

Nov. 12, 1968

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3,410,474

PROTECTIVE CORNER PAD FOR PACKING

Filed May 10, 1967

2 Sheets-Sheet 1

FIG. 1

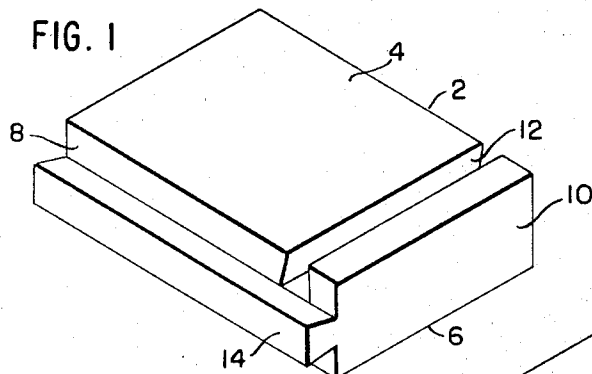


FIG. 2

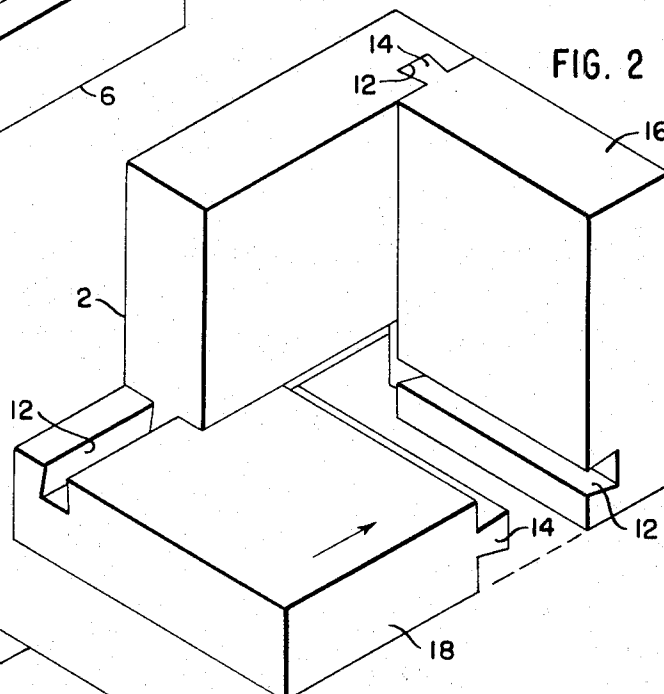
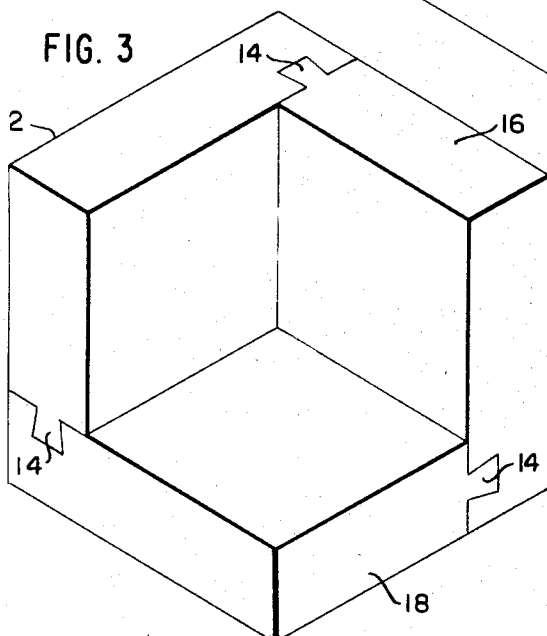


FIG. 3



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FIG. 4

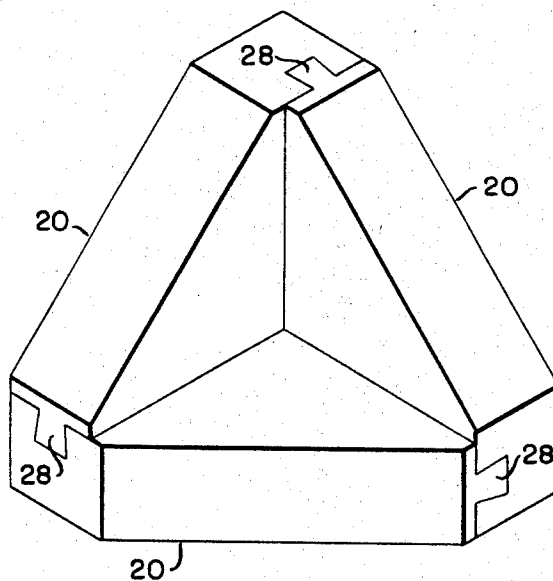
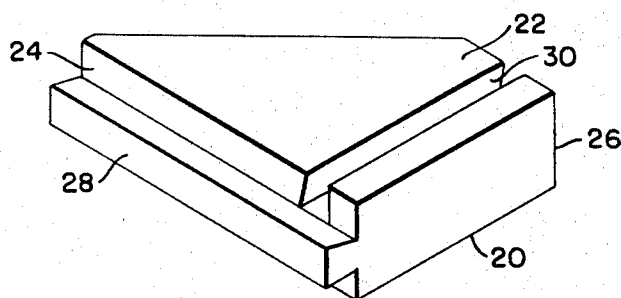


FIG. 5

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**PROTECTIVE CORNER PAD FOR PACKING**  
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## ABSTRACT OF THE DISCLOSURE

This invention relates to the packaging art and comprises a protective corner assembled from three identical modules to form a hollow corner shaped packaging article, the three modules being held together by dove-tailed tongue and groove joints, each module containing an extending dove-tailed tongue and a recessed dove-tailed groove, the tongue of the first module fitting into the groove of the second module, the tongue of the second module fitting into the groove of the third module, and the tongue of the third module fitting into the groove of the first module. The packaging material is made of a resiliently-compressible, shock-absorbing material such as, for example, expanded polyethylene. As a result of the compressibility of the material, the tongue and groove structure is enabled to be put together in locking manner so that the assembly is self-sustaining.

As indicated above, the field of the invention is the packaging art, and more specifically is in relation to the protective corner pads utilized in packaging.

In the prior art, there have been several forms of protective pads in corner form for packing, but in all cases where a tongue and groove or interfitting structure is used, some means other than the tongue and grooves themselves or the modules per se must be supplied in order to hold the modules together as a self-sustaining entity. For example, in one tongue and groove article, a fabric backing is used on the modules, the backing holding the modules together. In another case, using an interfitting structure, no provision is made to make the corner self-sustaining in view of the fact that it is desired to have the corner adjustable. In still other forms, the complete corner piece is molded as a unitary object, but the drawback with this is that the molds are expensive, and it becomes expensive to ship and store such corner pieces.

Where the corner packings are not self-sustaining, then there is a danger that in use in a shipment, the individual modules making up the corner may become separated due to vibration and handling of the packaged article. When this happens, the module may become displaced sufficiently to permit the corners of the object being shipped to be damaged by a blow striking the outside corner of the packing case.

It is the general purpose of this invention to solve the above problems by providing a corner piece made of three identical modules, the modules being interfitted with dove-tailed tongue-and-groove joints so that the corner piece will remain as a self-locked unit during shipment, and yet the individual modules may be conveniently shipped at low cost because they may be stacked in flat relationship, the user thereof being able to make up a corner piece rapidly and simply.

Therefore, among the several objects and advantages of the invention may be noted the following: the provision of a corner piece for packing which when assembled acts as a unitary structure without the use of extraneous materials; the provision of a corner piece of the last-named class which is made of three identical modules, the modules being held together by self-locking tongue-and-groove construction; the provision of a corner piece of the

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last-named type which is made of a resiliently compressible shock-absorbing material; the provision of modules for assembling corner pieces for packing, the modules being of generally flat shape so that they may be shipped with minimum cost and yet adapted to be assembled into a self-sustaining corner piece; and the provision of a corner piece for packing which may be easily assembled from relatively inexpensive identical modules to form a self-sustaining packaging article. Other objects and advantages will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the appended claims.

Referring to the drawings, in which are illustrated two of several possible embodiments of the invention:

FIG. 1 shows an elemental module used in the present invention;

FIG. 2 shows a corner piece of the invention partly assembled, the view being given in order to show the steps of assembly;

FIG. 3 shows a completed corner piece of this invention using the module of FIG. 1;

FIG. 4 shows an elemental module of a second embodiment; and

FIG. 5 shows an assembled second embodiment using the module of FIG. 4.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring first to FIG. 1, a module 2 constituting part of this invention and used in the construction of the corner packing piece of this invention is illustrated. The module is made of a resiliently compressible, shock-absorbing material such as, for example, expanded polyethylene, or other similar materials. It may also be made of foamed rubber where that degree of resiliency is required or desired in the final corner piece. The module comprises the pair of faces 4 and 6 forming a front and back, and a pair of flat sides 8 and 10 which extend perpendicular to each other and, in the embodiment shown, are perpendicular to the front and back sides 4 and 6. In the particular embodiment shown, the module is shown as generally rectangular in shape, but it could be made in triangular form as shown in the second embodiment (FIG. 4). A dove-tail groove 12 extends inwardly from face 4 and, for esthetic purposes, the longitudinal center of the groove lies approximately one half the thickness of the module inwardly from the side 10. A dove-tail tongue 14 extends outwardly from the side 8 as shown, and the bottom of the groove 12 preferably lies in a plane which contains the line made by the upper side (as viewed) of the tongue 12 where the latter intersects the side 8.

At this point, it is to be carefully noted that the groove 12 is a dove-tail groove, and the tongue 14 is a dove-tail tongue. These elements of the module and the other modules are sized so as to be mates. That is, the tongue 14 of one module fits nicely the groove 12 of a second module; the tongue of said second module will fit closely in the groove of a third module, with the tongue of the latter being so sized as to fit closely in the groove of the first module.

Referring now to FIG. 2, there is shown a corner piece of this invention partly assembled. Shown in the view are three identical modules 2, (as described above) and 16 and 18. Each of the modules has the dove-tail tongue and groove structure shown in FIG. 1. In FIG. 2, the tongue 14 of module 16 has already been fitted into the groove 12 of module 2. This fitting together of these respective parts may be done either by sliding the tongue 14 along

the groove 12, or, because of the compressibility of the material of the module, the tongue 14 may be shoved directly into the groove 12, the tongue 14 compressing in order to move past the narrow entrance of the groove.

Module 18 is shown in engagement with the module 2 with the tongue 14 of module 2 fitting into the groove 12 of module 18, the module 18 being shown slid partly along the tongue 14 of module 2 toward module 16. This sliding is continued until the tongue 14 of module 18 comes up against the narrow entrance of groove 12 of module 16. It will then be found that a further pressure exerted on the pieces will cause the material of tongue 14 to compress and slide past the narrow entrance of groove 12 of module 16, and then once inside the latter, the material of the tongue will expand to fill the groove. FIG. 3 shows a completed corner package of the invention with the parts fitted together as thus described.

It has been indicated above that the individual modules do not have to be rectangular in shape, but can be triangular, for example, as shown in FIG. 4. It is obvious from the description of the FIGS. 1-3 embodiment what the final corner piece using the FIG. 4 embodiment will be, and if the corner piece is constructed using the FIG. 4 module, then the final construction will be that shown in FIG. 5. The method of assembly of the FIG. 5 construction is exactly the same as the FIG. 3 construction, and would follow the principles set forth in FIG. 2. The FIG. 4 module has the faces 20 and 22 (corresponding to faces 4 and 6 of FIG. 1), and the sides 24 and 26 (corresponding to sides 8 and 10 of FIG. 1). The dove-tail tongue 28 is provided extending from the side 24, and dove-tail groove 30 is provided in face 22. In FIG. 5, three of the modules are fitted together with the respective tongues and grooves fitted interlocking in order to provide the self-sustaining corner piece.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

It is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense, and it is also intended that the appended claims shall

cover all such equivalent variations as come within the true spirit and scope of the invention.

Having described the invention, what is claimed is:

1. A protective packaging unit comprising three modules fitted together with three joints to form a corner piece, each of the modules being made of resiliently compressible, shock-absorbing material, and all three joints being dove-tail joints, the modules being locked each one to the others.

2. The article of claim 1 in which each module has a pair of faces forming a front and a back, and a pair of flat sides perpendicular to each other and joining said faces approximately at right angles thereto, one of said sides of each module being provided with a dove-tail tongue extending outwardly therefrom and extending along the side, and one of said faces of each module being provided with a dove-tail groove therein extending along the face perpendicularly to said one side, the tongue of one module fitting into the groove of an adjacent module with a snug fit.

3. The article of claim 2 in which the modules are identical.

4. The article of claim 2 in which the modules are perpendicular to each other.

5. A module for a three-sided packing corner piece comprising a flat block of resiliently-compressible, shock-absorbing material, the module having a pair of faces forming a front and a back, and a pair of flat sides perpendicular to each other and joining said faces at right angles thereto, one of said sides being provided with a dove-tail tongue extending outwardly therefrom and along the side, and one of said faces being provided with a dove-tail groove therein extending along the face perpendicular to said one side, said tongue and groove being so shaped and sized as to be mates, and said tongue and groove being so positioned in each module that each module is adapted to be combined with two others of said modules to form a corner piece with the dove-tail tongue of each module locking snugly into the dove-tail groove of an adjacent module, three of the modules thus being adapted to form a self-locking corner piece.

6. The module of claim 5 in which the bottom of said groove lies in a plane containing the line where a side face of the tongue meets said one side.

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