June 7, 1955 R. D. COPE 2,710,110

HOME FREEZER CABINET

Filed April 27, 1953 2 Sheets-Sheet 1

FIG. 1

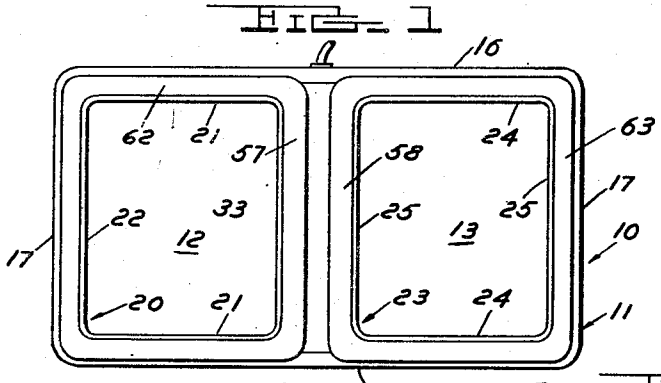

FIG. 2

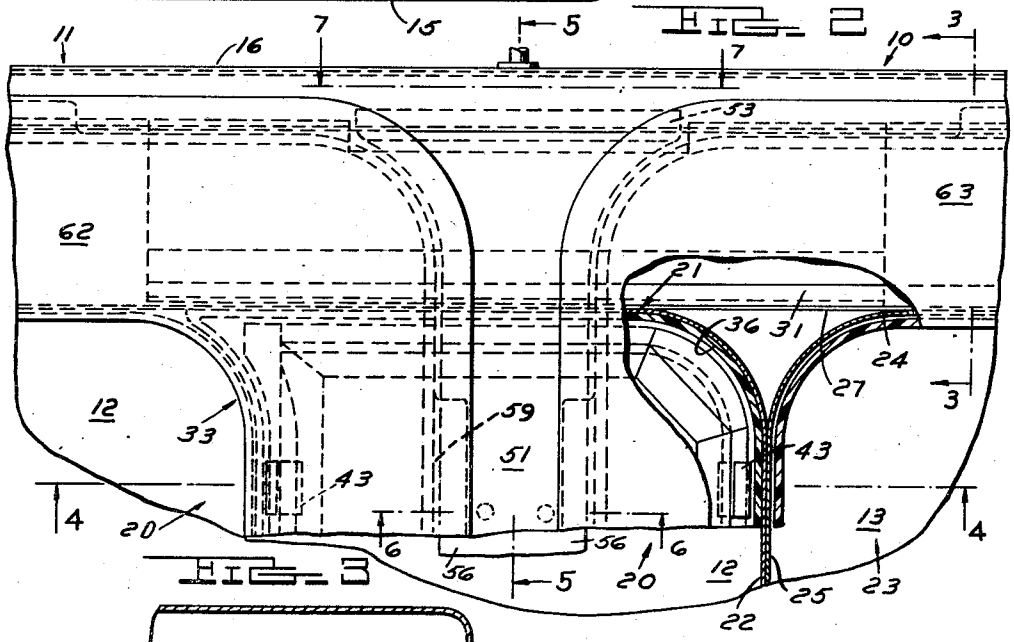

FIG. 3

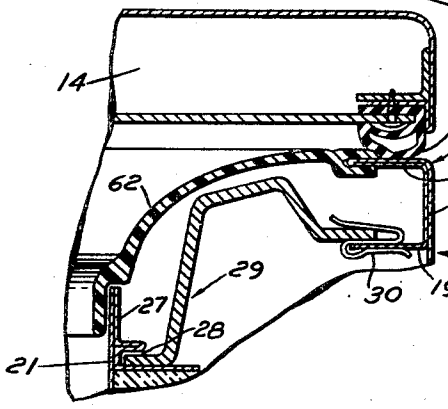

FIG. 7

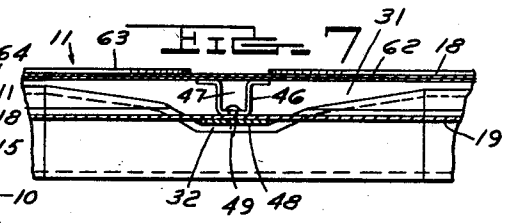

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FIG. 4

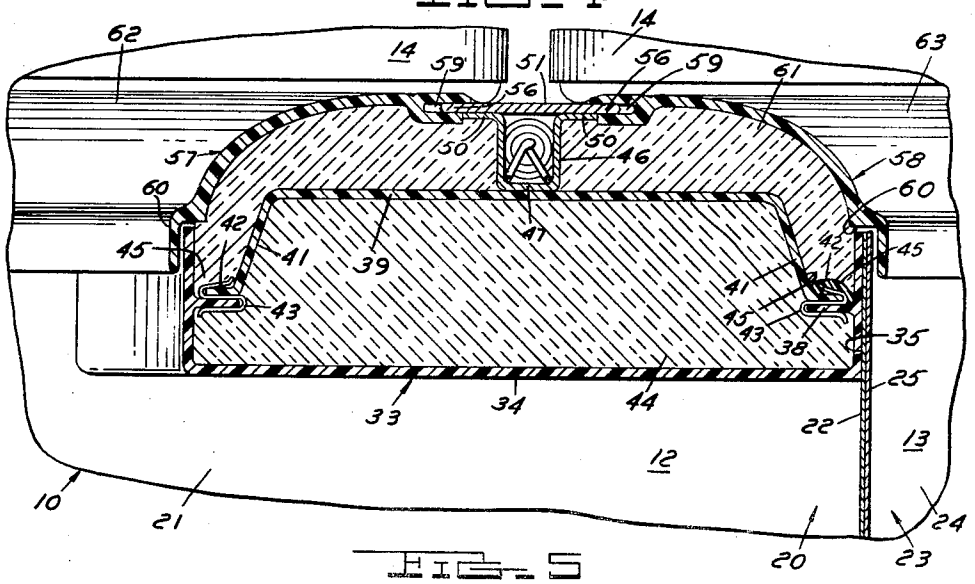


FIG. 5

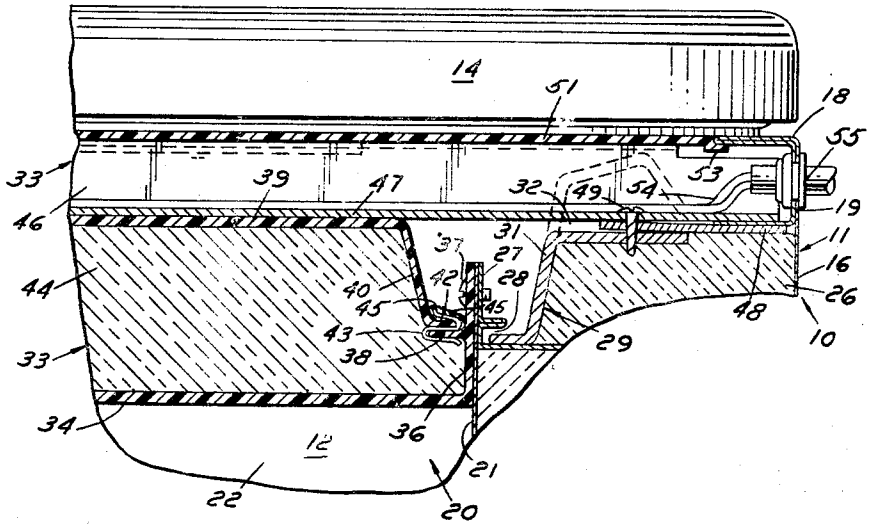
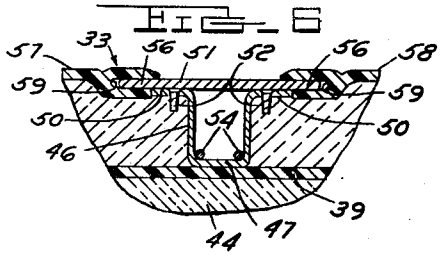


FIG. 6



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HOME FREEZER CABINET

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13 Claims. (Cl. 220—16)

This invention relates generally to refrigerator cabinets and refers more particularly to improvements in cabinets especially adapted for use in connection with home freezers.

It is an object of this invention to provide a home freezer cabinet structure having separate storage compartments accessible through openings at the top of the cabinet and constructed to afford more storage area for a cabinet of given size than heretofore obtainable.

It is another object of this invention to provide a home freezer cabinet wherein the access openings are separated by a mullion extending from one side of the cabinet to the opposite side and overlying the top of one of the compartments. Thus, the mullion forms an abutment for the adjacent ends of doors for the access openings and the space beneath the mullion is available for storage purposes.

It is still another object of this invention to provide a home freezer cabinet structure of the above general type wherein the adjacent walls of the liners forming the storage compartments are secured in face to face contact and thereby occupy a minimum space within the cabinet.

The foregoing as well as other objects will be made more apparent as this description proceeds especially when considered in connection with the accompanying drawings, wherein

Figure 1 is a fragmentary top plan view of a home freezer cabinet having the doors removed;

Figure 2 is an enlarged fragmentary top plan view partly broken away for the sake of clearness;

Figure 3 is a fragmentary sectional view taken substantially on the line 3—3 of Figure 2;

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 2;

Figure 5 is a sectional view taken on the line 5—5 of Figure 2;

Figure 6 is a cross sectional view taken on the line 6—6 of Figure 2; and

Figure 7 is a sectional view taken on the line 7—7 of Figure 2.

Referring now more in detail to the drawings, the numeral 10 in Figure 1 designates a home freezer cabinet having an outer shell 11, a pair of upwardly opening storage compartments 12 and 13 within the confines of the shell 11, and separate doors 14 for the respective storage compartments. The shell 11 is open at the top and has a front side wall 15, a rear side wall 16, end walls 17 and a bottom wall, not shown herein. The side and end walls of the shell 11 are turned inwardly at the top, then outwardly to provide marginal flanges 18 of double thickness, then downwardly along the inner surface of said walls, and then again inwardly to form flanges 19 spaced below the flanges 18.

The compartment 12 is formed by a liner 20 having side walls 21, end walls 22, and a bottom wall, not shown. The compartment 13 is formed by a similar liner 23 also having side walls 24, end walls 25 and a bottom wall, not shown. The two liners are positioned within the shell

11 and are secured to the shell in side by side relationship in any suitable manner not shown in detail herein. The adjacent end walls 22 and 25 of the liners are welded or otherwise secured together in surface to surface contact throughout substantially the entire area thereof, and the remaining walls of the liners are spaced from the adjacent walls of the shell to accommodate thermal insulating material 26. The top edges of the liner walls are spaced below the top edges of the walls of the shell, and strips 27 are welded to the outer surfaces of all the walls of the liners except the walls 22 and 25. The strips 27 extend downwardly from the top edges of the liner walls aforesaid and the lower ends are fashioned to provide laterally outwardly opening channel-shaped sections 28, as shown in Figures 3 and 5 of the drawings.

The space between the walls of the shell 11 and the adjacent walls of the liners is bridged above the thermal insulation 26 by a frame 29 of heat resistant material having the inner marginal edge extending into the channel-shaped portions 28 of the strips 27 and seated on the bottom flanges of said portions. The outer marginal edge of the frame overlies the flanges 19 on the shell 11 and is secured to the flanges 19 by spring clips 30. As shown in Figures 2, 5 and 7 of the drawings, the frame 29 has separate center sections 31 at opposite sides and intermediate the ends of the frame. The sections 31 have depressed central portions 32 which afford clearance for the opposite ends of a mullion 33 about to be described.

The mullion 33 provides an abutment for the adjacent ends of the closures 14 and is positioned within the liner 20 at the top of the compartment 12, as shown in Figure 4 of the drawings. In other words, the mullion is not interposed between the adjacent end walls 22, 25 of the liners or storage compartments as is the usual practice, but on the contrary overlies the top of the storage compartment 12 so that the space within the compartment 12 directly below the mullion may be used for storage purposes. As a result, the mullion occupies little if any usable storage space and, hence, more storage area is provided in a cabinet of given size.

In detail, the mullion 33 includes a part 34 which extends between the opposite side walls 21 of the liner 20 and is formed of a moldable heat resistant plastic material. The part 34 is channel-shaped in cross section and is located within the top of the liner 20 with the channel opening in an upward direction. The upstanding flange 35 at the inner side of the channel-shaped part 34 is in surface to surface engagement with the wall 22 of the liner 20 (Figure 4), and the opposite ends of the part 34 have upstanding flanges 36 (Figure 5) which form continuations of the side flanges on the part 34. The flanges 36 respectively abut the end walls 21 of the liner 20 and are secured to the end walls 21 by fasteners 37. In addition, the part 34 is fashioned with an attaching flange 38 which projects laterally inwardly from the upstanding flanges on the part 34 and which extends continuously around said upstanding flanges.

The mullion 33 also has a second part 39 which extends lengthwise of the part 34 above the latter and which is also formed of a moldable heat resistant plastic material. The part 39 is channel-shaped in cross section and is positioned in the channel of the part 34 with the channel opening downwardly. The opposite ends of the part 39 have depending flanges 40 which form a continuation of the side flanges 41 on the part 39, and said depending flanges are turned laterally outwardly to form terminal flanges 42. The terminal flanges 42 are supported by the flange 38 on the part 34 and are attached to the flange 38 at spaced points by spring clips 43.

The above arrangement is such that the parts 34 and

39 cooperate with one another to provide an enclosed space (Figures 4 and 5) for thermal insulating material 44. The enclosed space formed by the parts 34 and 39 may be sealed, if desired, by a plastic sealing compound 45 applied as indicated in Figures 4 and 5 of the drawings.

The mullion 33 has a third part 46 channel-shaped in cross section and extending longitudinally of the part 39 above the latter with the channel opening upwardly. The opposite ends of the part 46 project beyond the ends of the part 39 and the base portion 47 of the part 46 overlies the flanges 19 projecting inwardly from the walls 15, 16 of the shell 11, as clearly shown in Figure 5 of the drawings. It will also be noted from Figure 5 that strips 48 are welded to the undersides of the flanges 19 at opposite sides of the shell and that the inner ends of the strips 48 overlie the depressed portions 32 of the frame sections 31 as shown in Figure 7 of the drawings. The inner ends of the strips 48 are respectively secured to the sections 31 by screws 49 which extend downwardly through the base portions 47 of the channel-shaped part 46.

The upper ends of the flanges of the part 46 are turned laterally outwardly to form terminal flanges 50. The flanges 50 form a seat for a strip 51 of heat resistant moldable material which extends lengthwise of the part 46 and has longitudinally spaced depending projections 52 positioned to extend through openings formed in the flanges 50, as shown in Figure 6 of the drawings. The opposite ends of the strip 51 are offset in a downward direction to provide flanges 53 (Figure 5) which extend beneath the flanges 18 at opposite sides of the shell 11. Suitable electrical resistance wires 54 are located within the channel of the part 46 in order to prevent frosting along the adjacent ends of the doors 14, and the outer ends of the wires extend through an insulator 55 located in the rear wall 16 of the shell 11 between the flanges 18 and 19.

The opposite longitudinal edges of the strip 51 project laterally outwardly beyond the flanges 50 to provide attaching portions 56 for breaker strips 57 and 58. The breaker strips are molded or otherwise formed of plastic heat resistant material and the adjacent ends of the strips are formed with laterally opening grooves 59 for respectively receiving the portions 56 of the strip 51. As shown in Figure 4 of the drawings the breaker strips 57, 58 are curved downwardly from opposite side edges of the strip 51 and the lower edges of the breaker strips are offset laterally outwardly to form shoulders 60. The shoulder 60 on the strip 57 seats on the top edge of the adjacent side flange on the part 34 of the mullion, and the shoulder 60 on the strip 58 seats on the top edges of the walls 22, 25 and the flange 35 on the part 34. Thermal insulation 61 is provided in the spaces between the breaker strips and the part 39, as shown in Figure 4 of the drawings.

The space between the marginal edges of the flanges 18 on the shell and the top edges of the adjacent walls of the liner 20 is bridged by a breaker strip 62, and the corresponding space between the flanges 18 and the top edges of the shell 23 is bridged by a breaker strip 63. In the present instance, the breaker strips 62 and 63 are respectively formed integral with the strips 57 and 58 associated with the mullion 33.

The doors 14 may be of any suitable construction and are not shown in detail herein. Each door is hingedly connected at its rear edge to the rear wall of the shell 11 by hinges (not shown) and a sealing gasket 64 is secured to the marginal edge portion of each door, as shown in Figures 3 and 4. The portion of the sealing gaskets 64 extending along the adjacent ends of the door seat against the portions of the strip 51 directly above the flanges 50 on the part 46 of the mullion 33 and the remaining portions of the gaskets 64 seat on the flanges 18 of double thickness. Thus, exceptionally rigid supports are provided for the doors 14 when the latter are in their closed positions.

What I claim as my invention is:

1. A refrigerator cabinet comprising storage compartments arranged in side by side relationship and having access openings at the top of the cabinet, said storage compartments also having adjacent inner walls secured together in surface to surface contact, a mullion positioned in one of the compartments at the top of the cabinet and extending along the inner wall of said one compartment between opposite sides of the latter compartment, said mullion having a first part extending lengthwise of the mullion from one side wall of the said one compartment to the other, a second part extending longitudinally of the first part and cooperating with the first part to provide an enclosed space therebetween, heat insulating material housed in said space, a third part extending lengthwise of the two parts aforesaid and spaced above the latter, breaker strips extending laterally from opposite side edges of the third part to the adjacent sides of one of the aforesaid parts, and means for securing said mullion to the cabinet.

2. The refrigerator cabinet defined in claim 1 having heat insulating material between the breaker strips and adjacent part of the mullion.

3. The refrigerator cabinet defined in claim 1 wherein the laterally inner edge of one breaker strip overlies the top edges of the adjacent inner walls of the storage compartments.

4. A refrigerator cabinet structure comprising first and second storage compartments arranged in side by side relationship and having access openings at the top of the cabinet, the adjacent inner walls of the compartments being secured together in surface to surface contact, a mullion having a first part positioned within the first compartment and extending from one side wall of the first compartment to the opposite side wall of the first compartment along the said inner wall of the latter compartment, a second part extending longitudinally of the first part above the latter midway between opposite side edges of the first part and secured to said first part, and breaker strips extending laterally from opposite sides of the second part to the adjacent sides of the first part and one of the strips having a portion overlying the top edges of the adjacent inner walls of the compartments.

5. The refrigerator cabinet structure defined in claim 4 wherein the second part comprises an upwardly opening channel-shaped strip, a plate extending along the top of the strip closing the channel and having the opposite side edges projecting laterally outwardly from the strip, and wherein said breaker strips have portions on adjacent edges thereof mounted on the projecting edges of the plate.

6. The refrigerator cabinet structure defined in claim 5 having heating means housed in the channel of said strip.

7. A refrigerator cabinet structure comprising first and second storage compartments arranged in side by side relationship and having access openings at the top of the cabinet, the adjacent inner walls of the compartments being secured together in surface to surface contact, a mullion having a first part positioned within the first compartment and extending from one side wall of the first compartment to the opposite side wall of the first compartment along the said inner wall of the latter compartment, a second part extending longitudinally of the first part above the latter and cooperating with the first part to provide an enclosed space therebetween, heat insulating material housed in said space, a third part comprising an upwardly opening channel-shaped strip extending longitudinally of the second part above the latter midway between opposite sides of the second part, a plate extending along the top of the strip closing the channel and having the opposite side edges projecting laterally outwardly from the strip, a breaker strip extending from one side edge of the plate to the corresponding side of the

first part and overlying the top edges of the adjacent inner walls of the cabinet, and a second breaker strip extending from the opposite side edge of the plate to the adjacent side of the first part.

8. A refrigerator cabinet structure comprising first and second storage compartments arranged in side by side relationship and having access openings at the top of the cabinet, said compartments also having adjacent inner walls secured together in surface to surface contact, a mullion having a first upwardly opening channel-shaped part extending between opposite side walls of the first compartment and having the flange at one side abutting the said inner wall of the first compartment, upstanding flanges at the ends of the first part secured to adjacent side walls of the first compartment, a second part extending lengthwise of the first part above the base of the latter and cooperating with said first part to form an enclosed space, and heat insulation housed within said space.

9. The refrigerator cabinet structure defined in claim 8 comprising an attaching flange projecting laterally inwardly from the side and end flanges on the first part, flanges depending from the marginal edges of the second part and seated on said attaching flange, and means for securing the flanges depending from the second part to the attaching flange.

10. The refrigerator cabinet structure defined in claim 9 wherein the mullion comprising a third part extending longitudinally of the second part above the latter and having the opposite side edges spaced laterally inwardly from the side flanges on the channel-shaped first part, and break strips respectively extending from opposite sides of the third part to the side flanges on the channel-shaped first part.

11. The refrigerator cabinet structure defined in claim 10 having heat insulation located between the breaker strips and the second part.

12. A refrigerator cabinet structure comprising a shell open at the top, first and second storage compartments

arranged in side by side relationship and having access openings at the top registering with the open top of the shell, said storage compartments having the adjacent inner walls secured together in face to face contact, frame structure extending around the storage compartments at the top of the shell and secured to the latter, a mullion having a first part positioned within the first compartment and extending from one side wall of the first compartment to the opposite side wall of said compartment along the inner wall aforesaid of the latter compartment, a second part extending longitudinally of the first part above the latter part midway between opposite side edges of said first part and having the opposite ends overlying and secured to the frame structure aforesaid, and breaker strips extending laterally from opposite side edges of the second part to the adjacent side edges of the first part and one of said strips having a portion overlying the top edges of the adjacent inner walls aforesaid of the compartment.

13. The structure defined in claim 12 wherein the mullion has a third part located between the first and second parts in supporting relationship to the second part and secured to the first part, said third part cooperating with the first part to provide said mullion with an enclosed space extending lengthwise of the mullion between opposite side walls of the first compartment, insulating material housed within the enclosed space, and means for securing the third part to said first part.

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