

[54] **REFRIGERATOR CABINET STRUCTURE**

[75] Inventor: **Harry L. Tillman**, Evansville, Ind.

[73] Assignee: **Whirlpool Corporation**, Benton Harbor, Mich.

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247, 242

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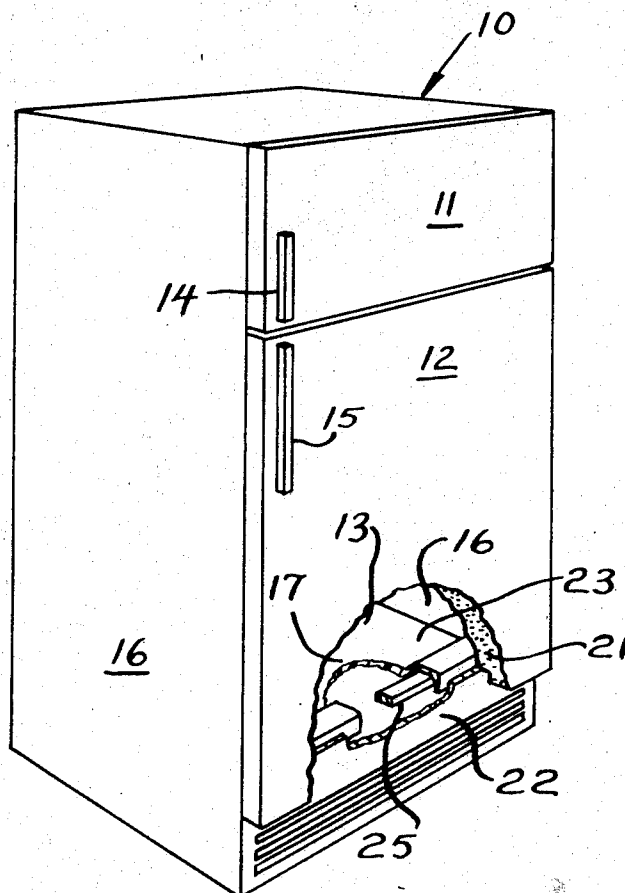
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Primary Examiner—James T. McCall
Attorney, Agent, or Firm—Hofgren, Wegner, Allen,
Stellman & McCord

[57] **ABSTRACT**

A refrigerator cabinet structure having a refrigerated space defined by wall means one of which is a bottom wall having a zone with a high incidence of impact shock as by falling heavy objects in which this wall comprises a substantially rigid insulation and a fragile liner exposed to the refrigerated space with a shock absorbing mass at the impact zone located between the liner and the insulation so as to be hidden by the liner but available for absorbing high impact shock.

6 Claims, 2 Drawing Figures



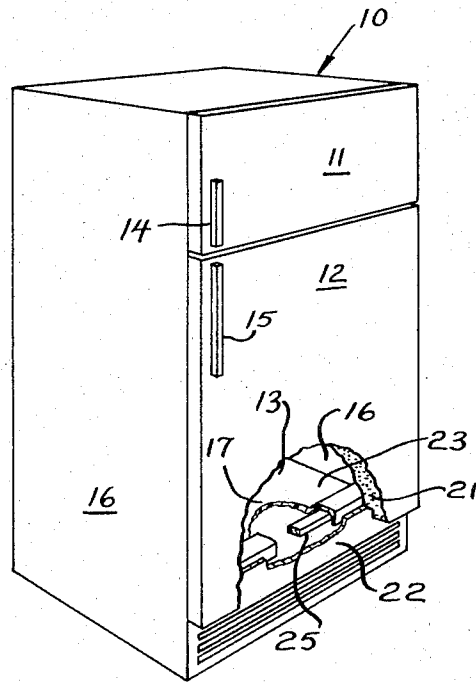


Fig. 1

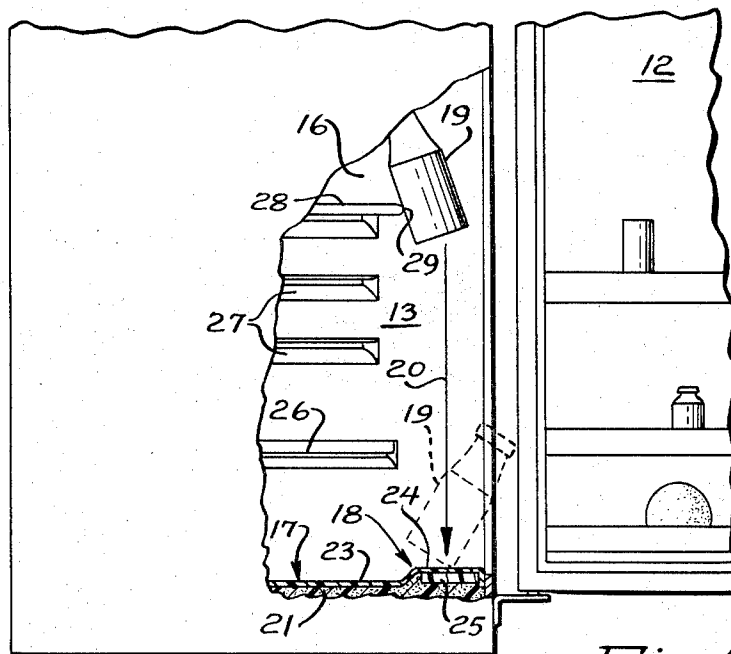


Fig. 2

REFRIGERATOR CABINET STRUCTURE

BACKGROUND OF THE INVENTION

One of the features of this invention is to provide a refrigerator cabinet structure having a refrigerated space in which articles are stored as on shelves and with the space being defined by a substantially fragile liner and a rigid insulation and with a shock absorbing mass being provided at an impact zone and located between the liner and the insulation for absorbing impact to prevent damage or breaking of the liner when subjected to shock such as that imparted by a falling heavy object.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view broken away at the bottom to expose the bottom interior, the liner, the bottom shell and the door insulation.

FIG. 2 is a fragmentary side elevational view also partially broken away in the vicinity of the bottom of the cabinet.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the embodiment shown in the accompanying drawings the refrigerator cabinet structure 10 is provided with the usual top 11 and bottom 12 doors opening into refrigerated spaces including a top freezer space (not shown) and a bottom refrigerated space 13. The doors 11 and 12 are of the customary side hinged type each provided with its own operating handle 14 and 15.

The refrigerated space illustrated at 13 is defined by wall means including side walls 16, a rear wall (not shown) and a bottom wall 17. This wall means includes a wall here shown as the bottom wall 17 that includes an impact zone 18 so identified because it is more prone to impact damage such as that illustrated by the falling glass bottle 19 whose fall is illustrated by the arrow 20. The impact zone 18 as well as the entire inner surface layer of the refrigerated space 13 comprises a substantially rigid insulation 21 which is illustrated at the bottom of FIG. 2 but which is absent from the bottom of FIG. 1 in order to illustrate the internal structure of the bottom wall 17. This insulation 21 may be of the usual rigid type and is customarily a rigid polyurethane foamed-in-place foam.

The insulation 21 including that on the doors 11 and 12 is sandwiched between an outer steel shell 22 of the customary type for strength and an inner relatively fragile liner 23 exposed to the refrigerated space 12.

This liner is of the customary type and as such may be any of several thin plastic sheets with customary plastics including acrylonitrile butadiene styrene copolymer polyolefins such as polyethylene and polypropylene, vinyl chloride polymers and the like.

Because the thin plastic liner 23 is fragile under impact particularly as it tends to be somewhat brittle when subjected to the low temperatures of the refrigerated space 13 the liner 24 at the impact zone 18 is provided with a shock absorbing mass 25 in the form of a strip of material sandwiched between the insulation 21 and the adjacent surface of the impact zone liner 24.

This shock absorbing mass may be a resilient plastic foam such as flexible polyurethane, flexible cellular polyvinyl chloride which is customarily known as vinyl

foam or any such material having strength and durability yet resilient to yield under shock.

Preferably the resilient shock absorbing pad 25 is adhered to the inner surface of the impact zone liner 23 such as by an adhesive backing. It is also preferably adhered to the foamed-in-place insulation 21 as by the foaming operation. However, the pad 25 is not strengthened or stiffened by its adhesion to the liner or the insulation but is free to yield under shock applied to the liner 24 at the impact zone without damage to the liner.

In the illustrated embodiment the refrigerator space 13 is provided with side shelf supports 26 and 27 each adapted to hold an article supporting shelf 28 on which are supported articles in the customary manner. In this embodiment the shelf illustrated at 28 has a free edge 29 in that it is positioned in space and not against a wall such as a side wall 16. With this construction the impact zone 18 of the bottom wall 17 is located substantially directly beneath the edge 29 so that falling objects as illustrated by the heavy bottle 19 will strike this portion 24 of the liner and the energy of the yielding of the liner portion 24 is absorbed by the underlying resilient pad 25 to prevent damage to the liner.

Having described my invention as related to the embodiment shown in the accompanying drawings, it is my intention that the invention be not limited by any of the details of description, unless otherwise specified, but rather be construed broadly within its spirit and scope as set out in the appended claims.

Having described the invention, the embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A refrigerator cabinet structure, comprising: a refrigerated space defined by wall means including a wall having an impact zone, said impact zone comprising a substantially rigid insulation and a substantially fragile liner exposed to said refrigerated space; and a shock absorbing mass in said impact zone located between said liner and insulation.

2. The cabinet structure of claim 1 wherein said wall having the impact zone comprises a bottom wall and said shock absorbing mass comprises a resilient pad.

3. The cabinet structure of claim 2 wherein said shock absorbing mass comprises a resilient foam pad adhered to the inner surface of the liner, whereby the liner may yield on impact relative to the pad.

4. The cabinet structure of claim 1 wherein there are provided in said space article supporting shelf means and said zone and its shock absorbing mass are positioned directly beneath an edge of said shelf means.

5. The cabinet structure of claim 4 wherein said shock absorbing mass comprises a resilient pad comprising plastic foam.

6. A refrigerator cabinet structure, comprising: a refrigerated space defined by wall means including a wall having an impact zone, said impact zone comprising a substantially rigid insulation and a substantially fragile liner exposed to said refrigerated space; article supporting shelf means in said space having a free edge, said wall being a bottom wall and said impact zone being located beneath said edge; and a shock absorbing mass in said impact zone located between said liner and insulation, said shock absorbing mass comprising a resilient pad comprising plastic foam.

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