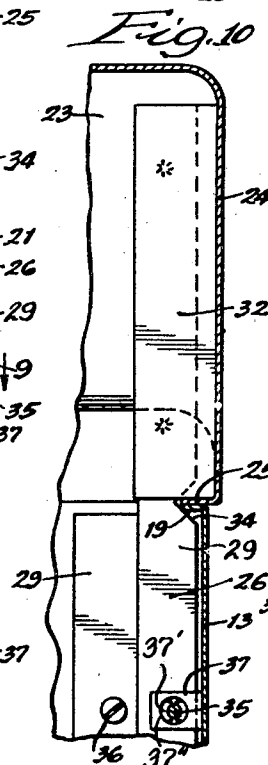
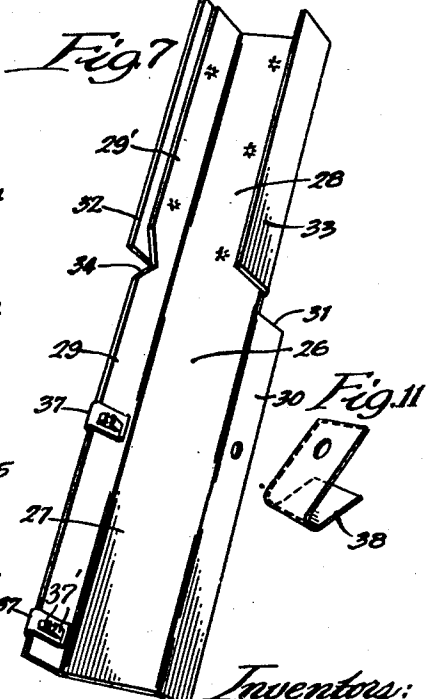
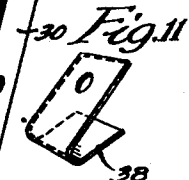
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STOVE CONSTRUCTION HAVING TOP SECTION SECURING MEANS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,434,811

STOVE CONSTRUCTION HAVING TOP
SECTION SECURING MEANSCharles J. Rogers, River Forest, and Jesse Bright,
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5 Claims. (Cl. 126—39)

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This invention relates to kitchen range construction, and more particularly to the means for properly securing the assembly of the sheet metal top, for gas or electrical ranges and stoves, to the supporting front, side, and back sections thereof.

In the construction of the sheet metal body for gas or electrical ranges, one of the problems has to do with effecting a secure and non-shiftable assembly of the several separately-formed stampings. In this connection, it has been the aim of stove manufacturers to provide and place fastening means which would allow for any relative expansion of the associated parts due to the variation in the heating of one or the other thereof, and yet avoid the likelihood of any loose joints between such parts. Also, it has always been the purpose to have these fastening means obscured from sight as fully as possible.

The problem of attaining all of these ends at one and the same time has been most difficult, especially in connection with the stove top. Upon its appearance at the time of sale and during a period of long usage depends much in the way of acceptableness of the stove. Naturally, the manner of assembling the top to the other parts has much to do with the rigidity of the stove frame. Moreover, being contiguous to the heating elements, the top section is subject to expansion more than any of the other parts. These circumstances factor in determining the character of the means whereby the top is secured in place to the other supporting parts.

Heretofore, a number of bolts and nuts have been used to connect together the perimetrical flanges on the stove top and on the vertical side, end, and back sections of the body. The positioning of these flanges has made satisfactory provision for hiding these bolts and nuts from view. However, having the top fastened at so many different points, and usually being very firmly fastened, has often not allowed for the relative yielding of the parts due to heat expansion. The resulting strains, especially on the top, have caused a cracking and chipping of the enamel surfaces, making the top section certainly unsightly and possibly unsanitary.

The main objects of this invention, therefore, are to provide an improved form of interlocking assembly and fastening means for securing the top to the supporting parts so as to allow for slight variations in undertaking to form the parts to close dimensional requirements and so as to permit a reasonable amount of expansional yielding of the top section relative to the other parts without resulting in loose joints; to pro-

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vide a single pair of obscurely-placed fastening means which secure the top against any free movement in any direction relative to any of the other parts with which it is interlocked; and to provide an improved interlocking assembly and fastening means of this kind which is simple and economical to manufacture, positive and easy to assemble, and extremely efficient in its functioning.

In the particular embodiment of this invention shown in the accompanying drawings,

Fig. 1 is a perspective view of a stove, the top section and fastening means for which has been constructed in accordance with this invention;

Fig. 2 is an enlarged fragmentary and partially cut-away view of the front corner of the improved stove construction;

Fig. 3 is an enlarged fragmentary cross-sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a similar view taken on the line 4—4 of Fig. 1;

Fig. 5 is a horizontal sectional view of the front portion of the stove as viewed from the line 5—5 of Fig. 3;

Fig. 6 is an enlarged rear perspective of one side of the stove showing one of the fastening means in place;

Fig. 7 is a perspective view of one of the fastening means shown in Fig. 6, the view being the reverse of that shown in Fig. 6.

Fig. 8 is an enlarged fragmentary cross-sectional view taken on the line 8—8 of Fig. 6;

Fig. 9 is a similar view taken on the line 9—9;

Fig. 10 is a side-elevational view of the assembly shown in Fig. 6 as viewed from line 10—10 of Fig. 8; and

Fig. 11 is a perspective view of one of the spring clips used to ensure a tight fit between the overlapping flanges of the front and top sections of the stove.

A stove body or housing, with which has been employed the improved form of interlocking assembly and fastening means embodying this invention as hereinafter described, comprises a front section 12, a pair of side sections 13, a back section 14, and a top section 15. These parts, together with the valve apron or switch panel 16, are of more or less conventional form and are secured together along their vertical perimeters and supported on a base 17. Within the body or housing are the usual compartments for top burners or heating elements and cooking compartments below, the latter being provided with the usual doors affording access thereto.

The front section 12 is provided with an out-

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wardly-extending flange 18 along its upper perimeter. The sides 13 are provided with similar but inwardly-extending flanges 19 along their upper edges. The back 14 has a rearward extension 20 formed along the vertical edges thereof which nests with that part of the sides 13 extending rearwardly of said back 14 and terminating in the vertically-disposed flanges 21 located in spaced parallel relationship with said back 14. The horizontal side flanges 19 (see Fig. 10) extend rearwardly to the vertical side flanges 21 (see Fig. 9). The panel 16 has an inwardly-extending flange 22 along its upper edge in opposed relationship to the flange 18 of the main front section 12.

The top 15 is formed with a back panel 23 and with a transverse border section 24 around the entire perimeter of the top, including the back panel 23. This border portion terminates in an inwardly-extending flange 25 extending around the entire perimeter. The flanges 25 along the lateral border portions extend rearwardly to meet the vertical flange 25 of the lateral border portions of the back panel 23.

The top 15 is formed with the usual openings to accommodate the conventional burners or heating units.

The preferred form of retaining bracket 26, embodying this invention, whereby the top section 15 is secured in place, is in the form of a bar or plate with its lower and upper portions 27 and 28 differently flanged. Flanges 29 and 30, integral along the lateral edges of the lower portion 27, extend in opposite but parallel directions. The flange 29 continues along the upper bracket portion 28 as flange 29', whereas the flange 30 terminates at 31. A U-shaped auxiliary element is welded or otherwise secured to the upper portion 28 of the bracket 26 so as to provide lateral flanges 32 and 33 extending in parallel planes on the same side of bracket 26 as the flanges 29—29'. The U-shaped auxiliary element is positioned so that the end of the flange 32 registers with the apex of a V-shaped notch 34 cut in at the junction of flanges 29—29', which locates the lower end of the flange 33 slightly above the terminus 31 of the flange 30.

Spring U-shaped clips 38 such as shown in Fig. 11 serve to secure the top 15 against any free play due to any variations in the attempt to stamp out the body parts to dimensional standards. One or more of these clips may be placed over the edge of the flange 18, and have the longer leg suitably bolted to the upper face of the flange 18. This leaves the shorter leg in position to be engaged by the upper face of the front border flange 25.

A pair of the brackets 26—right- and left-hand constructions, respectively—without the use of any other fastening means, lock the top section 15 in place on the front, side, and back sections. They secure the top against any front-to-back shifting, against any sidewise shifting, and against any movement vertically. When the top 15 is placed in position on these sections the flange 25, extending inwardly from the front border section 24, slips under the forwardly-extending flange 18 of the front 12, whereas the flanges 25 along the lateral border sections 24 rest on top of the inwardly-extending flanges 19 of the sides 13. When this top is pushed back, so that the edge of the flange 18 on the front 12 abuts against the inner face of the transverse border portion 24 along the front of the top, the flanges 25 along the lateral border portions 24 of the back panel 23 are disposed rearwardly of a posi-

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tion of vertical alignment with the flanges 21, a distance approximately equal to the thickness of the flange 32 on the upper bracket part 28 (see Figs. 6 and 8). How nearly aligned would be the vertical relationship of these two flanges 21 and 25 would depend upon how the flange 32 is formed on the bracket portion 28 and the type of nut used on the bolts which clamp the bracket flange 29 to the side flange 21. Were the flange 32 integral with and a continuation of the flange 29, or were the parts formed so that the flange 32 replaced the flange 29', the relationship of these parts of the flanges 21 and 25 to vertical alignment would be altered accordingly. Likewise, the type of nuts on the fastening bolts would similarly affect the relationship of these flange parts. In any event, these flange parts 25 and 21 are to be relatively positioned so that when a bracket 26 is in place between the back 14 and a side flange 21 said flange part 25 abuts against the bracket flange 32.

With the top 15 thus assembled on the several supporting sections, a pair of right-hand and left-hand bracket members 26 are placed in position at the opposite back sides, as shown in Figs. 6 and 10. This brings the flange 29 inwardly of and in engagement with the flange 21 and locates the flange 30 against the back 14. The flange 32 is thus located inwardly of the flange 25 on the top back panel 23 with the notch 34 engaging the inner edges of the superimposed rearward extensions of the side flange 19 and the top flange 25 and with the lower ends of the bracket flanges 32 and 33 resting on the top of the flange 25. The outer vertical edges of the bracket flanges 32 and 33 abut against the inner face of the opposed border section 24 of the top back panel 23.

With the pair of bracket members 26 thus placed in position, threaded bolts 35 are inserted through registering holes in the flanges 21 and 29 and one or more threaded bolts 36 are inserted through registering holes in the flange 30 and the back 14. Nuts are placed and drawn up on the bolts 35 and 36 inwardly of the flange 29 and back 14, respectively. Although these nuts may be of any suitable type, as shown in Fig. 7, the special type spring lock-nut 37 shown is preferred, since it secures the nuts against accidental displacement. Such a lock nut is of U-shaped spring metal form as shown in Figs. 7 and 9 which has prongs 37' upset from one leg thereof, the opposed ends of which are threaded and axially aligned with an opening 37'' in the other leg. Thus the threads on the bolts 35 and 36 screw into the opposed ends of the prongs 37' and have a tendency to draw the spring prongs 37' inwardly which serves to lock the bolts 35 and 36 against accidental displacement.

With these clamping brackets thus bolted in place, the top is prevented from any front-to-back shifting because of the engagement of the inwardly-extending flange 18 of the front 12 with the transverse border section 24 and flange 25 along the front and the interlocking engagement of the flanges 21 and 25 against the respective flanges 29 and 32. The top is also held against any sidewise movement by reason of the fact that the opposite brackets 26 firmly engage the opposed inner faces of the transverse border section 24 of the top back panel 23. Moreover, the top is prevented from having any vertical movement by reason of the fact that the superimposed extensions of the flanges 19 and 25 are firmly secured under the ends of the flanges 32

and 33 and held against the flange 29 at the point of the notch 34.

Variations and modifications in the details of structure and arrangement of the parts may be resorted to within the spirit and coverage of the appended claims.

We claim:

1. A sheet metal stove construction of the class described comprising, side, front, and back sections wherein the side and front sections are suitably secured together along their vertical abutting perimeters and the back section is secured between said side sections inwardly of their rear vertical perimeters, said front and sides having horizontally-disposed flanges formed along their upper edges, the flange on said front extending forwardly thereof and the flanges on said side sections extending inwardly, a vertical flange extending inwardly from each of said sides in rearwardly-spaced parallel relationship to said back, a top section having a transverse perimetrical border formed with an inwardly-extending flange, said top being assembled with a said side, front, and back sections with the border flange along the front edge of said top engaged under the forwardly-extending flange on said vertical front section but with the lateral border flanges of said top resting upon the flanges of said side sections, and a retaining bracket interposed between and secured to said back section and each of the contiguous inwardly-extending side flanges, a part on each of said brackets interlocking with the flange of the adjacent border portion of said top and abutting against the inner face of the adjacent top border so as to secure said top against forward-rearward and sidewise movement relative to said front, back, and side sections.

2. A sheet metal stove construction of the class described comprising, side, front, and back sections wherein the side and front sections are suitably secured together along their vertical abutting perimeters and the back section is secured between said side sections inwardly of their rear vertical perimeters, said front and sides having horizontally-disposed flanges formed along their upper edges, the flange on said front extending forwardly thereof and the flanges on said side sections extending inwardly, a vertical flange extending inwardly from each of said sides in rearwardly-spaced parallel relationship to said back, a top section having a transverse perimetrical border formed with an inwardly-extending flange, said top being assembled with said side, front, and back sections with the border flange along the front edge of said top engaged under the forwardly-extending flange on said vertical front section but with the lateral border flanges of said top resting upon the flanges of said side sections, and a retaining bracket interposed between and secured to said back section and each of the contiguous inwardly-extending side flanges, a part on each of said brackets interlocking with the flange of the adjacent border portion of said top and abutting against the inner face of the adjacent top border so as to secure said top against forward-rearward and sidewise movement relative to said front, back, and side sections, said retaining brackets each having spaced shoulders formed thereon and adapted to engage and hold the top border flange against vertical separation from the side flanges whereon it rests.

3. A sheet metal stove construction of the class described comprising, side, front, and back sec-

tions wherein the side and front sections are suitably secured together along their vertical abutting perimeters and the back section is secured between said side sections inwardly of their rear vertical perimeters, said front and sides having horizontally-disposed flanges formed along their upper edges, the flange on said front extending forwardly thereof and the flanges on said side sections extending inwardly, a vertical flange extending inwardly from each of said sides in rearwardly-spaced parallel relationship to said back, a top section formed with an integral vertical back panel and having a transverse border portion around its entire perimeter terminating in an inwardly-extending flange spaced from but parallel to the plane of said top and its back panel respectively, said top section being assembled with said side, front, and back sections with the border flange along the front edge of said top engaged under the forwardly-extending flange on said vertical front section and with the lateral border flanges of said top resting upon the flanges of said side section and also with the lateral border flanges on said back panel in approximate vertical alinement with the inwardly-extending vertical side flanges paralleling said back section, and a retaining bracket interposed between and secured to said back section and each of the contiguous inwardly-extending vertical side flanges, a part on each of said brackets interlocking with the adjacent inwardly-extending lateral border flange on said back panel and abutting against the inner faces of the adjacent lateral border of said panel so as to secure said top against forward-rearward and sidewise shifting relative to said front, side, and back sections.

4. A sheet metal stove construction of the class described comprising, side, front, and back sections wherein the side and front sections are suitably secured together along their vertical abutting perimeters and the back section is secured between said side sections inwardly of their rear vertical perimeters, said front and sides having horizontally-disposed flanges formed along their upper edges, the flange on said front extending forwardly thereof and the flanges on said side sections extending inwardly and continuing rearwardly of said back section, a vertical flange extending inwardly from each of said sides in rearwardly-spaced parallel relationship to said back, a top section formed with an integral back panel and having a transverse border portion around its entire perimeter terminating in an inwardly-extending flange, the horizontal flanges along the lateral edges extending rearwardly to meet the vertical flanges along the lateral edges of the back panel, said top being assembled with said side, front, and back sections with the border flange along the front edge of said top engaged under the forwardly-extending flange on said vertical front section and with the lateral border flanges of said top resting upon the inwardly-extending flanges of said side sections and also with the vertical border flanges on said back panel being in approximate vertical alinement with the inwardly-extending vertical side flanges paralleling said back section, and a retaining bracket interposed between and secured to said back section and each of the contiguous inwardly-extending side flanges, a part on each of said brackets engaging the inwardly-extending border flange on said back panel and abutting against the inner face of the adjacent lateral border of said panel so as to secure said top

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against forward-rearward and sidewise shifting relative to said front, side, and back sections, each of said retaining brackets being recessed to provide a pair of opposed shoulders adapted to respectively engage the under and upper faces of the superimposed flanges of said top and side sections rearwardly of said back so as to also secure said top against vertical separation from said side sections.

5. A sheet metal stove construction of the class described comprising, side, front, and back sections wherein the side and front sections are suitably secured together along their vertical abutting perimeters and the back section is secured between said side sections inwardly of their rear vertical perimeters, said front and sides having horizontally-disposed flanges formed along their upper edges, the flange on said front extending forwardly thereof and the flanges on said side sections extending inwardly and continuing rearwardly of said back section, a vertical flange extending inwardly from each of said sides in rearwardly-spaced parallel relationship to said back, a top section formed with an integral back panel and having a transverse border portion around its entire perimeter terminating in an inwardly-extending flange, the horizontal flanges along the lateral edges extending rearwardly to meet the vertical flanges along the lateral edges of the back panel, said top being assembled with said side, front, and back sections with the border flange along the front edge of said top engaged under the forwardly-extending flange on said vertical front section and with the lateral border flanges of said top resting on the inwardly-extending flanges of said side sections and also with the vertical border flanges on said back panel being in approximate vertical alignment with the inwardly-extending vertical side flanges paralleling said back section, and a pair of retaining brackets the lower portion of each having flanges along the lateral edges extending in opposite directions and the upper portion of

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tending in the same direction, said brackets being positioned with the part having the oppositely-disposed lateral flanges interposed between and secured to the back section and the respective contiguous inwardly-extending parallel side flange and with one of the flanges on the other part placed inwardly of and in engagement with the respective inwardly-extending border flange on the back panel of said top and with its edge bearing against the adjacent inner face of the panel border whereby said top is secured against forward-rearward and sidewise movement relative to said front, side, and back sections, the lateral flange on said one part of said bracket which extends in the same direction as the flanges on said other part of said members having a V-shaped notch formed therein adjacent to the end of the other lateral flange on said other part so as to form a pair of opposed shoulders adapted to respectively engage the under and upper faces of the superimposed flanges on said top and side sections rearwardly of said back thereby also holding said top against vertical separation from said side sections.

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