

Jan. 14, 1936.

H. D. GEYER

2,028,058

QUICK ASSEMBLED SECTIONAL CABINET

Filed Feb. 11, 1933

2 Sheets-Sheet 1

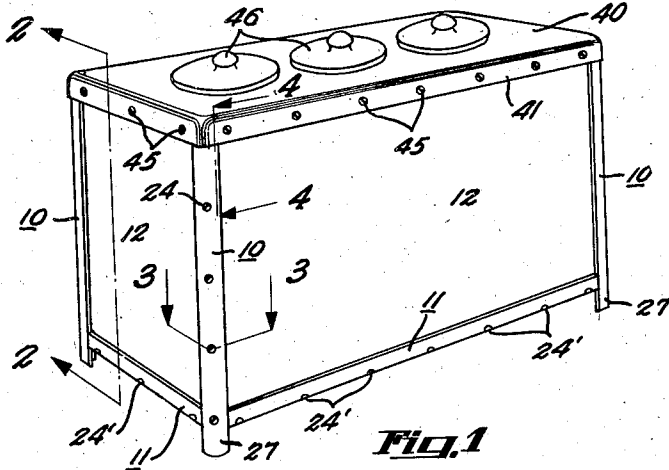


Fig. 1

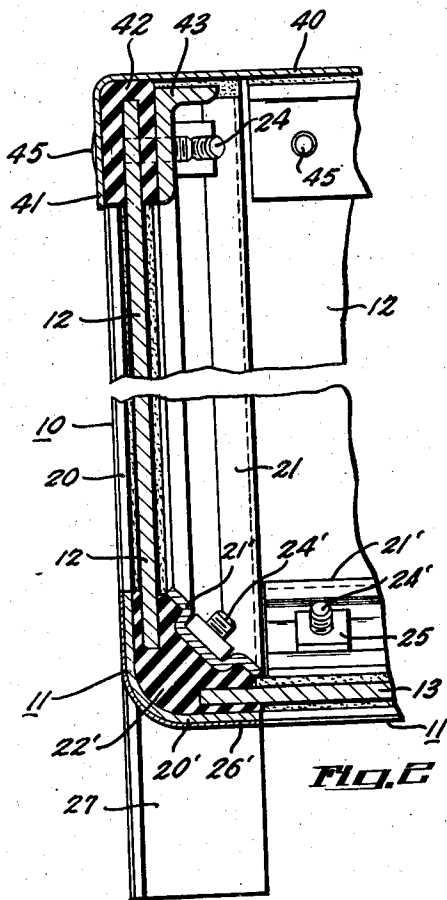


Fig. 2

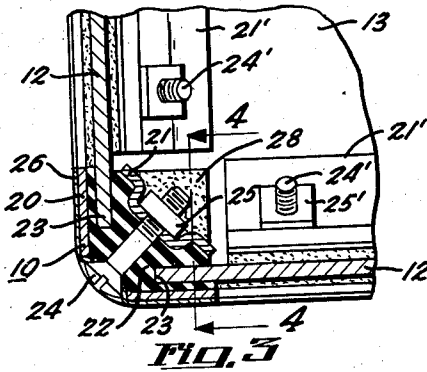
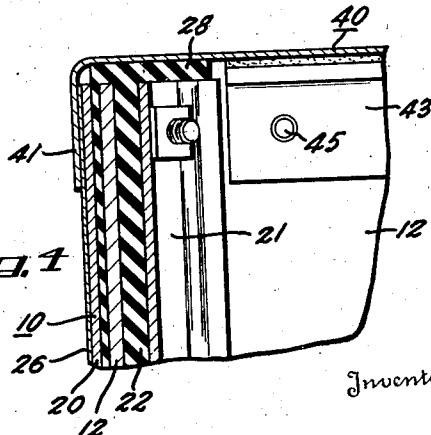


Fig. 3

Fig. 4



Inventor
Harvey D. Geyer
By *Spencer Hardman & Fehr*
his Attorneys

Jan. 14, 1936.

H. D. GEYER

2,028,058

QUICK ASSEMBLED SECTIONAL CABINET

Filed Feb. 11, 1933

2 Sheets-Sheet 2

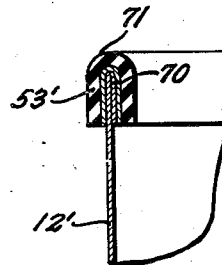
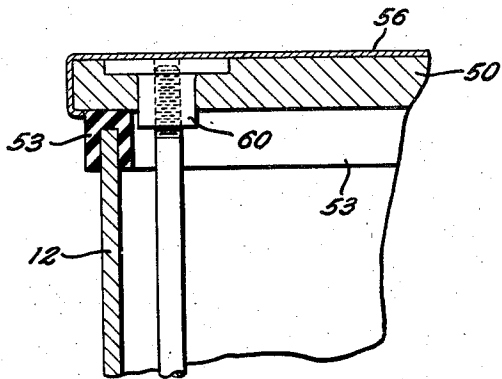


FIG. 6

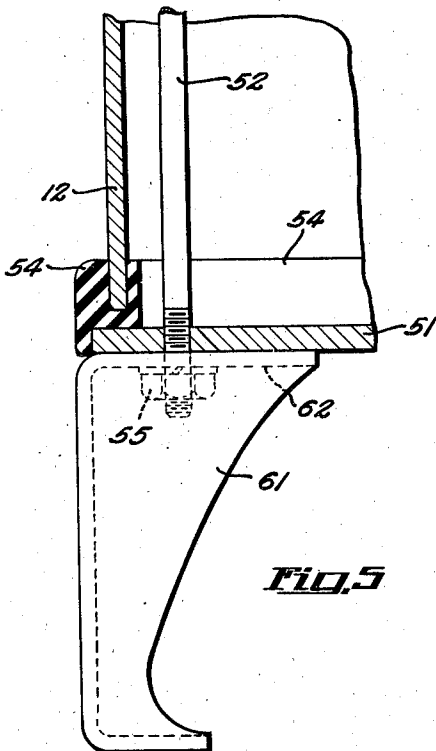


FIG. 7

FIG. 5

Inventor

Harvey D. Geyer

By *Spencer Hardman & Lehr*
his Attorneys

UNITED STATES PATENT OFFICE

2,028,058

QUICK-ASSEMBLED SECTIONAL CABINET

Harvey D. Geyer, Dayton, Ohio, assignor, by
mesne assignments, to General Motors Corpo-
ration, Detroit, Mich., a corporation of Dela-
ware

Application February 11, 1933, Serial No. 656,241

7 Claims. (Cl. 220-9)

This invention relates to cabinet construction, such as ice cream and food cabinets, and has particular reference to cabinets which may be shipped in knocked-down form and afterwards easily and quickly assembled for use.

This invention applies in general to the cheaper types of cabinets where the cost of shipment in completely assembled form would be a relatively large percentage of the total retail sales price. The general object of this invention therefore is to provide a cabinet construction which is especially suitable to be completely manufactured in disassembled form, but which can be quickly and easily assembled after shipment without the use of a large number of small detached parts, such as small bolts, screws, etc.

A prime feature of this invention is the composite corner strips of metal and a resilient interior body, such as rubber, which may be completely manufactured as a unitary form and shipped with the unassembled wall panels of the cabinet. Then upon assembling the cabinet, the separate wall panels are simply inserted within grooves in the composite corner strips, and the corner strips then compressed (by simple means built as a unitary part thereof) to tightly clamp the margins of the wall panels thereto and so build up the cabinet.

An especial advantage of such rubber and metal unitary corner strips is the great ease and efficiency of assembling the wall panels thereto and the provision of a sealed corner joint thereby in a very simple manner. Various other structural advantages of this invention will appear hereinafter as the description thereof proceeds.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred embodiment of one form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a perspective view of a cabinet suitable for keeping ice cream or other frozen or refrigerated foods in containers with dry ice as the refrigerant. No thick heat insulating walls are shown, but of course if such are desired, additional slabs of heat insulating boards could be easily added as an interior lining to the outer cabinet construction which is the subject matter of this invention.

Fig. 2 is a section taken on line 2-2 of Fig. 1

and shows a section through the upper and lower horizontal corners of the cabinet.

Fig. 3 is a section taken on line 3-3 of Fig. 1 and shows a section through a vertical corner of the cabinet.

Fig. 4 is a section taken on line 4-4 of Fig. 1 and shows how the vertical composite corner strip also seals the joint with the cabinet top.

Fig. 5 shows a modified form of cabinet construction, and is a vertical section taken through a cabinet corresponding to the view line 2-2 of Fig. 1.

Fig. 6 is a detail view showing a vertical section through a sheet metal vertical wall.

Fig. 7 shows a modified form of composite corner strip wherein there are no screw heads visible from the outside of the cabinet. This form of corner strip may be used at the vertical corners of the cabinet construction shown in Fig. 5, or at either the vertical or bottom horizontal corners of the cabinet construction shown in Fig. 1 as an alternative to the form shown in Figs. 2 and 3.

Similar reference characters refer to similar parts throughout the several views.

The cabinet of Fig. 1 comprises four vertical composite corner strips 10 and four similar bottom horizontal composite corner strips 11. The plain flat side wall panels 12 and the bottom panel 13 are illustrated as a relatively thick molded composition, such as a wood fiber board or masonite, however panels 12 and 13 may be of sheet metal if desired. These panels 12 and 13 are held securely in place by the composite corner strips 10 and 11 to form the box construction of the cabinet.

These composite corner strips as shown in Figs. 1 to 4 will now be described. Each composite strip or corner post 10 comprises an outer metal angle 20, an inner metal plate 21, and an interposed resilient rubber strip 22 having grooves 23 molded therein and adapted to receive the marginal edges of the vertical panels 12 (see Fig. 3). Preferably the rubber strip 22 is bonded to the metal strips 20 and 21 by vulcanization in situ, or it may be vulcanized to either one of these metal strips and the other metal strip applied thereto and secured in place by the series of spaced bolts 24 and to nuts 25. Preferably the nuts 25 are welded in place to the inner metal strip 21 in order to facilitate the insertion of the bolts 24 and the assembling of the composite strips 10. The outer surface of the outer strip 20 is preferably covered with a thin strip 26 of finishing metal such as stainless

steel, or it may be finished by surface plating or by the application of lacquer or enamel. The composite corner post 10 is made and assembled as above described as a separate unit. Now when the cabinet is assembled, the margins of the panels 12 are inserted snugly into the grooves 23 in the resilient rubber 22 and then the metal strips 20 and 21 drawn together by tightening the bolts 24, thereby compressing the rubber tightly upon the margins of panels 12 and thereby securing them to the corner posts 10 and at the same time providing a sealed joint between panels 12 and the corner post 10. Obviously such clamping of the panels 12 to the corner post 10 may be very simply done from the exterior of the cabinet simply by tightening bolts 24 with a screw-driver. As shown in Figs. 1 and 2, the outer metal angle strips 20 may extend below the bottom 13 of the cabinet and provide the short legs 27 therefor.

The bottom horizontal composite corner strips 11 may be made and assembled in a similar manner to that above described for the corner posts 10. A section through the composite corner strip 11 is clearly shown in the lower part of Fig. 2, wherein the similar reference numerals designate the corresponding parts of the vertical corner posts 10 shown in section in Fig. 3. Obviously the margins of the bottom panel 13 and the bottom margins of the side panels 12 are inserted snugly in the grooves in the rubber strips 22', and then securely clamped in place by tightening the series of bolts 24'. Preferably the vertical rubber strip 22 of the corner post 10 extends down below the bottom end of the inner metal strip 21 and has a rubber pad 28 thereon (see Fig. 3) against which the bottom panel 13 abuts when it is inserted in place. This provides a sealed joint between the bottom 13 and the corner posts 10. This construction is similar to that shown at the upper end of the corner post 10 (see Fig. 4) where the rubber pad 28 projects beyond the upper end of the metal strip 21 and abuts against the top panel 40 of the cabinet to provide a seal at the corners.

Now after the vertical side panels 12 and bottom 13 have been assembled as described above, the top panel 40 is assembled to the cabinet to complete same. In Figs. 1 to 4 the top panel 40 is shown as of sheet metal having a marginal down-turned flange 41. A resilient rubber strip 42 of U-section with the metal angle 43 bonded thereto is applied over the upper margins of the four vertical panels 12 between the four corner posts 10. The top panel 40 is then set down over the rubber strip 42, fitting quite snugly thereupon. A series of small screws 45 are then inserted through registering holes in the flange 41, panels 12, metal angles 43 and rubber strip 42, the holes in the angles 43 being threaded to receive screws 45. Now screws 45 may be easily tightened with a screw-driver to draw the metal angles 43 tightly upon the rubber strips 42, thereby causing the resilient rubber to bulge in all directions and provide a tight seal between the side panels 12 and top panel 40. The cabinet is then fully assembled and is substantially air-tight due to the rubber seals at all joints. The removable lids 46 in the top 40 provide access to the cabinet interior for the insertion of containers of ice cream or other food products. Of course any desired interior construction may be provided in addition to the exterior cabinet construction which is the subject matter of this invention.

Fig. 5 shows a modified form of cabinet construction, wherein the four vertical side panels may be first secured together in the manner described above in connection with Figs. 1 to 4, and then the top and bottom panels 50 and 51 secured to the assembled side walls by a series of vertical tie bolts 52. The top edges of the vertical side panels 12 have the molded resilient rubber strips 53 applied thereupon and extending from corner post to corner post on each panel 12. Similarly the molded resilient rubber strips 54 are applied to the bottom edges of all the panels 12. Now when the top and bottom panels 50 and 51 are laid in position and the tie bolts 52 inserted in the holes provided therefor, the entire assembly is clamped rigidly together by tightening nuts 55 which is readily done from the exterior of the cabinet. Obviously the resilient rubber strips 53 and 54 are thereby compressed and caused to provide a tight sealed joint between the vertical walls 12 and the top and bottom walls 50 and 51 respectively. The top panel 50 shown in Fig. 5 is of molded composition, such as wood fiber and a suitable binder therefor, having the threaded metal inserts 60 therein adapted to receive the threaded upper ends of tie rods 52. The outer exposed surface of the molded panel 50 is preferably covered with a thin sheet 56 of stainless steel, or other suitable material, which may be crimped thereupon as clearly shown in Fig. 5. The separate cast metal feet 61 are applied to the bottom side of the bottom panel 51 and held rigidly clamped in place by the tie bolts 52 extending through suitable holes in a top flange 62 thereon, as clearly shown in Fig. 5.

Fig. 6 shows a modified form wherein the vertical side panels are of sheet metal 12'. These sheet metal panels 12' have a thickened upper edge 70, formed by crimping several folds in the upper edge of the sheet metal, in order to provide a thicker support for the resilient rubber strip 71 applied thereupon. This form of side panel 12' may be used with either of the cabinet constructions described above. Of course the bottom edges of the metal panels 12' may be made similar to the top edges thereof shown in Fig. 6.

Fig. 7 illustrates another form of composite corner strip which may be substituted for the composite corner strips shown in section in Figs. 2 and 3. In other words the corner strip of Fig. 7 may be used either as the vertical corner posts of the cabinet, or as the horizontal corner strips connecting the bottom 13 to the lower edges of the vertical side panels 12. The composite corner strip of Fig. 7 comprises an outer metal angle 80 preferably of steel, to which the inwardly projecting threaded studs 81 are welded, an inner metal angle strip 82, and the interposed molded resilient rubber body 83. Preferably the metal angle strips 80 and 82 are bonded to the rubber 83 by being vulcanized thereto, so that the separate elements of the composite corner strip form a unitary construction which can be readily manufactured and shipped as a unit. The washers 84 and nuts 84 are applied to the projecting threaded ends of studs 81 after the parts 80, 82 and 83 are removed from the vulcanizing mold to form the complete unitary composite corner strips. The rubber body 83 has suitable grooves or recesses 85 molded therein to receive with a neat fit the marginal edges of the panels 12 to be connected together by the corner strip. The marginal

edges of panels 12 are then clamped tightly in place by tightening the nut 24, which draws the metal angles 20 and 22 closer together and highly compresses the intervening rubber strip 23 upon the margins of the panels 12. The assembling of the entire cabinet is more fully described hereinabove in connection with Figs. 1 to 4.

The method of this invention of assembling panels upon a composite corner strip is capable of a variety of applications and is not intended to be limited to the manufacture of cabinets.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. In a cabinet construction, in combination, a molded soft rubber corner strip having two angularly disposed grooves therein adapted to receive the edges of two adjoining wall panels, two individual cabinet wall panels having their adjacent marginal edges inserted in said two grooves respectively, inner and outer relatively rigid metal facing strips fixed to said rubber corner strip as a unitary part thereof, and means for clamping said inner and outer facing strips upon said soft rubber corner strip and thereby highly compressing same and simultaneously sealing the joints thereof with said panels.

2. In a cabinet construction, in combination, a resilient rubber corner strip having two angularly disposed grooves therein adapted to receive the edges of two adjoining wall panels, two individual cabinet wall panels having their adjacent marginal edges inserted in said two grooves respectively, inner and outer relatively rigid metal facing strips secured upon opposite sides of said resilient corner strip as a unitary part thereof, and means for clamping said inner and outer facing strips together to compress the intermediate resilient corner strip tightly upon the marginal edges of said two wall panels.

3. In a cabinet construction, a composite corner strip having a molded resilient rubber interior body and inner and outer metal facing strips fixed thereto as a unitary part thereof, said rubber body having grooves therein to receive the marginal edges of adjoining cabinet panels, and clamping bolts interconnecting said metal facing strips whereby said resilient rubber body

is compressed tightly upon and substantially seals the marginal edges of the adjoining panels.

4. In a cabinet construction, in combination, two wall panels adjoining a corner of the cabinet, a unitary composite corner strip having a resilient rubber interior body and inner and outer metal facing strips therefor, said resilient body having two grooves to receive the marginal edges of said two panels respectively and means unitary with said composite corner strip for compressing said rubber body tightly upon the margins of said two wall panels to isolatingly fix said corner strip and panels together.

5. A cabinet adapted to be shipped in knocked-down form and then easily assembled, said cabinet comprising: separate unitary side and bottom panels, a plurality of panel isolating resilient rubber corner strips each having two grooves therein receiving the edges of the two adjoining panels, inner and outer metal corner strips clamped together upon each of said resilient rubber corner strips to compress the same upon the edges of said panels and thereby seal the joints therewith, and longitudinally spaced clamping means extending through said rubber corner strips and forcing said inner and outer metal corner strips together.

6. A cabinet adapted to be shipped in knocked-down form and then easily assembled, said cabinet comprising: separate unitary side and bottom panels, resilient rubber corner strips each having two grooves therein for the reception of the edges of adjoining panels, metal facing strips attached to opposite sides of said resilient corner strips and clamped upon and compressing same upon the edges of said panels and providing firm sealed joints between adjoining panels.

7. A cabinet adapted to be shipped in knocked-down form and then easily assembled, said cabinet comprising: separate unitary side and bottom panels, resilient rubber corner strips each having two grooves therein for the reception of the edges of said panels, relatively rigid facing strips attached to the inner and outer sides of said resilient corner strips and clamped upon and compressing same upon the edges of said panels and thereby substantially sealing the joints therewith, and bolt means actuatable from the exterior of the cabinet for clamping said inner and outer facing strips together.

HARVEY D. GEYER.