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[54] **CLOSURE FOR REFRIGERATED HOUSING**

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[52] **U.S. Cl.** **312/214,** 312/116, 312/138, 220/9

[51] **Int. Cl.** **F25d 17/00,** F25d 23/06

[58] **Field of Search** ..... 312/116, 214, 138, 138 A; 62/440; 220/9, 24 H, 41, 9 F; 52/246, 248, 252, 253, 254, DIG. 15

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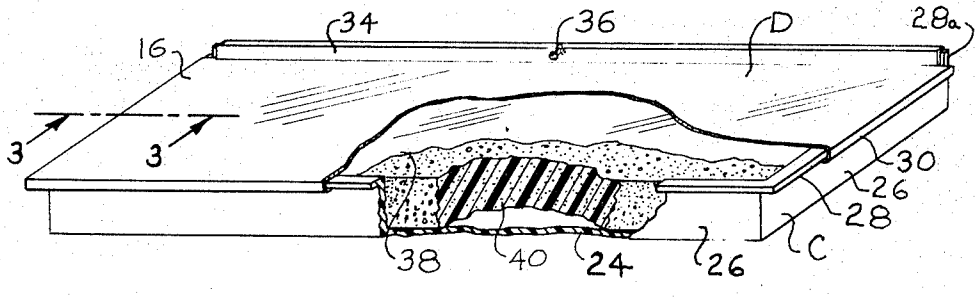
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[57] **ABSTRACT**

A closure for a refrigerated housing and the like, having a rectangular opening in an upper wall thereof. A planar door having opposed flanges extending from opposite sides rides on glide strips carried adjacent the rectangular opening. The planar door includes a lower member, and an upper member with insulation carried therebetween. The upper member is attached to the lower member so that the upper member can expand to a different degree from said lower member without said door buckling. A thin plastic sheet is carried between the upper member and the insulation so as to permit the upper member to substantially float when expanding relative to the lower member.

1 Claim, 3 Drawing Figures



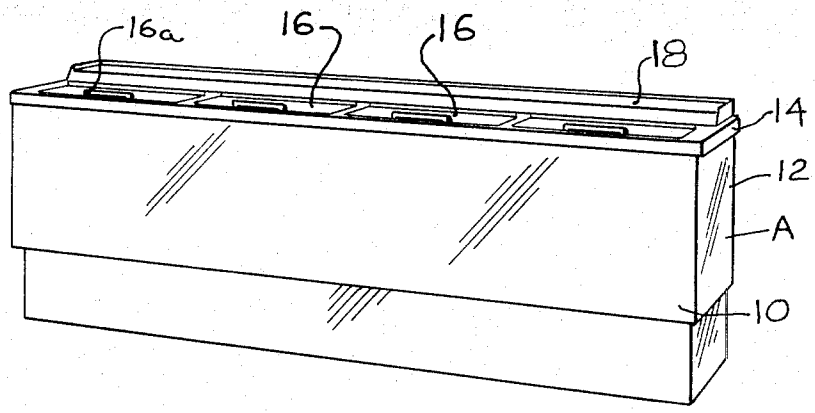


Fig. 1.

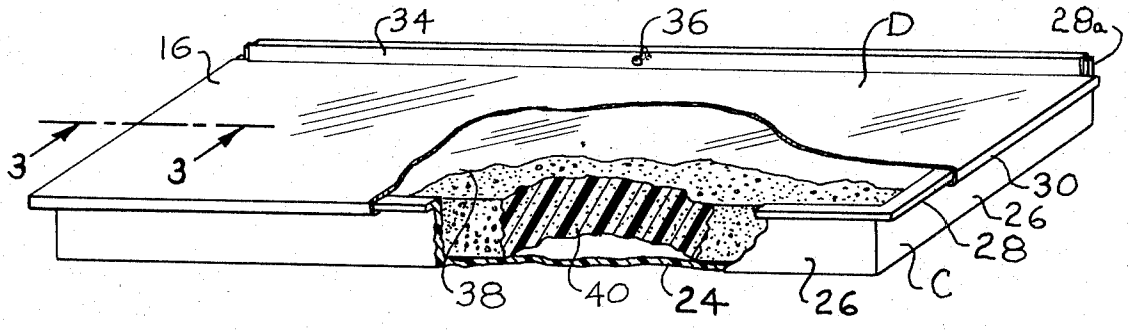


Fig. 2.

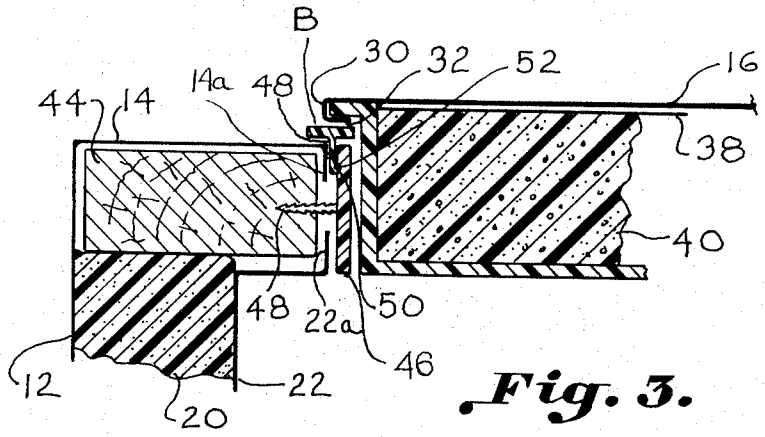


Fig. 3.

CLOSURE FOR REFRIGERATED HOUSING

This invention relates to a closure, and more particularly to a planar door for use in a refrigerated housing and the like.

In recent years the demand for refrigerated foods has increased rapidly requiring many more refrigerated housings in stores and the like. In the past such refrigerated housing consummed large areas due to the bulky doors and walls of the unit. One problem in utilizing thin lightweight doors is that due to thermal expansion the doors would tend to buckle, allowing the cool air enclosed in the housing to escape. In order to avoid these problems heavy reinforced doors have been utilized. However, such made it difficult to open the door, and in some instances the doors had to be mounted on rollers. When the doors were horizontal doors carried in an opening on top of the cooler such sometimes were supported in channels so that they could be shifted rearwardly to provide access to the refrigerated housing.

If trash and grit accumulated in these channels, such interferred with the operation of the door in addition to producing an unsanitary condition.

Accordingly, it is an important object of the present invention to provide a lightweight closure for a refrigerated housing that can be constructed of molded plastic and metal with a minimum of reinforcement.

Another important object of the present invention is to provide a lightweight closure for a refrigerated housing that can be supported on glide strips for easily shifting to provide access to the refrigerated housing.

Still another important object of the present invention is to provide a door for refrigerated housings and the like, which includes an upper member and a lower member with insulation interposed therebetween attached together so to permit said members to expand relative to each other without buckling.

Still another important object of the present invention is to provide a door for refrigerated units and the like which includes a lower member and an upper member with insulation carried in the lower member isolated from the upper member by a smooth planar member so as to permit the upper member to expand relative to the lower member without binding against the insulation carried therein.

Other objects and advantages of this invention will become more apparent from a reading of the following detailed description and appended claims, taken in conjunction with the accompanying drawing wherein:

FIG. 1 is a perspective view illustrating a refrigerated housing having doors mounted thereon constructed in accordance with the present invention,

FIG. 2 is an enlarged perspective view, with parts broken away, illustrating a door constructed in accordance with the present invention, and

FIG. 3 is a cross-sectional view taken along line 3—3 illustrating a door constructed in accordance with the present invention supported on a glide strip carried on an upper wall of the housing.

Referring in more detail to the drawing, there is illustrated a refrigerated housing A having a rectangular opening in the upper wall thereof for providing access thereto. Flat glide strips B are carried on opposed surfaces of the housing A on the opposite side of the rectangular opening. A horizontal planar door is provided for spanning said rectangular opening. The planar door

includes a lower member C having a bottom wall and vertical walls extending upwardly therefrom, and a planar upper member D extending over and spanning the lower member. Insulation is carried in the lower member below said planar upper member and means is provided for attaching the upper member to the lower member so that the upper member D can expand relative to the lower member C without the door buckling.

The refrigerated housing is substantially rectangular in shape and has elongated vertical front and rear walls **10** which are joined by end walls **12.** The lower portion of the walls **10** and **12** are recessed. A top horizontal upper wall **14** spans the front and rear walls for providing a closure. Rectangular openings are provided in the upper wall **14** for accommodating doors **16.** A raised overlapping member **18** is carried above and adjacent the rear of the upper wall **14** for covering a rear portion of said rectangular opening and for allowing the door **16** to be shifted thereunder to provide access to the refrigerated housing. The door **16** is adapted to ride under flange **18.** When the door **16** is shifted forward into the position illustrated in FIG. 1 such cooperates with the overlapping member **18** to provide a closure for the rectangular opening. A flexible sealing strip (not shown) extends downwardly from a lower portion of the overlapping member **18** and engages an upper surface of the door **16** so as to seal the interior of the refrigerated housing from the outside.

The refrigerated housing is provided with a conventional refrigerating unit and has insulation **20** carried between an inner wall **22** and the outer walls **10** and **12.**

The door **16** is constructed of a lower member C and an upper member D. The lower member, in one particular embodiment, is constructed of molded polyvinyl chloride and has a planar bottom wall **24** with vertical side walls **26** extending upwardly therefrom. Integral with the upper edge of the vertical side walls **26** is an outwardly extending flange **28.** On the rear of the lower member instead of the flange **28** extending outwardly such is turned upwardly as shown at **28***a*.

The upper member D, in one preferred embodiment, is constructed of stainless steel and has a flat planar main body portion with downwardly and inwardly turned edges **30** and **32,** respectively, integral with the front and side of the main body portion of the upper member D. Positioned adjacent the rear of the main body portion of the upper member D and integral therewith is an upwardly and outwardly turned flange **34.** When assembled the downwardly and inwardly turned edges **30** and **32,** respectively, of the upper member D extend around the outwardly extending flanges **28** of the lower member C in a loosely fitting relationship. The upwardly turned flange **34** abuts against the upper flange **28***a* of the lower member C. The means for attaching the upper member D to the lower member C in the preferred embodiment includes a single rivet **36** which extends through the rear upper flanges **34** and **28***a*, respectively. Since the rivet is carried adjacent a central portion of the door, the upper member D is allowed to expand freely outwardly therefrom relative to the lower member C. Such results freely carried the upper member D substantially floating on the lower member with the exception of the fixed connection at rivet **36.**

In order to insure that the upper member D is allowed to expand relative to the lower member C a thin planar sheet **38** is carried between the upper member

D and the insulation **40** carried in the lower member C. In one particular embodiment the thin planar sheet is constructed of polyvinyl chloride. The insulation may be any suitable insulation, such as expandable polyurethane. If the insulation **40** were allowed to adherre to the upper member D, such would interfere with the floating effect created between the upper member D and the lower member C, possibly causing the door to buckle when thermal expansion takes place. A handle **16***a* is attached to the upper member C by gluing or the like, or bolts may be used as long as the floating effect between the upper member D and lower member C is not destroyed.

Referring in more detail to FIG. **3**, a vertical ridge, generally designated by the reference character **42**, is provided in the upper wall **14** and extends around the rectangular openings provided for accommodating the doors **16**. Interposed in the upper wall **14** adjacent the vertical ridge is a wooden block **44**. The vertical ridge is defined by inwardly turned edges **14***a* of the upper wall and **22***a* of an inner wall. A vertical sealing strip **46** having a barb **48** projecting inwardly therefrom is secured by the barb **48** in the wooden block **44**. The flat glide strip B has a shank portion **48** extending downwardly therefrom with a protrusion **50** adjacent the lower end thereof which mates with a recess **52** provided in the vertical sealing strip **46** for securing the glide strip B between the vertical sealing strip **46** and the vertical ridge **42**.

In one particular embodiment the glide strip B is constructed of polypropylene.

As can be seen in FIG. **3**, the planar door is supported on the glide stirps B by the metallic inwardly turned edge **32**. Since the flange portion **34** of the door is carried behind the overlapping member **18**, such permits the door to be pushed rearwardly under the overlapping member **18** to provide access into the housing. There is a minimum of wear in opening and closing the door since there is no metal to metal contact between the sliding planar door and the housing.

Between adjacent doors horizontal runners (not shown) with glide strips B carried thereon can be utilized instead of the arrangement illustrated in FIG. **3**.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

I claim:

1. A planar door for a refrigerated housing and the like comprising, a lower member having a bottom wall and vertical walls extending upwardly therefrom, a planar upper member extending over and spanning said lower member, insulation carried in said lower member below said planar upper member, outwardly extending flanges integral with the top of said vertical walls, said planar upper member having downwardly and inwardly turned edges which extend around said outwardly extending flanges in a loosely fitting relation so as to permit expansion between said upper member and said lower member, said inwardly turned edges being guiding surfaces upon which said door is supported when used in a refrigerated housing, fastening means attaching said planar upper member to said lower member adjacent a central portion thereof so as to allow said upper member and said lower member to expand freely from said fastening means with a minimum of buckling in said planar door, and a smooth surface member interposed between said insulation and said planar upper member so as to permit said planar upper member to expand relative to said lower member without engaging said insulation.

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