Sept. 12, 1967 KASHICHI HIROTA 3,341,054

BOX FOR CARRYING BOTTLES

Filed Dec. 27, 1965

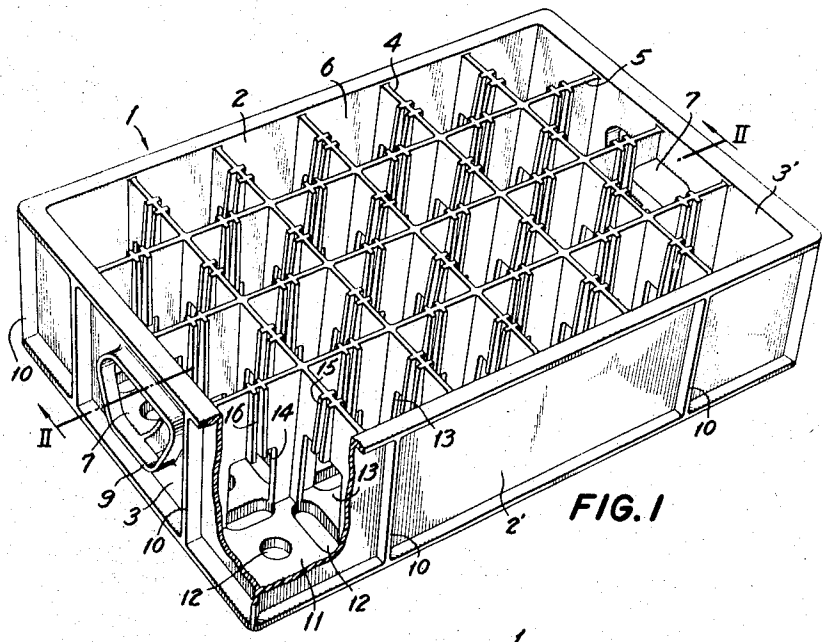


FIG. 1

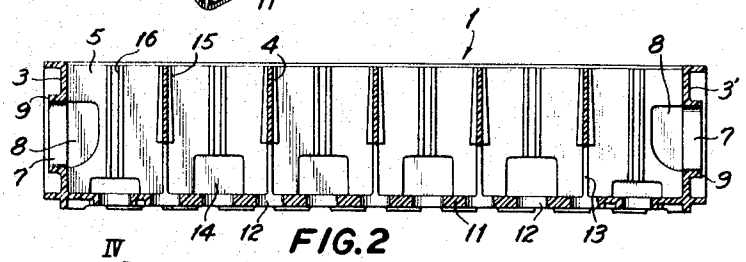


FIG. 2

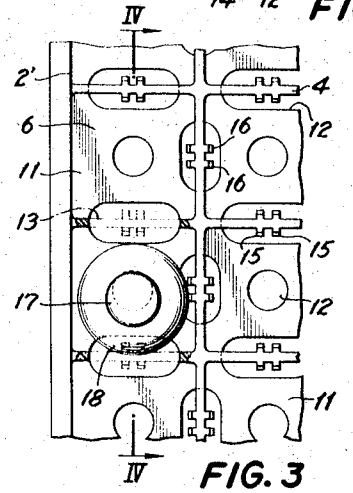


FIG. 3

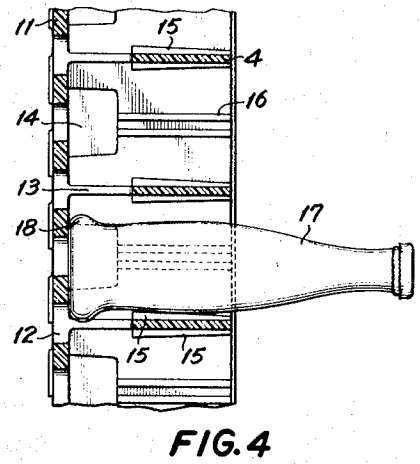


FIG. 4

INVENTOR.
KASHICHI HIROTA
BY
Buckman and Archer
HIS ATTORNEYS

United States Patent Office 3,341,054 Patented Sept. 12, 1967

3,341,054

BOX FOR CARRYING BOTTLES

Kashichi Hirota, 691, Sanda-Higashi-cho, Hachioji-shi, Tokyo, Japan

Filed Dec. 27, 1965, Ser. No. 516,466
Claims priority, application Japan, Sept. 22, 1965, 40/77,459
6 Claims. (Cl. 220—21)

ABSTRACT OF THE DISCLOSURE

A plastic box including specialy designed projections and/or spaces within a plurality of cavities in order to provide improved support for bottles.

The present invention relates to a box for carrying bottles, and more particularly to a box for carrying bottles of the type, such as Coca Cola bottles, which are reduced in diameter toward the lower portion and again increased at the lowermost portion so as to form an expanded bottom, said box being provided with a means to prevent the bottles from coming out even when the box is placed in a laterally facing position.

Bottles for containing a beverage, such as Coca Cola bottles and juice bottles, are normaly accommodated in a box in the number of a dozen or two dozen and, when the box is carried with the bottles therein, the box is usually hung at one edge by one hand, without being held horizontally by both hands. In carrying the box in the manner described, the bottles contained therein frequently come out therefrom due to the sway of the box during during transportation, with the top opening thereof facing laterally.

A primary object of the present invention, therefore, is to obviate the foregoing drawbacks possessed by conventional boxes.

Another object of the present invention is to provide a box for carrying bottles which is provided with a means to prevent the bottles from coming out of the box in an efficient manner during the period when the box is carried with the bottles therein by one hand.

Still another object of the present invention is to provide a box for carrying bottles, wherein the interior is divided by partitions into sections, each adapted to accommodate one bottle therein and provided with means to prevent the bottle from coming out therefrom.

Other objects and advantages of the present invention will become apparent from the following detailed description with reference to an embodiment shown in the accompanying drawings, in which:

FIGURE 1 is a perspective view of the box for carrying bottles of the present invention, with a portion broken away;

FIGURE 2 is a cross sectional view taken along the line II—II of FIGURE 1;

FIGURE 3 is an enlarged plan view of a portion of the box for carrying bottles of the present invention; and

FIGURE 4 is an enlarged cross sectional view taken along the line IV—IV of FIGURE 3.

Referring now to the drawings embodying the present invention as applied to a two-dozen box, the box **1**, as clearly shown in FIGURE 1, has a depth of approximately one half of the height of the bottles to be accommodated therein and has a cavity defined by a pair of side walls **2** and **2'** and a pair of end walls **3** and **3'**, said cavity being divided by a plurality of transversely extending partitions **4** and a plurality of longitudinally extending partitions **5**, arranged in perpendicularly crossing relation, into a multiplicity of sections, each for accommodating one bottle therein. In each of the end walls **3** and **3'** of the box **1**, there is formed a hole **7** at the center thereof for the insertion of a hand. A longitudinally extending partition **5** located at the center of the box is formed at the portions where it is connected to the end walls **3** and **3'** with cutouts **8** which communicate with the respective holes **7** so as to facilitate the insertion of a hand (see FIGURE 2). Each of the holes **7** is provided with a flange **9** around the periphery thereof for protecting the hand by preventing the edge of the hole from cutting into the hand when carrying the box.

The side walls **2** and **2'** and the end walls **3** and **3'** of the box **1** and their joints are adequately reinforced with ribs **10**, while the bottom wall **11** is formed therein with a number of holes **12** for the purpose of quick draining of washing water as well as reducing the weight of the box, said bottom wall being also reinforced with ribs **10** so as to impart an adequate rigidity to the box. The box **1** may be advantageously formed integrally by moulding a plastic material such as polyethylene.

In the box **1** of the present invention, the side walls **4** and **5** defining each section **6** are formed at their lower portions with substantially rectangular cutouts **13**, **14** respectively, while each of said side walls **4** and **5** has a pair of parallel, vertically extending elongated projections **15** or **16** which are formed integrally with the respective wall at the center of each section. These projections, together with the aforementioned cutouts, provide a means for preventing the bottle from coming out of the respective sections. To explain more practically, when the box **1** is hung by one hand at the hole **7**, with a bottle **17** having an expansion **18** at its bottom being accommodated in the section **6** as shown in FIGURES 3 and 4, the expansion **18** of the bottle **17** engages the cutout **13** formed at the lower portion of the partition **4**, with a portion of the side of the bottle resting on the pair of parallel projections **15**, whereby the bottle is stabilized. In carrying the box in the condition described, the bottle will not come out the box because the expansion **18** formed at the bottom thereof engages the lower ends of the projections **15**, even when the box is swayed. Furthermore, since the pair of projections **15** are formed on each side wall of each section **6** in a slightly spaced and substantially parallel relation, the bottle having a circular cross section is held in its position in an orderly manner while resting on said pair of projections, having less possibility of being shaken or rattled during transportation.

The pairs of projections **15** and **16**, which are formed integrally with the respective walls **4** and **5**, are sloped with their heights progressively increasing towards the lower ends thereof, so that their shapes correspond to the side contour of the bottle **17** as shown in FIGURE 4. The formation of the projections in such a manner contributes to the stability of the bottle **17** within the section **6**, because the side surface of the bottle neatly rests on the edges of the projections **15**. Moreover, the sloped projections as described above facilitates the removal of a product from a mould after moulding a plastic material.

As will be apparent from the foregoing description, the present invention provides a box for carrying bottles which is effective in its use for carrying bottles of the type, such as Coca Cola bottles, which are initially reduced in diameter at the lower portion and then expanded to form a bottom as shown in FIGURE 4. When the box of the present invention is used for carrying bottles of the type described, the bottles will not come out of sections **6** even when the box is positioned vertically or further to a position at which the open top surface of the box faces slightly downwardly.

Although the foregoing explanation was given with reference to a specific example, it should be understood that many modifications can be made to the present inven-

tion without departing from the spirit of the invention. For instance, the application of the present invention is not limited to a two-dozen box but the number of bottles to be accommodated in the box of the present invention may be determined optionally, and the shape and dimension of the box may also be varied according to the occasional requirements.

What I claim is:

1. In a plastic box for carrying bottles having four side walls and a bottom, comprising partitions for dividing the box into a plurality of cavities for containing said bottles, rigid pairs of projections on said partitions disposed opposite the center axis of said cavities, said projections extending over half-way into the respective cavity, said projections being spaced to provide separate points of support for each bottle when the box is positioned with its open side in a non-horizontal position.

2. A plastic box as defined in claim 1, wherein said projections are wedge-shaped to substantially conform to the portion of the side surface of the bottle which is deposited adjacent thereto, said projections furnishing line contact support for the bottle when the box is positioned with its open side in a non-horizontal plane.

3. A plastic box according to claim 1, wherein said bottles have a necked-down portion near the bottom merging into an enlarged bottom, and said projections are the only projections in the said cavities and terminate at a distance from the bottom of the cavity at least equal to the distance from the bottom of said bottle to the lower expanding area of said necked-down portion.

4. A plastic box as defined in claim 3, comprising at least one cutout area in said partitions formed beneath said projections, said cutout area being dimensioned in width to accommodate the depending portion of the enlarged bottom of said bottle when the box is positioned with its open side in a non-horizontal plane.

5. A plastic box as defined by claim 3, wherein said elongated projections are parallel.

6. A plastic box as defined by claim 5, wherein said projections are sloped with their heights progressively increasing towards the bottom of the cavity.

References Cited

UNITED STATES PATENTS

2,535,493	12/1950	Gerber.	
3,261,495	7/1966	Beesley et al.	220—21

FOREIGN PATENTS

686,780	5/1964	Canada.

THERON E. CONDON, *Primary Examiner.*

J. B. MARBET, *Assistant Examiner.*