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MAJOR APPLIANCE PACKAGING ARRANGEMENT

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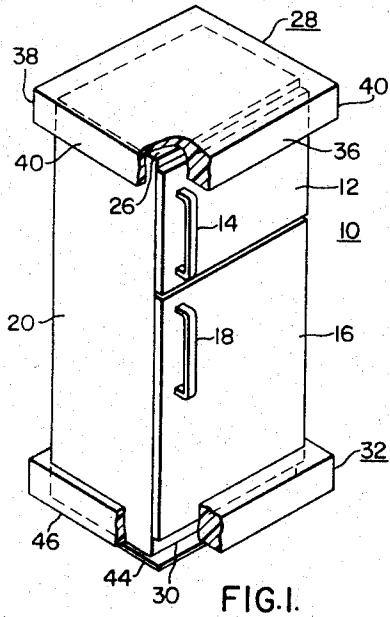


FIG. 1.

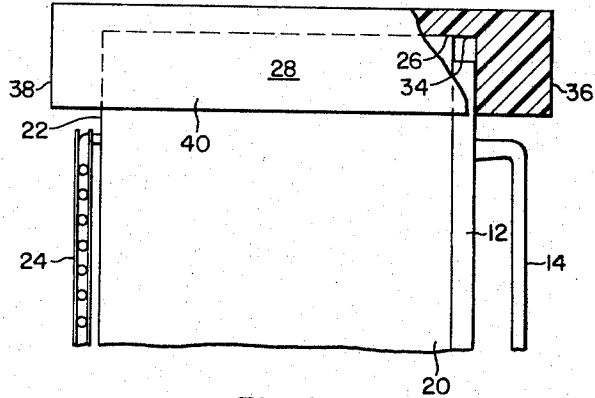


FIG. 2.

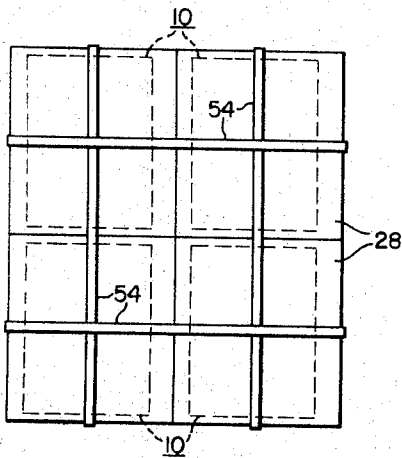


FIG. 4.

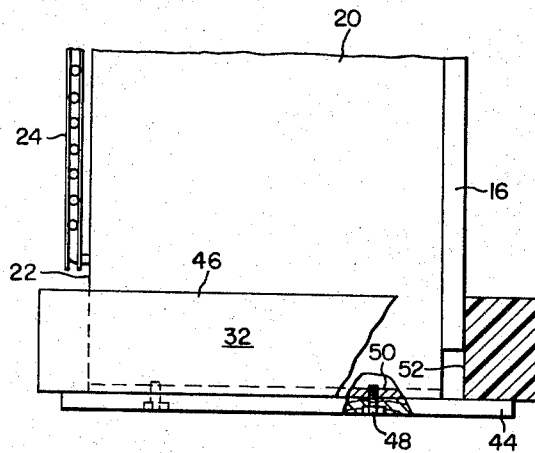


FIG. 3.

WITNESSES

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MAJOR APPLIANCE PACKAGING ARRANGEMENT

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ABSTRACT OF THE DISCLOSURE

A packaging arrangement for a refrigerator or the like in which opposite end caps are provided for the top and bottom of the refrigerator, the end caps projecting outwardly away from the finished faces of the refrigerator to serve as bumpers, the end caps serving as the sole packaging means and with the packaging arrangement being devoid of any carton or other protective means encompassing the appliance or refrigerator and packaging arrangement.

This invention relates to a packaging arrangement for major appliances.

Major appliances such as refrigerators and upright freezers of a generally right parallelepiped-shape are typically packed for storage, handling and shipment in a heavy corrugated carton provided with spacer inserts at the top and bottom, and wooden skids or cleats attached to the base of the unit. The spacer inserts are intended to center and cushion the appliance within the carton and cleats or skids protect the bottom during lifting. The carton provides protection for the finished faces of the appliance cabinet. Packaging design is somewhat of a field in itself and a substantial amount of money is spent in preparing packages which will protect the device from nearly any conceivable type of damage.

An object of my invention is to provide a lower cost and simpler packing arrangement which does not unduly increase the likelihood of damage to the appliance in storage and handling.

My packaging concept begins with the premise that an appliance such as a refrigerator is probably "over packaged." Over packaging is like a sword which cuts both ways. The excellence in the packaging not only affords good protection, but may give rise to careless handling because the appliance seems immune from damage.

A packaging arrangement according to my invention is intended to provide adequate protection against the major causes of damage while simultaneously suggesting the need for careful handling. There is believed to be a psychological aspect to my packaging arrangement in that its nature suggests the device should be handled carefully. Further, the packaging arrangement, according to the invention, may be said to achieve a nice balance between packaging arrangement cost on the one hand, and the adequacy of the protection afforded by the packaging on the other hand.

In accordance with my invention, the packaging arrangement parts comprise a top cap portion, and a base portion including skid means and a collar. Except for the skid means, the parts may be formed of rigid plastic foam. The top cap is provided with a recess shaped to conform relatively closely to the plan outline shape of the top portion of the appliance upon which the cap seats. The sides of the cap defining the recess are of sufficient thickness to project outwardly beyond the extent of any projection from a respective side of the appliance. The skid means may simply be a platform bolted to the bottom of the appliance. The collar encircles the bottom end of the appliance and may rest upon the marginal portions of the skid means. The collar sides are of sufficient thick-

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ness that they project outwardly about the same as the cap so that the outside faces of the top cap and the collar are generally aligned vertically. The cap and collar dimensions are thus such that structure projecting outwardly from the sides of the refrigerator is within the imaginary cube defined by the planes in which the outside faces of the top cap and collar lie.

The top cap and base package portion essentially constitute the entirety of the packaging arrangement. The package is devoid of any carton means encompassing the appliance or the cap and base. Accordingly, the finished surfaces of the cabinet are exposed between the top cap and the collar. This exposure is believed to contribute substantially to the suggestion arising in the mind of the handler that the device be handled with care. While the finished faces of the cabinet are potentially subject to more damage from the lack of protection, this is generally offset on the average by the better handling accorded the refrigerator or appliance as thus packaged.

The invention will be described in connection with the accompanying drawing illustrating one form of packaging arrangement embodying the invention by way of example, and wherein:

FIGURE 1 is a partly-broken isometric view of a refrigerator provided with a packaging arrangement according to the invention;

FIG. 2 is a partly-broken fragmentary side view of the top portion of the packaging arrangement;

FIG. 3 is a partly-broken fragmentary side view of the base portion of the packaging arrangement; and

FIG. 4 is a top view of a number of refrigerators provided with the packaging arrangement and arranged tightly together for storage or shipment.

Referring to the drawings, the refrigerator of the example and generally designated 10 is of the type having a bottom refrigerator section and a top freezer section. It has the conventional substantially right-parallelepiped shape with rectangular top and bottom faces in plan. The refrigerator front face is provided with a freezer door 12 having attached handle 14, refrigerator door 16 having handle 18, opposite finished side faces 20, and rear face 22 (FIG. 2) which may be provided as shown with a wire and tube condenser 24 spaced outwardly slightly from the rear face 22. The top face 26 of the refrigerator receives the cap generally designated 28. The base 30 of the refrigerator is provided with the base package portion generally designated 32.

The cap 28 (FIG. 2) of the packaging arrangement is generally rectangular in plan outline with both its length and width being greater than the corresponding dimensions of the refrigerator as viewed in plan. The cap is a one-piece member provided with a generally central recess 34 in its lower face, the shape of the recess conforming relatively closely to the plan outline shape of the top portion of the refrigerator. The sides of the top cap which encompass the central recess include the front side 36, the back side 38 and the pair of opposite sides 40. The front and back sides 36 and 38 project out further than the sides 40 to accommodate the outward projection of the door handles and condenser.

The currently preferred material for both the top cap 28 and the collar 32 is a rigid, lightweight, inexpensive plastic foam material such as the well known polyurethane foams. This material is expanded into its desired form in a mold in the well known manner. Such foams provide adequate resistance to compression when a force is applied over a substantial area of the material, which is the case when the cap and collar serve as bumpers according to the invention.

The base package portion includes platform means 44 and a collar 46. The platform 44 shown is a single member having an area slightly greater than the area in plan

of the bottom face 30 of the refrigerator. The platform 44 may be of material such as plywood and, as shown in FIG. 3, is attached to the bottom of the refrigerator by several bolts 48 which are turned up through holes in the platform into tapped holes provided in the front-to-rear extending rails 50 of the refrigerator cabinet bottom face.

The collar central opening 52 is defined by the four sides corresponding to the four sides of the cap 28. The thickness of each respective side of the collar 46 is such that the exterior face of each is generally aligned vertically with the exterior face of the respective side of cap 28. Thus, the imaginary planes in which the outer faces of the cap and collar lie define a rectangular column having faces spaced outwardly from any of the parts which project outwardly from the refrigerator proper. For example, the handles 14 and 18 and the wire and tube condenser 24 all lie within the confines of the imaginary rectangular column. As presently conceived, it is only necessary that the outer faces of the collar and cap be spaced outwardly about an inch beyond the outward projection of the parts such as handles and wire and tube condenser. The side faces of the collar and cap also are spaced out about one inch from the flat cabinet sides.

The central aperture 52 of the collar 46 may fit sufficiently loosely about the bottom of the refrigerator as to make its installation easy, and be supported in its position at the bottom of the refrigerator by the sides of the collar resting on the projecting margins of the platform. It will be appreciated that the skid means may be in the form of two individual cleats, and also that the collar may be supported from the skid means only at selected points, if desirable.

A plan view of a number of refrigerators, each provided with the packaging arrangement according to the invention, is shown in FIG. 4. There each of the packages serves as a bumper with respect to the adjacent refrigerator having the same packaging arrangement. In this connection, it is desirable that the refrigerators be of the same height, or of a sufficiently close height, and the bumpers will contact each other at both the top and the bottom when the refrigerators are placed tightly against each other.

The preferred packaging material, rigid plastic foam, is sufficiently resistant to compression that the refrigerators may be stacked at least four high without damage to the cabinets. In that connection, the cap top may be about one inch thick in its recessed area, and both the cap and the collar height may be in the order of three or four inches. These dimensions are intended as examples only.

For handling of the refrigerator, as packaged according to the foregoing description, the preferred means is a vacuum truck which can readily handle the packaged refrigerator by applying the vacuum cups directly to the finished surfaces of the refrigerator. A fork lift truck can

also be utilized for handling these refrigerators without damage if reasonable care is exercised.

It is also within the scope of the invention that modules of four packaged refrigerators may be handled together as a unit by strapping four refrigerators together by four straps, indicated by the numeral 54 in FIG. 4, running over and under each adjacent pair of packaged refrigerators.

I claim as my invention:

1. In combination with a substantially right parallelepiped-shaped major appliance such as a refrigerator, a completed packaging arrangement for use during storage, shipment and handling, comprising:
 - a top cap seated on the top face of said appliance, said top cap including a central recess of a shape conforming relatively closely to the plan outline shape of the top portion of said appliance, the sides of said cap defining said recess being of sufficient thickness to project outwardly beyond the extent of any projection on a respective side of said appliance departing from said parallelepiped-shape;
 - a base package portion at the base of said appliance including skid means secured to the bottom of said appliance, and a collar extending around the base portion of said appliance immediately above said skid means, the walls of said collar being of sufficient thickness that the outside faces thereof are generally aligned vertically with the outside faces of said top cap;
 - said completed packaging arrangement being devoid of carton means encompassing said appliance and packaging arrangement.
2. In a packaging arrangement according to claim 1: said top cap and said collar are formed of a rigid plastic foam material.
3. In a packaging arrangement according to claim 1: said skid means includes portions extending outwardly beyond the plan outline confines of said appliance to provide underlying support for said collar with said outwardly extending portions.
4. In a packaging arrangement according to claim 3: said skid means is in the form of a single integral platform member.

References Cited

UNITED STATES PATENTS

2,215,829	9/1940	Evans.	
3,170,569	2/1965	Knapp et al.	206—46
3,173,535	3/1965	Wood	206—46
3,294,225	12/1966	Kenyon	206—46

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