

May 7, 1963

H. G. ZASTROW
PACKING PADS

3,088,647

Filed April 1, 1960

2 Sheets-Sheet 1

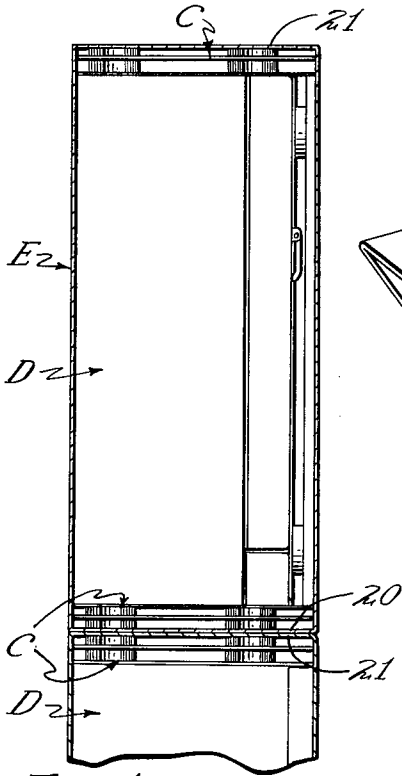


FIG. 1

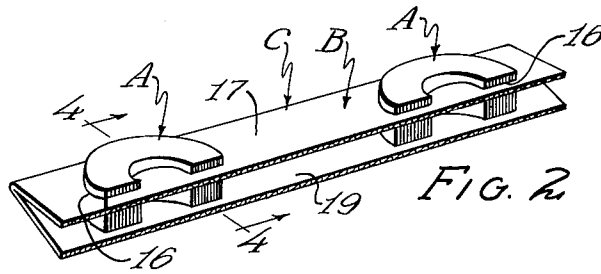


FIG. 2

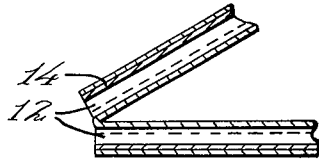


FIG. 3

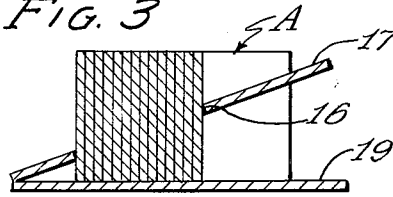


FIG. 4

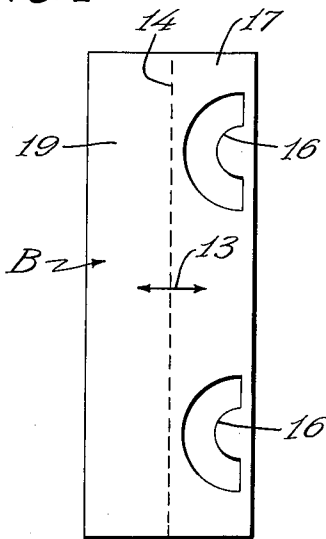


FIG. 5

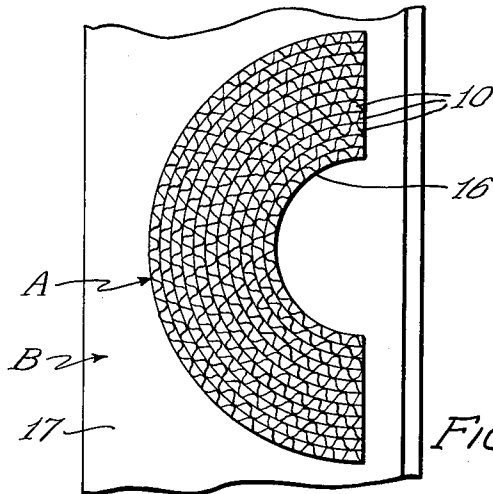


FIG. 6

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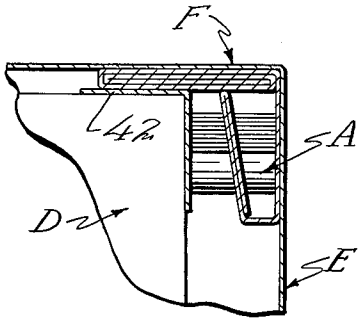


FIG. 8

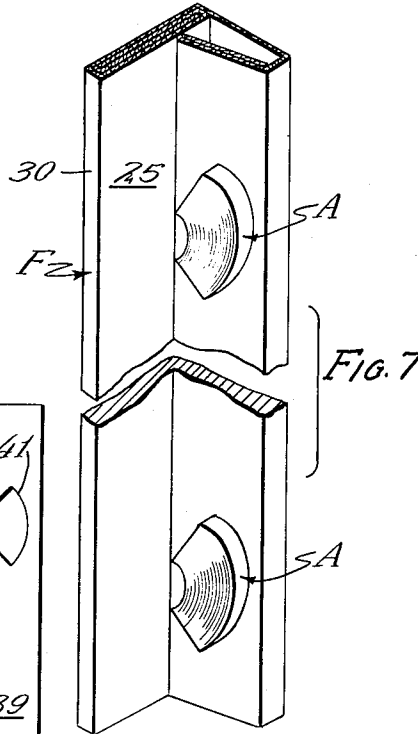


FIG. 7

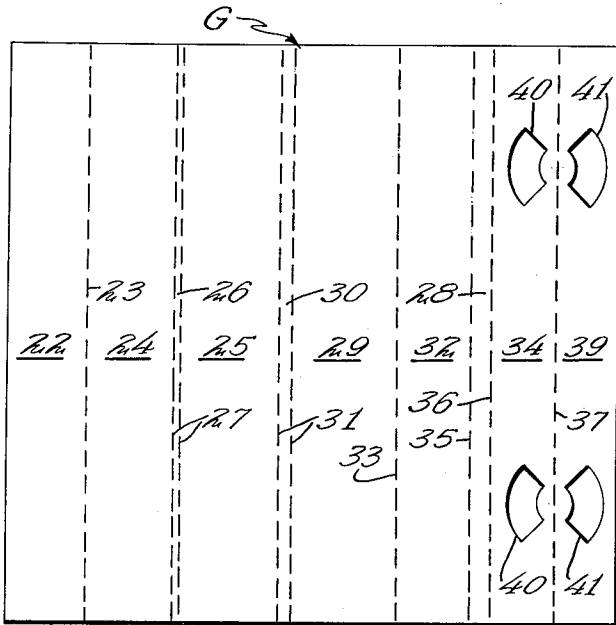


FIG. 9

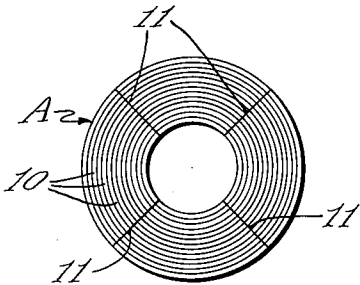


FIG. 10

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PACKING PADS

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3 Claims. (Cl. 229-14)

This invention relates to an improvement in packing pad and deals particularly with a pad which may be placed between a heavy appliance or the like and the walls of the container to protect the appliance during transportation and shipment.

In the packaging of heavy appliances such as refrigerators, washing machines, driers and the like, cushioning pads are usually provided between the appliance and the walls of the container to protect the appliance from being injured during transportation and storage. One type of pad commonly used comprises a series of strips of corrugated paperboard adhered together in face contact to form a pad of substantial thickness which is sufficiently compressible to prevent injury to the appliance. Other pads are formed by folding corrugated paperboard along a series of fold lines to build up a pad of substantial thickness. While these pads are effective for their intended purpose, they require considerable time to assemble and use a substantial amount of corrugated board. It is an object of the present invention to provide a pad capable of providing the desired cushioning effect and which is simple to produce and which is very economical to manufacture.

A feature of the present invention resides in the use of arcuate pads of corrugated paperboard and a means for holding these pads in properly spaced relation. The arcuate pads are formed by spirally winding strips of single face corrugated board and gluing the flutes of one layer to the liner side of the next adjoining layer. The spirally wound single face corrugated has the flutes of the corrugated extending longitudinally or parallel to the axis of the cylindrical body thus formed. When logs of this type are cut into sections of the proper length, they possess extremely strong compressive strength. Such cylindrical sections may be used to comprise the compression pad. I have found, however, that the cylindrical sections may be cut radially into two or more arcuate sections which possess the necessary compressive strength to hold the appliance in proper position within the outer container.

A feature of the present invention resides in the manner in which the pads are held in properly spaced relation. In one simple form of construction, a corrugated pad is provided with a central fold, and one side of the pad is die cut to provide openings into which the substantially semi-cylindrical pads may be frictionally engaged. When inserted through these die cut openings, the ends of the pads may abut against the imperforate half of the corrugated sheet which assists in transmitting the force over a greater area.

A further feature of the present invention resides in the fact that corner posts may be provided for the corners of the container to protect the appliance and also to add vertical compression strength to the container. When the appliance is provided with handles, knobs or other elements projecting outwardly from the surface thereof, in many cases the wall of the container must be substantially spaced from the surface of the appliance itself. In such an event, the cushioning pad must be of very substantial thickness in order to fill the space between the appliance and the container and the cost of such a pad is quite considerable. We have found that by folding a sheet of corrugated paperboard to provide a series of connected layers, a pad may be formed which

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is of sufficient thickness to fill the space between one wall of the container and the parallel wall of the appliance. Flanges are connected to the pad thus formed and are folded into generally parallel relation and the innermost of the flanges is provided with apertures through which the arcuate pads may be frictionally engaged. These pads may be supported in spaced relation and in sufficient number to provide the necessary compressive strength. A pad of this type is accordingly substantially less expensive than a pad built up of many thicknesses of corrugated board adhered together.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims:

FIGURE 1 is a diagrammatic vertical section through a pair of superimposed containers showing an appliance held in spaced relation to certain of the walls of the container by cushioning pads.

FIGURE 2 is a perspective view of a typical compression pad of the type described.

FIGURE 3 is a sectional view through a portion of the spacing pad showing the hinge joint connecting the two panel portions.

FIGURE 4 is a sectional view through the pad, the position of the section being indicated by the line 4-4 of FIGURE 2.

FIGURE 5 is a diagrammatic view of the pad for holding the cushioning members in properly spaced relation.

FIGURE 6 is an enlarged plan showing the spacing folder and one of the cushioning pads in enlarged form.

FIGURE 7 is a perspective view of a corner post showing the general construction thereof.

FIGURE 8 is a sectional view through the corner post in position in an outer container.

FIGURE 9 is a diagrammatic view of the blank from which the corner post is formed.

FIGURE 10 is a plan view of one of the cylindrical cushioning pads showing the manner in which it is radially cut into arcuate segments.

The cushioning pads A illustrated in FIGURE 10 of the drawings is formed by winding single face corrugated board in spiral form upon a suitable mandrel. As the single face corrugated board is wound, adhesive is applied to the flutes of the corrugated so as to adhere the layers such as 10, one to the other. In usual practice, the corrugated sheets which are wound are several feet in length and the individual cylindrical pads are formed by cutting the cylindrical logs along planes normal to the axis thereof on a band saw or similar apparatus. In view of the fact that the cylindrical pads thus formed are usually 8 or 9 inches in diameter, and as arcuate segments of such pads usually possess sufficient compressive strength to provide the necessary cushioning for the applicant's purpose, the cylindrical pads A are cut radially as indicated at 11 to provide arcuate segments of the desired length.

The spacing folder B is formed of the simple blank illustrated in FIGURE 5 of the drawings, and comprises an elongated sheet of corrugated paperboard in which the flutes of the corrugations 12 extend transversely of the blank as indicated by the arrows 13 in FIGURE 5. The blank is creased or preferably cut scored along the center line 14 so that the panel may be readily folded. Arcuate apertures 16 are die cut into the panel 17 on one side of the fold line 14 while the opposite panel 19 may remain imperforate.

In the assembly which is indicated in its entirety by the letter C, the two panels 17 and 19 are folded along the fold line 14 into an acute angle as indicated in FIGURES 2 and 4 of the drawings, and the previously cut pad segments A are inserted through the apertures 16.

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One end of each pad A rests flush against the panel 19, while the other end thereof projects through the panel 17. The pad is preferably used to fill the space between the appliance such as B illustrated in FIGURE 1 and walls of the container E. For example, a cushioning pad C is illustrated interposed between the appliance D and the bottom 20 of the container E and pads such as C are also shown interposed between the top of the appliance B and the top 21 of the container E.

Another form of cushioning pad is indicated at F in FIGURES 7 and 8 of the drawings. The cushioning pad F includes the blank shown in FIGURE 9 and which is indicated in general by the letter G. The blank G includes a first panel which is connected along the double fold line 23 to a second panel 24. The panel 24 is connected to an adjoining panel 25 along a connecting area 26 defined by a pair of spaced parallel fold lines 27. The panel 25 is connected to the next adjoining panel 29 by an area 30 somewhat wider than the area 26 and defined by spaced fold lines 31.

The panel 29 is foldably connected to a panel 32 along a fold line 33. The panel 32 is connected along a connecting portion 33 to a panel 34. Spaced fold lines 35 and 36 secure the connecting panel 33 between the panels 32 and 34. A fold line 37 connects the panel 34 to an end panel 39. The various fold lines which have been described are parallel.

Arcuate apertures 40 are provided in spaced relation through the panel 34 and similar apertures 41 are provided in the panel 39. The apertures 40 and 41 are positioned in opposed relation on opposite sides of the fold line 37 so that these apertures will register when the panels 34 and 39 are folded into face contact.

Arcuate cushioning pads A of the type previously described are used in conjunction with the foldable pad portion G. The pad G when folded, forms a corner post for the corners of a container as illustrated in FIGURES 7 and 8 of the drawings. Usually, an angular pad 42 of corrugated paperboard or the like is folded around the corner of the appliance D as indicated in FIGURE 8. This pad 42 is oftentimes coated with wax so as to prevent any abrasion to the surface of the appliance.

The pad G is folded as indicated in FIGURE 7, the panel 22 being folded upon the panel 24, the panels 22 and 24 being folded upon the panel 25, and the folded panels 22, 24 and 25 being folded against the surface of the panel 29. This provides a pad portion comprising four thicknesses of double faced corrugated paperboard thus providing an effective cushion.

The panel 32 is folded into right angular relation to the

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panel 29, and the panels 34 and 39 are folded into face contact and then folded so that the edges of these panels along the fold line 37 abut against the surface of the panel 25. The arcuate segments A are then inserted through the aligned apertures 40 and 41.

By selecting the proper length of cushioning pads A, a pad of substantial thickness is formed which will form an effective cushion between the appliance D and the wall of the container E. At the same time, the portion of the panel G which is folded to form a body of four thicknesses, is folded between an angularly related surface of the appliance and the adjacent angularly related wall of the container.

In accordance with the patent statutes, I have described the principles of construction and operation of my improvement in packing pad, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A cushioning pad including a pair of panels of paperboard foldably connected together, a pad body having flat parallel ends, an aperture in one of said panels of a size to snugly accommodate said pad body when the ends of the pad body are on planes parallel to said one panel, said pad body having one end engaging in face contact with the other said panel and said one panel being at an acute angle to said other panel, whereby said pad body is wedged in said aperture.

2. The structure of claim 1 and in which said pad body comprises a plurality of arcuate layers of single face corrugated paperboard adhered together with the flutes of the corrugated paperboard extending parallel to the axis of arcuation.

3. The structure of claim 1 and including a plurality of panels foldably connected to said other panel and foldable into face contact to provide a portion several thicknesses of paperboard in thickness.

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