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3,219,233

CARRIER FOR BOTTLES AND THE LIKE

Filed June 11, 1963

3 Sheets-Sheet 1

FIG. 1

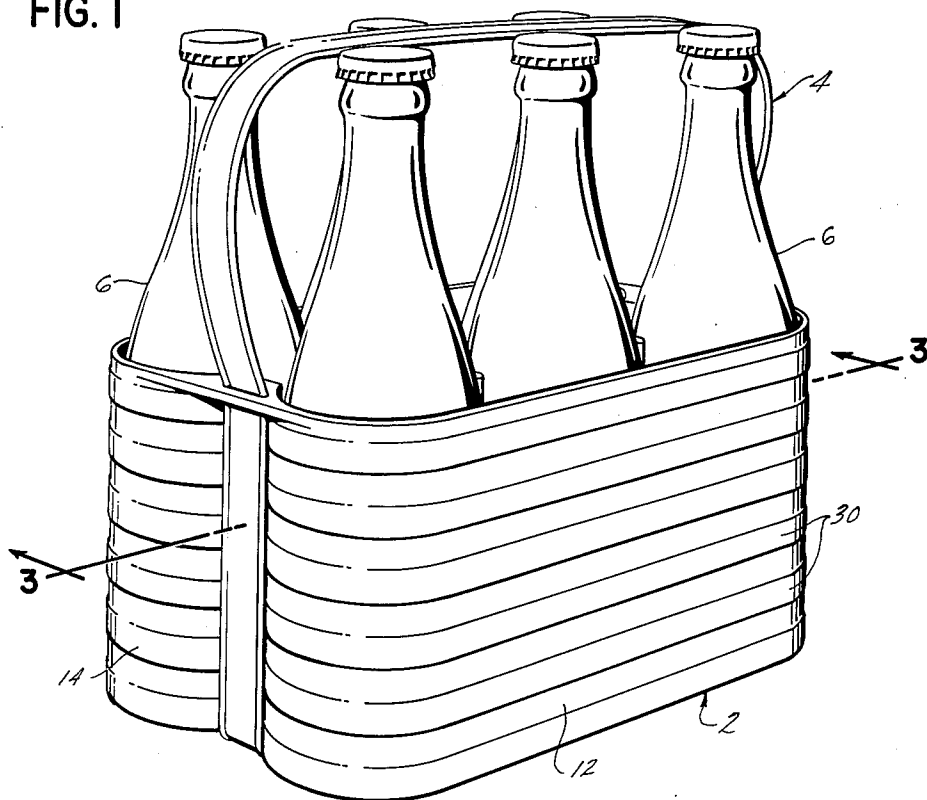
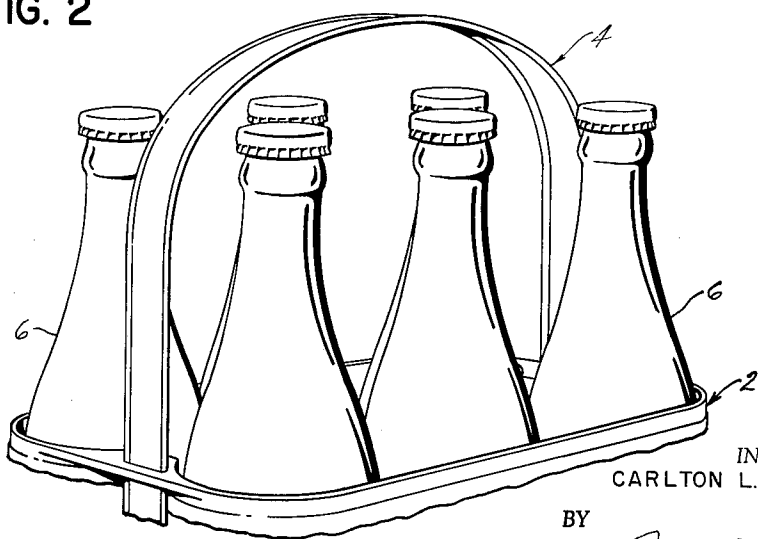


FIG. 2



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FIG. 3

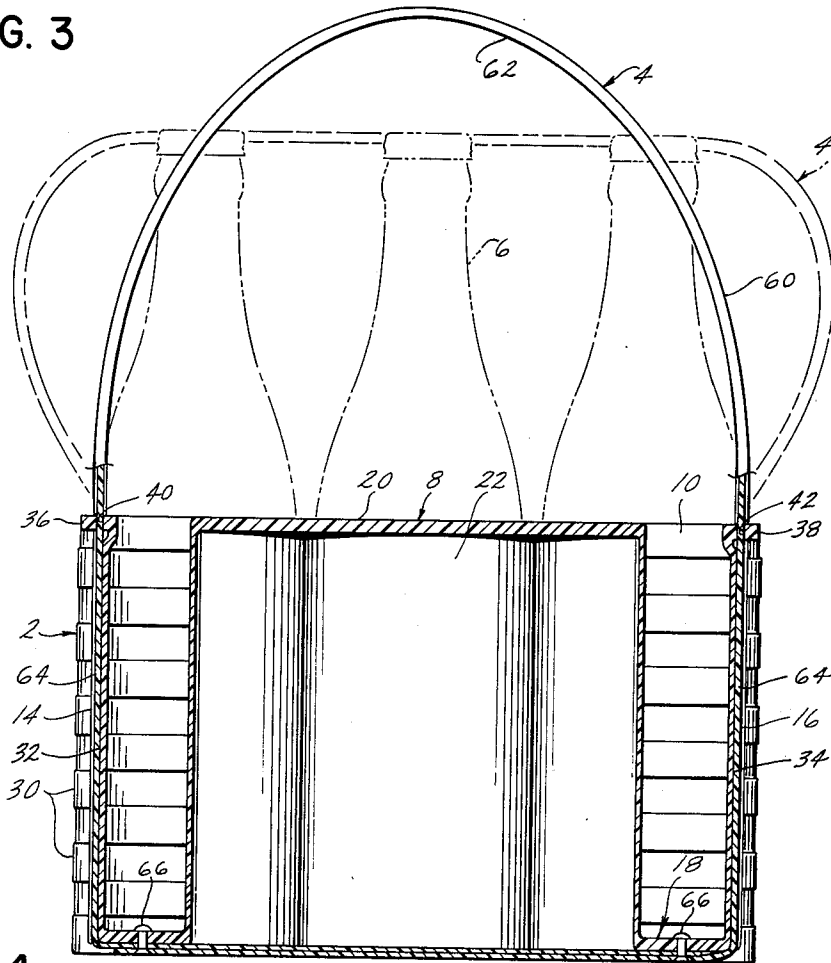
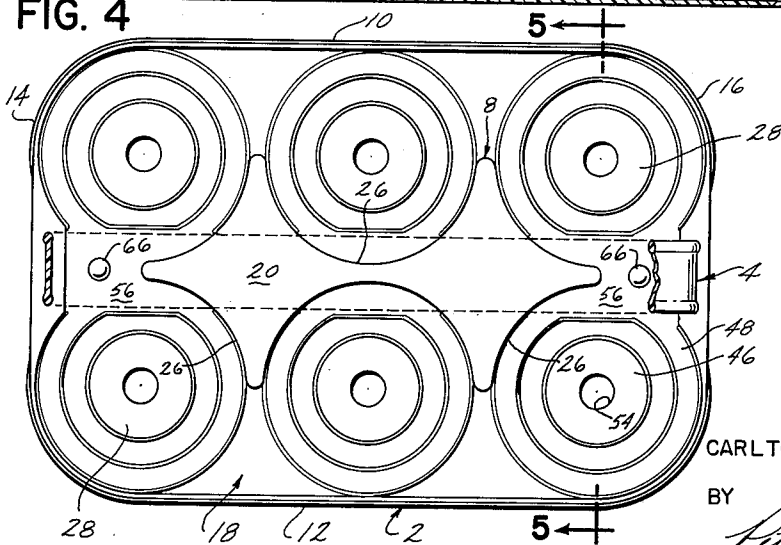


FIG. 4



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FIG. 5

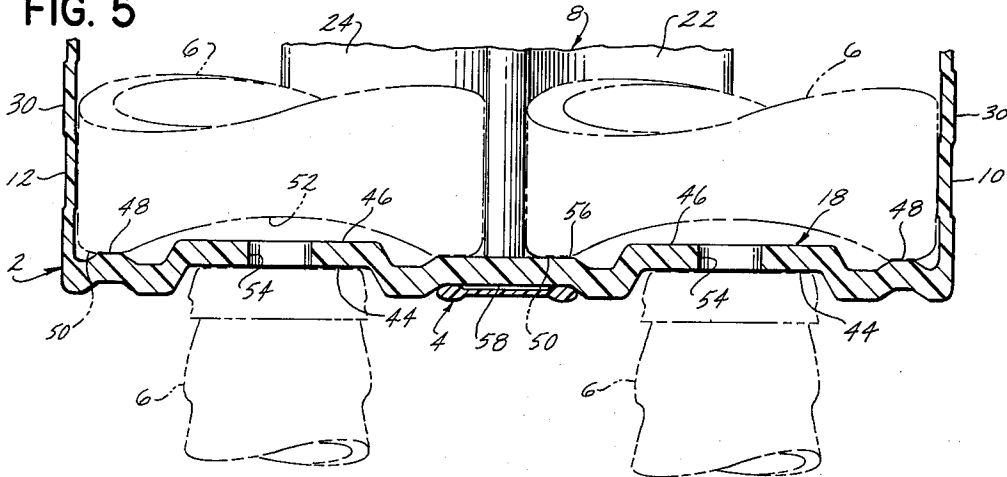
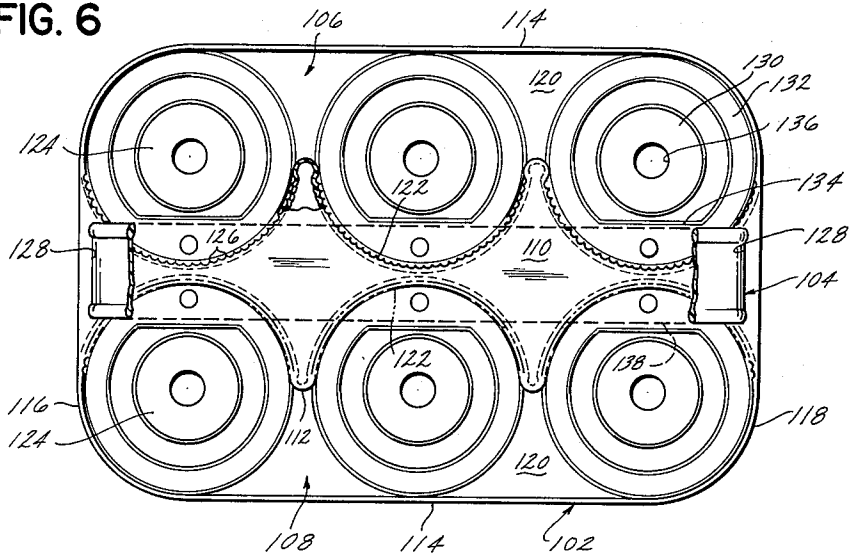


FIG. 6



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CARRIER FOR BOTTLES AND THE LIKE

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20 Claims. (Cl. 220-102)

The present invention relates to cartons, and more particularly to a novel carrier for bottles and the like.

It is an object of the present invention to provide a novel carrier of synthetic plastic material for transporting a plurality of bottles which may be conveniently stacked with other carriers and yet may be conveniently grasped and carried by handle means projecting and accessible above the tops of bottles received therein.

It is also an object to provide such a carrier which is readily and economically fabricated from synthetic plastic material and which is relatively rugged, durable and attractive.

Another object is to provide a relatively rugged synthetic plastic carrier comprised of a handle member and an integrally formed compartmented member wherein the handle member structurally cooperates with the compartmented member for efficient use of material and increased strength.

The foregoing and related objects will be apparent from the following detailed specification and drawings wherein:

FIGURE 1 is a perspective view of a carrier embodying the present invention with a plurality of bottles contained therein and with the handle member as flattened for storage or by stacking of a carrier thereon;

FIGURE 2 is a fragmentary perspective view of the upper portion of the carrier of FIGURE 1 with the handle member sprung upwardly for carrying or initial grasping;

FIGURE 3 is a sectional view along the line 3-3 of FIGURE 1 illustrating in full line the handle member in the sprung position and in phantom lines a plurality of bottles and the handle member in flattened position;

FIGURE 4 is a plan view of the carrier of FIGURE 1 with the bottles and with portions of the handle member removed for clarity of illustration;

FIGURE 5 is a fragmentary sectional view to an enlarged scale along the line 5-5 of FIGURE 4 showing in phantom lines the upper portion of bottles in a lower carrier upon which the carrier is stacked, and the lower portion of bottles received in the carrier; and

FIGURE 6 is a plan view of an alternative embodiment of the carrier of the present invention with a portion of the handle member broken away for clarity of illustration.

It has been found that the foregoing and related objects can be readily attained by a novel carrier for a plurality of bottles and the like utilizing a compartmented member of synthetic plastic material having peripheral wall, bottom wall, and center portions. The center portion has a plurality of generally vertically extending wall portions cooperating with the peripheral wall to define a plurality of bottle-receiving compartments therebetween for holding a plurality of bottles received in the compartmented member in spaced-apart relationship. A handle member of spring-like resilient synthetic plastic material is secured to the compartmented member and has a loop portion extending upwardly of the compartmented member which is dimensioned to project above the tops of bottles received in the compartments for convenient gripping and handling of the carrier. The loop portion is resiliently flattenable to the tops of bottles received in the carrier for convenient stacking of a plu-

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ality of carriers and for storage of the carrier in confined areas. For enhancing the strength and rigidity of the carrier, the handle member most desirably has a lower portion underlying a portion of the bottom surface of the compartmented member and a portion of the several bottle-receiving compartments to provide reinforcing support for bottles received in the compartmented member when the carrier is held by the handle member. To increase the unity of the assembly, the lower portion of the handle member is secured to the bottom wall of the compartmented member adjacent the ends thereof. The handle member preferably is oriented along its longitudinal axis to achieve a high degree of resilient flatness although heat-setting or a relatively thick cross-section may be employed.

The compartmented member center portion may be provided by a hollow upstanding partition element spaced from the peripheral wall or by a pair of spaced, generally vertical partitioning walls extending longitudinally of the carrier and a connecting top wall therebetween to form a pair of spaced pocket-like portions. For optimum utilization of material and firm retention of the bottles as well as cooperation therewith for greater rigidity in the loaded carrier, the center portion is configured with a plurality of vertically extending concave wall surfaces adapted to conform substantially to the periphery of bottles received therein and the intersections of the side and end walls are arcuate to conform similarly.

For enhancing the rigidity of the peripheral wall, a plurality of horizontal corrugations or ribs may be provided therein, and a plurality of vertically extending, resiliently compressible ribs or corrugations may be provided in the concave wall surfaces of the center portion to provide a compressible friction-fit for the periphery of the bottles. Most desirably, the bottom walls of the compartments have recesses in the outer surfaces thereof to receive the tops of bottles in an associated carrier thereunder for firmer stacking and projecting portions on the inner surfaces to provide bottle-supporting surfaces above the lowest plane of the bottom wall to provide a cushioning spacing for the bottles from a planar support surface upon which the carrier may be placed.

In the method of making the carrier in accordance with the present invention, a blank of synthetic thermoplastic material is thermoformed by heat and pressure into the compartmented member and then the handle member is secured thereto with the loop portion projecting thereabove and most desirably with a bottom portion extending about and underlying a portion of the bottom wall surface of the compartmented member and the several compartments thereof.

Referring now in detail to the accompanying drawings, FIGURES 1-5 illustrate one embodiment of a carrier of the present invention which is comprised of a compartmented member generally designated by the numeral 2 and a handle member generally designated by the numeral 4. To conform to popular marketing practice, the illustrated carrier is adapted to receive six beverage bottles 6.

The compartmented member 2 is integrally formed of synthetic plastic material and has a center portion generally designated by the numeral 8, vertically extending side walls 10, 12 and end walls 14, 16 providing a peripheral wall portion and a bottom wall portion generally designated by the numeral 18.

As best seen in FIGURES 3 and 4, the center portion 8 is a hollow, upstanding partitioning member which is spaced from the peripheral wall portion and has a planar top wall portion 20 and generally vertical wall portions 22, 24. The vertical wall portions 22, 24 have a plurality of vertically extending concave wall surfaces or

recesses 26 spaced thereabout which cooperate with the peripheral wall of the compartmented member to divide the interior into a plurality of bottle-receiving compartments 28 for holding bottles received therein in spaced-apart relationship. The concave wall surfaces 26 and the intersections of the side wall portions 10, 12 with the end wall portions 14, 16 are of arcuate cross section so that the plurality of compartments 28 generally conform to the periphery of bottles 6 received therein for a snug fit. To add to the strength and rigidity of the compartmented member and enhance the overall appearance of the carrier, the peripheral wall defined by the side walls 10, 12 and end walls 14, 16 is provided with a plurality of corrugations or ribs 30 extending thereabout. The end walls 14, 16 have generally vertically extending recesses 32, 34 at the center thereof and laterally outwardly projecting flange portions 36, 38 along the upper edges thereof having slots or apertures 40, 42 extending therethrough.

As best seen in FIGURES 4 and 5, the outer surface of the bottom wall portion 18 is provided with a plurality of generally circular recesses 44 in axial alignment with the bottle-receiving compartments 28 thereabove which are dimensioned to receive the tops of bottles 6 in a carrier disposed below for firm stacking of a plurality of carriers. The recesses 44 conveniently are provided by generally circular bosses 46 which project upwardly on the inner surface of the bottom wall portion 18. Spaced radially outwardly of an coaxial with the bosses 46 are upwardly extending, generally annular ribs 48 which are dimensioned to underlie and support the reinforced rim portion 50 on the bottoms of the bottles 6. In this manner, the thinner-walled center bottom portion 52 of the bottles 6 is spaced upwardly from the boss 46 and is protected from injury by a bottle therebelow and the bottom of the entire bottle 6 is spaced upwardly from the lowest plane of the inside surface of the bottom wall portion and thereby upwardly from the plane of a supporting surface upon which the carrier may be placed. To prevent the accumulation of liquid within the compartments 28, the bosses 46 have a drainage aperture 54 extending therethrough. Extending longitudinally of the bottom wall portion 18 intermediate the side walls 10, 12 is an upstanding boss 56 having its upper surface lying in a common plane with the bottle-supporting ribs 48 so as to support the inner portions of the rim portions 50 of the bottles 6. As seen in FIGURES 4 and 5, the boss 56 provides a recess 58 extending along the length of the outside surface of the bottom wall portion 18 for a purpose to be described hereinafter.

As best seen in FIGURES 2 and 3, the handle member 4 is comprised of a band 60 of resilient synthetic plastic material and has a loop portion 62 extending upwardly of the compartmented member 2 and dimensioned to project above the tops of bottles 6 received in the carrier for convenient gripping and handling. As seen in FIGURES 1 and 3, the center of the loop portion 62 is resiliently flattenable to the tops of bottles 6 received in the carrier and the portions thereof adjacent the end walls with their flange portions 36, 38 bowing outwardly with respect to the compartmented member 2 for convenient stacking of a plurality of carriers and for storage in confined areas. Upon release of the flattening pressure thereon, the loop portion is inherently springable into the arcuate form shown in full line in FIGURE 3. It can be seen that the lower portions 64 of the handle member 4 remain in substantially the same vertical position with respect to the end walls 14, 16 of the compartmented member 2 during the flattening of the loop portion 62.

The handle member 4 extends through the apertures 40, 42 and has a lower portion 64 extending downwardly along the end walls 14, 16 within vertical recesses 32, 34 therein and about the center portion of the bottom

wall 18 within the longitudinally extending recess 58. As seen in FIGURES 4 and 5, the band 60 is dimensioned to provide sufficient width to underlie a portion of each bottle-receiving compartment 28 to provide reinforcing support for bottles 6 received in the compartments 28 when the carrier is held by the handle member 4. The handle member 4 is positively locked to the bottom wall 18 of the compartmented member 2 by fasteners 66 adjacent the ends thereof, thus assuring that the lower portion 64 will remain in proper alignment with the bottle-receiving compartments 28.

Referring now to FIGURE 6, there is illustrated an alternative embodiment of the carrier comprised of a compartmented member generally designated by the numeral 102 and a handle member generally designated by the numeral 104. The compartmented member 102 is integrally formed with a pair of laterally spaced and aligned pockets generally designated by the numerals 106, 108 connected by a center top wall 110. Each of the pockets 106, 108 has an inner side wall 112, outer side wall 114, end walls 116, 118 and a bottom wall 120, and the intersections of the side walls 112, 114 with the end walls 116, 118 are of arcuate configuration to conform substantially to the periphery of bottles received therein. The center top wall 110 and inner side walls 112 have a plurality of aligned, generally vertically extending concave surfaces 122 formed therein and spaced along the length of the compartmented member 102 which cooperate with the end walls 116, 118 and outer side walls 114 to divide the pockets 106, 108 into a plurality of bottle-receiving compartments 124. To provide a compressible friction fit, the concave surfaces 122 are provided with vertically extending corrugations or ribs 126. Adjacent the ends thereof, the center top wall 110 is provided with slots or apertures 128 through which the handle member 104 extends. The bottom wall 120 is similarly provided with a plurality of generally circular bosses 130, upstanding generally annular bottle-supporting ribs 132 spaced radially outwardly thereof, longitudinal extending bosses 134 along the inner sides thereof and drainage apertures 136. In this embodiment, the lower portion 138 of the handle member 104 is dimensioned to extend across the lateral spacing between the pockets 106, 108 and to underlie the several compartments 124. Flat-headed fasteners 140 secure the bottom portion 138 to the bottom wall 120 in each of the several compartments 124 to increase the rigidity of the carrier and prevent lateral spreading of the pockets 106, 108.

The compartmented member may conveniently be thermoformed from a blank of synthetic thermoplastic material such as linear polyethylene, polypropylene, nylon, acrylonitrile-butadiene-styrene copolymer, or high-impact styrene. If so desired, the side walls of the compartmented member may provide planar portions for printing of suitable legends in a "billboard" effect between the corrugations thereabove and below and to the sides thereof.

The spring-like synthetic plastic material of the handle member may be linear polyethylene, polypropylene, nylon or other resiliently deformable materials. Although the resiliently flattenable loop is conveniently provided by a band which is oriented along its longitudinal axis, or by a relatively thick band, the plastic material of the handle member may be heat-set into a desired configuration prior to being secured to the compartmented member, preferably so as to hug tightly the end walls thereof as well as to project upwardly therefrom in a resiliently flattenable loop. The handle member may be secured to the compartmented member by any effective means such as a suitable adhesive, heat-sealing or rivets as illustrated in the drawings.

Thus, the present invention provides a novel synthetic plastic carrier for transporting a plurality of bottles and the like which may be conveniently and firmly stacked and

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stored in a minimum of space and which may be conveniently grasped and carried by a projecting, resiliently flattenable handle. The carrier may be readily and economically fabricated from synthetic thermoplastic material by relatively simple thermoforming techniques to provide a durable and attractive unit. As can be seen, the carrier is relatively rugged and utilizes cooperation between the handle member and compartmented member for efficient use of material and increased strength.

Having thus defined the invention, I claim:

1. A carrier for a plurality of bottles and the like comprising a compartmented member integrally formed plastic material having peripheral wall, bottom wall and center portions, said center portion having a plurality of generally vertically extending wall portions cooperating with the peripheral wall to define a plurality of bottle-receiving compartments therebetween for holding bottles received in said compartmented member in spaced-apart relationship; and a handle member of spring-like resilient synthetic plastic material having a lower portion secured to said compartmented member and having a loop portion extending upwardly of said compartmented member, and forming a loop extending above said compartmented member with its apex spaced thereabove in the unrestrained position of said loop portion, said loop portion being dimensioned to project above the tops of associated bottles received in said compartments for convenient gripping and handling of the carrier, said spring-like resilient material providing means for resilient flattening of the center of said loop portion to the tops of associated bottles received in said carrier by pressure applied thereon and bowing of the portions thereof adjacent the peripheral wall of said compartmented member outwardly relative to said peripheral wall for convenient stacking of a plurality of carriers and for storage of a carrier in confined areas, said lower portion of said handle member remaining in substantially the same vertical position with respect to the peripheral wall of said compartmented member upon flattening of said loop portion, said means providing inherent springability of said loop portion into the initial loop position thereof upon release of the flattening pressure applied thereon.

2. The carrier of claim 1 wherein said handle member has a lower portion underlying a portion of the bottom surface of said compartmented member and a portion of said bottle-receiving compartments, said handle member providing reinforcing support for associated bottles received in said compartmented member when said carrier is held by said handle member.

3. The carrier of claim 1 wherein said resilient synthetic plastic material of said handle member is oriented along the longitudinal axis thereof.

4. The carrier of claim 1 wherein the plastic material of said compartmented member is substantially biaxially oriented.

5. The carrier of claim 1 wherein said peripheral wall is provided with a plurality of corrugations extending thereabout.

6. The carrier of claim 1 wherein said bottom wall portion has elevated bottle-supporting surfaces in said compartments lying in a substantially common plane for supporting associated bottles received therein above the general plane of the remainder of the bottom wall portion.

7. The carrier of claim 1 wherein said center portion is comprised of a hollow upstanding partition member spaced from said peripheral wall portion.

8. The carrier of claim 1 wherein said center portion is comprised of a pair of spaced generally vertical partitioning walls extending longitudinally of the carrier and a connecting top wall therebetween.

9. A carrier for a plurality of bottles and the like comprising an integrally formed compartmented member integrally formed of synthetic plastic material, said compartmented member having a center portion, vertically extending side and end wall portions providing a peripheral wall, and a bottom wall portion extending therebetween, the intersections of said side and end wall portions being of generally arcuate configuration to conform substantially to the periphery of associated bottles received therein, said center portion having a plurality of generally vertically extending concave wall surfaces cooperating with said peripheral wall to divide said compartmented member into a plurality of bottle-receiving compartments adapted to hold bottles received therein in spaced-apart relationship, the bottom wall portions in said compartments providing bottle-supporting surfaces lying in a substantially common plane; and a handle member of resilient synthetic plastic material having a lower portion secured to said compartmented member having a loop portion extending upwardly of said compartmented member and longitudinally between the end wall portions thereof, said loop portion forming a loop extending above compartmented member with its apex spaced thereabove in the unrestrained position thereof, said loop portion being dimensioned to project above the tops of associated bottles received in said compartments for convenient gripping and handling of the carrier, said spring-like resilient material providing means for resilient flattening of the center of said loop portion to the tops of associated bottles received in said carrier by pressure applied thereon and bowing of the portions thereof adjacent the end wall portions of said compartmented member outwardly relative to said end wall portions for convenient stacking of a plurality of carriers and for storage of a carrier in confined areas, said lower portion of said handle member remaining in substantially the same vertical position with respect to the end wall portions of said compartmented member upon flattening of said loop portion, said means providing inherent springability of said loop portion into the initial loop position thereof upon release of the flattening pressure applied thereon.

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10. The carrier of claim 9 wherein said handle member has a lower portion extending about the end wall portions and underlying a portion of the bottom surface of said compartmented member and a portion of each of said bottle-receiving compartments, said handle member providing reinforcing support for associated bottles received in said compartmented member when said carrier is held by said handle member.

11. The carrier of claim 9 wherein the concave wall surfaces of said center portion have a plurality of resiliently compressible vertically extending ribs spaced thereabout to provide resilient frictional engagement with associated bottles received in said compartments.

12. The carrier of claim 9 wherein the bottom wall portions in each of said compartments have a recess portion in the outer surface thereof dimensioned to receive the tops of bottles in a carrier disposed therebelow for firm stacking and wherein said bottle-supporting surfaces are spaced radially outwardly from said recess and project upwardly from a lower plane of the bottom wall portions to space the bottom of bottles received in said carrier upwardly from the plane of a supporting surface.

13. The carrier of claim 10 wherein the bottom surface of said compartmented member underlain by said handle member has a longitudinally extending recess therein for receiving said handle member.

14. A carrier for a plurality of bottles and the like comprising a compartmented member integrally formed of synthetic thermoplastic material and having a pair of opposed laterally spaced and aligned pocket portions each having inner side, outer side, end and bottom walls and a center top wall portion extending between the upper ends of the inner side walls of said pocket portions throughout the length of said compartmented member, said center top wall portion and inner side walls having a plurality of aligned, generally vertically extending concave surfaces therein spaced along the length of the container and cooperating with the end and outer side walls of each of said pocket portions to divide said pocket portions into

a plurality of bottle-receiving compartments adapted to hold bottles received therein in spaced-apart relationship, the bottom wall portions in said compartments providing bottle-supporting surfaces lying in a substantially common plane and said top wall portion having a pair of apertures therethrough adjacent the ends thereof, the intersections of said side and end walls being of generally arcuate configuration to conform substantially to the periphery of associated bottles received therein; and a handle member comprised of a band of resilient synthetic plastic material extending through said apertures in said center top wall portion, said handle member having a loop portion extending upwardly of said compartmented member and dimensioned to project above the tops of associated bottles received in said compartments for convenient gripping and handling of the carrier, said loop portion forming a loop extending above compartmented member with its apex spaced thereabove in the unrestrained position thereof, said handle member having a lower portion extending along the sides of said compartmented member and about a portion of the bottom surface of said compartmented member and a portion of each of said bottle-receiving compartments, said lower portion being secured to a plurality of said bottle-receiving compartments and providing reinforcing support for associated bottles received in said compartmented member when said carrier is held by said handle member, said loop portion being resiliently flattenable to the tops of associated bottles received in said carrier by pressure applied thereon for convenient stacking of a plurality of carriers and for storage of a carrier in confined areas.

15. The carrier of claim 14 wherein said band is oriented along its longitudinal axis.

16. The carrier of claim 14 wherein the bottom wall portions in each of said compartments have a recess portion in the outer surface thereof dimensioned to receive the tops of bottles in a carrier disposed therebelow for firm stacking and wherein said bottle-supporting surfaces are spaced radially outwardly from said recess and project upwardly from a lower plane of the bottom wall portions to space the bottom of bottles received in said carrier upwardly from the plane of a supporting surface.

17. A carrier for a plurality of bottles and the like comprising a compartmented member integrally formed of synthetic thermoplastic material, said compartmented member having a bottom wall portion, a peripheral wall portion extending upwardly therefrom with side and end walls having generally arcuately configured intersections to conform substantially to the periphery of associated bottles received therein, and a center partitioning portion extending upwardly from said bottom wall portion intermediate and spaced from said side and end walls, said center partitioning portion having a plurality of generally vertically extending concave surfaces spaced thereabout

cooperating with the end and outer side walls to divide said compartmented member into a plurality of bottle-receiving compartments adapted to hold bottles received therein in spaced-apart relationship, said bottom wall portion providing bottle-supporting surfaces in each of said compartments lying in a substantially common plane, said end walls having a laterally outwardly projecting flange portion at the center of the upper edges thereof with apertures extending therethrough; and a handle member comprising a band of resilient synthetic plastic sheet material extending through the apertures in said flange portion, said handle member having a loop portion extending upwardly of said compartmented member and dimensioned to project above the tops of associated bottles received in said compartments for convenient gripping and handling of the carrier, said loop portion forming a loop extending above compartmented member with its apex spaced thereabove in the understrained position thereof, said handle member having a lower portion extending along the sides of said compartmented member and about a portion of the bottom surface of said compartmented member and a portion of each of said bottle-receiving compartments, said loop portion being resiliently flattenable to the tops of associated bottles received in said carrier by pressure applied thereon for convenient stacking of a plurality of carriers and for storage of a carrier in confined areas.

18. The carrier of claim 17 wherein said handle member is secured to the bottom wall portion of said compartmented member adjacent the ends thereof.

19. The carrier of claim 17 wherein said band is oriented along its longitudinal axis.

20. The carrier of claim 17 wherein the bottom wall portions in each of said compartments have a recess portion in the outer surface thereof dimensioned to receive the tops of bottles in a carrier disposed therebelow for firm stacking and wherein said bottle-supporting surfaces are spaced radially outwardly from said recess and project upwardly from a lower plane of the bottom wall portions to space the bottom of bottles received in said carrier upwardly from the plane of a supporting surface.

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