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3,120,322

CASE FOR BOTTLES AND THE LIKE

Filed Jan. 9, 1961

2 Sheets-Sheet 1

Fig. 1

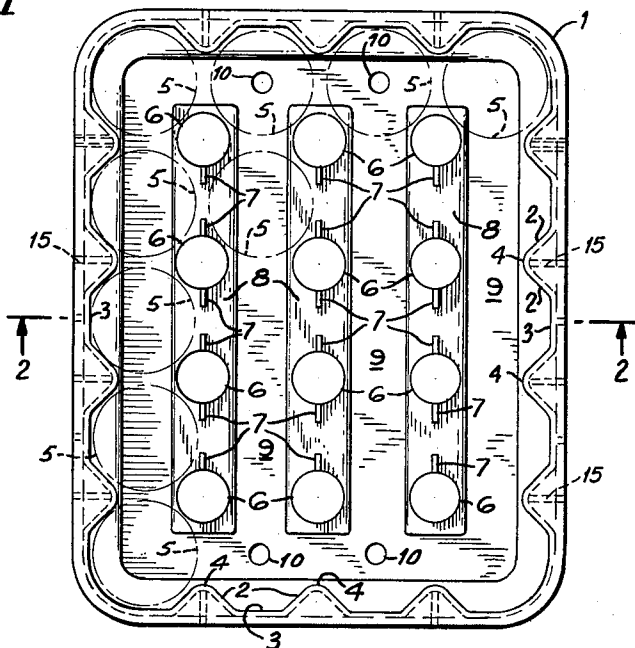
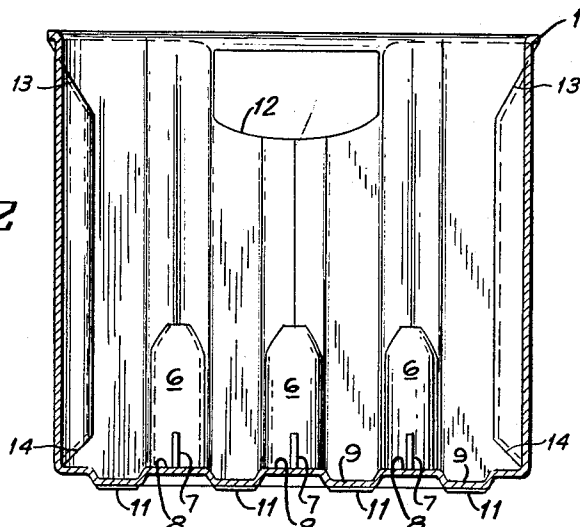


Fig. 2



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Fig. 4.

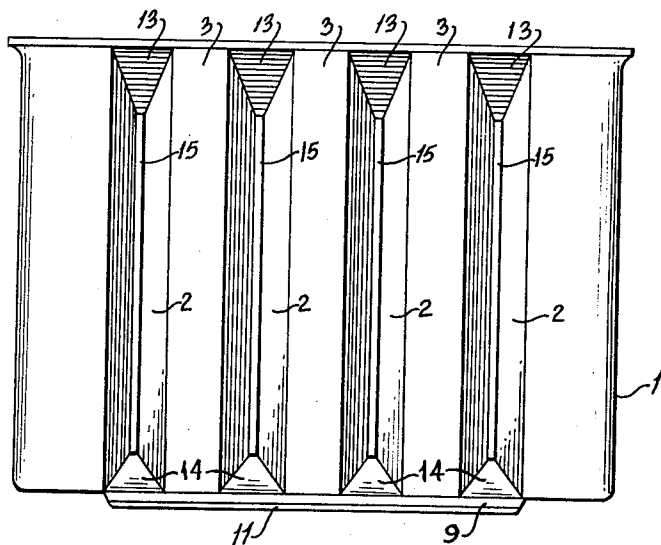
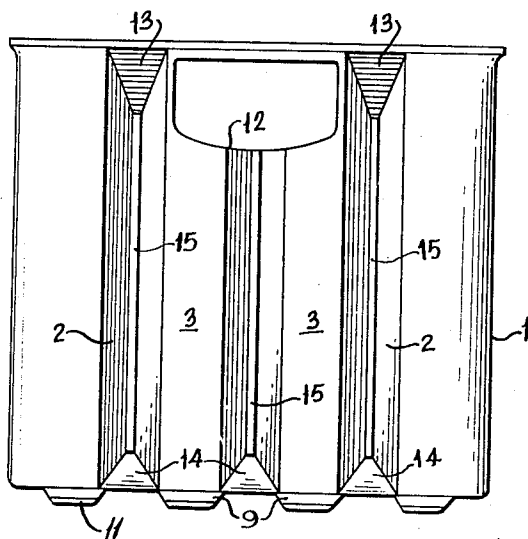


Fig. 3.



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CASE FOR BOTTLES AND THE LIKE

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Claims priority, application Germany Feb. 1, 1960
4 Claims. (Cl. 220-72)

The invention relates to a plastic case for the transportation of bottles in general, such as beer, water, milk bottles etc. For the purpose of reducing the weight and particularly for reasons of economy in view of the comparatively high cost of raw materials, the walls have been hitherto devised as thin as possible, and provided with reinforcements along the edges, and with ribs, so as to render them capable of withstanding the stress of rough handling. However, as soon as the filled cases are stacked, that is the superimposition of numerous cases in rows, each atop the other, as is the case, for instance, in automatic stacking, the conventional wall thickness of the cases is no longer adequate to withstand the pressure that is brought to bear. The cases are not adequately torsion-resistant and give way.

For the purpose of obviating these unfavorable features, the walls of the cases, slanted at an angle in cross-section, are corrugated in the specific manner described in the following. This cross-section of the wall renders the case torsion resistant and assures stacking of the filled cases without fear of deformation of the walls.

In the drawings illustrating an embodiment of the invention by way of an example,

FIG. 1 shows a plan view of the plastic case;

FIG. 2 shows a section along the line of 2-2 of FIG. 1;

FIG. 3 is a front elevation; and

FIG. 4 is a side elevation of the case according to the invention.

Referring to the drawings, the corners 1 of the case are rounded off to a radius which coincides with that of the bottles to be seated therein. The lateral walls are corrugated to a greater or lesser extent for the purpose of assuring a high moment of resistance in cross-section, the radius of the corrugation being matched appropriately to the roundness of the bottles to be inserted.

An angle of slant of the corrugations as shown in the drawing, has been found best to the purpose. More particularly, the sides 2 of the corrugation crests fan out inwardly to an angle of 45° as they issue from the base line 3 coinciding with the original side walls, so that the adjacent sides 2 run at an angle of 90° at the rounded tip 4 of the corrugation crest. The angular position of each part 3 of the base line, formed with the two sides 2, conforms with the roundness of the bottles 5 to be seated inside. Where the conventional type of bottle rack is dispensed with, the pins or pegs 6 which project upward, and the cross-section of which may be chosen at will to be cylindrical, oval, quadrangular or rectangular with rounded edges, may be devised in the shape of a Maltese Cross, or the like.

In order to distribute the vertical thrust upon both the corrugations 2 and straight portions 3 of the walls, the corrugations terminate at points spaced from the top and bottom of the case and gradually angularly merge into the upper and lower edges of the walls, as indicated at 13 and 14, respectively, in the drawings. As a consequence, the pressure upon the upper edge of one case resulting from the weights of the cases stacked thereon is distributed upon both the straight and corrugated portions of the walls, whereby to enable a maximum number of cases having a minimum wall thickness to be stacked without the danger of distortion or buckling of the walls.

The corrugation crests 2 and 4 along the walls are co-

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ordinated with the pegs, and secure in their position the bottles 5 which are set in all around the edge of the case. The base of the pegs 6 may be provided with stiffening ribs 7. The head of the pegs 6 is tapered, or designed as a dome-shaped tip, either open or sealed. The pegs 6 are hollow, open at the floor end and are organically connected with the bottom of the case, or with its raised rib 8. The recessed floor ribs 9, with perforations 10, serve as a means of draining water and of stiffening the floor. The underside of the ribs 9 is suitably grooved and rippled 11 to assure a firm emplacement of the case. The dimensions of the case are so proportioned that the bottom of any case sitting above another case is seated in the crown of the case underneath.

Wherever necessary, for the event of very heavy loads, the corrugation crests 4 can be further reinforced by means of outer ribs. On the narrow sides of the cases, recesses 12 are provided near the upper edge, as a means of gripping the case for the handling of same.

I claim:

1. A case of the class described comprising a bottom wall and substantially vertical side and end walls terminating in free upper edges forming a rectangular open top, whereby to allow of a multiplicity of cases to be stacked upon each other with the bottom edge of one case resting upon the top edge of the next lower case of the stack, said side and end walls being formed with discrete vertical triangular corrugations spaced from one another and extending inwardly and out of the planes of said walls, the upper and lower ends of said corrugations being spaced from and angularly merging into the top and bottom edges, respectively, of the case.

2. A case as claimed in claim 1, including vertical stiffening ribs extending outwardly from the apices of said corrugations and at right angles to said walls.

3. A case of the class described comprising a bottom wall and substantially vertical side and end walls terminating in free upper edges forming a rectangular open top, whereby to allow of a multiplicity of cases to be stacked upon each other with the bottom edge of one case resting upon the top edge of the next lower case of the stack, said side and end walls having strip-like vertical portions bent inwardly to form spaced discrete triangular corrugations, the intervening portions between said corrugations conforming with the original planes of said walls and said corrugations terminating at points below and merging angularly into the upper edges of said walls.

4. A case of the class described comprising a bottom wall and substantially vertical side and end walls terminating in free upper edges forming a rectangular top, whereby to allow of a multiplicity of cases to be stacked upon each other with the bottom edge of one case resting upon the top edge of the next lower case of the stack, said side and end walls having strip-like vertical portions bent inwardly to form spaced discrete triangular corrugations, the intervening portions between said corrugations conforming with the original planes of said walls and said corrugations having enclosing angles of substantially 90° and terminating at points spaced from and merging angularly into the upper and lower edges, respectively, of said walls.

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