

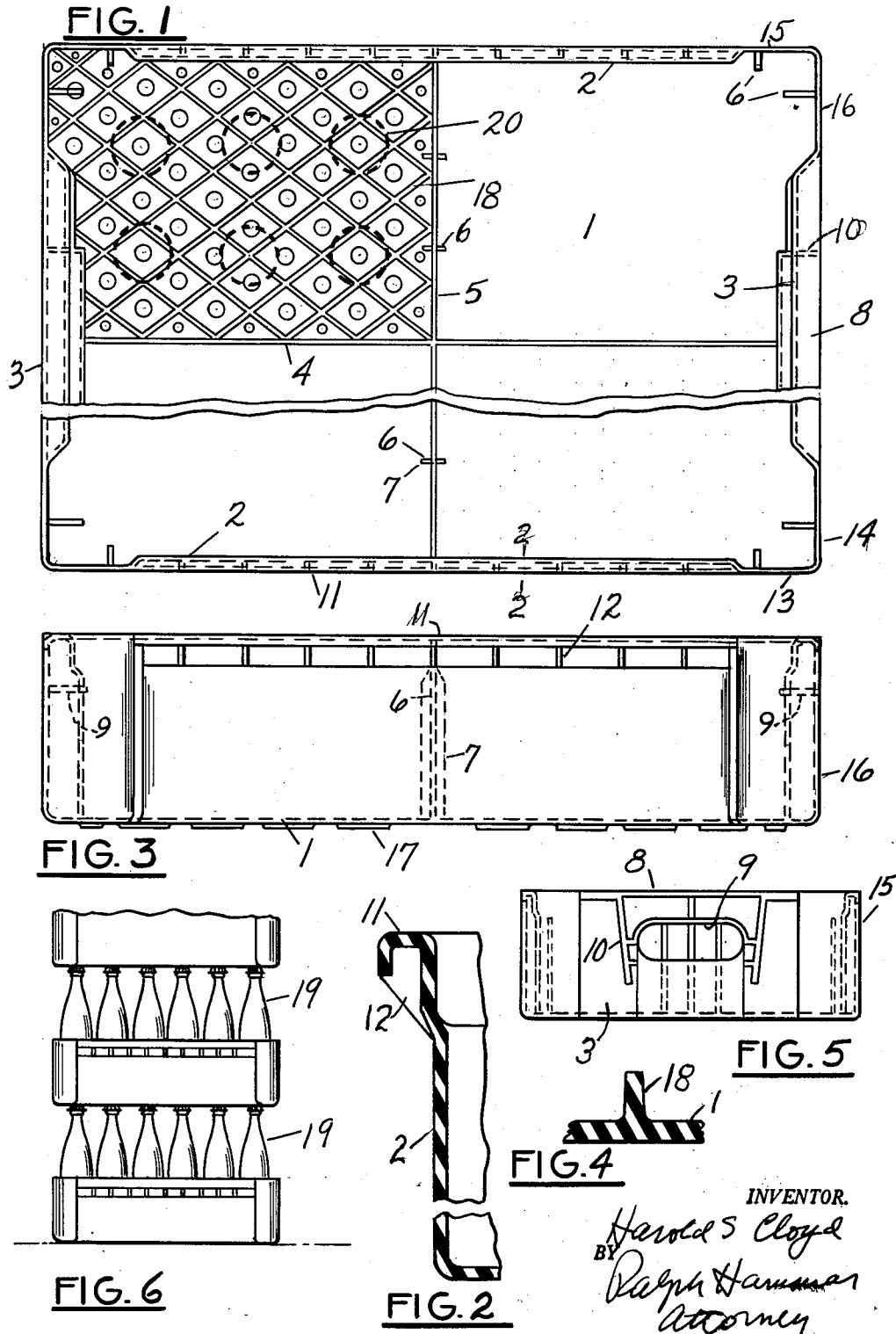
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CASE FOR BOTTLED BEVERAGES

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CASE FOR BOTTLED BEVERAGES

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2 Claims. (Cl. 220-21)

This invention is a plastic case for bottled beverages which may be handled in the same manner and intermixed with the conventional wood case.

In the drawing, FIG. 1 is a top plan view of a preferred form of the case, FIG. 2 is a section on line 2-2 of FIG. 1, FIG. 3 is a side elevation, FIG. 4 is a fragmentary section through the bottom ribbing, FIG. 5 is an end view, and FIG. 6 is a diagrammatic view showing palletized or stacked cases.

The case is molded in one piece from one of the semi rigid, high strength, impact resistant plastics, such as polyethylene, which permit thin wall sections with the resultant light weight. The case has a bottom wall 1, side walls 2, end walls 3, connected by lengthwise and crosswise partitions 4 and 5, dividing the case into four compartments, each sized to receive a six pack carton of bottled beverages. The height of the walls 2 and 3 is substantially half the height of the bottles, as in the conventional wood case. Because of the high strength and impact resistance, the walls of the plastic case are much thinner and the case is much lighter than wood. In order to obtain rigidity of the walls, and at the same time to locate six pack bottle cartons inward from the outer periphery of the case, there are provided on the inner surfaces of the side and end walls and on both surfaces of the cross partitions 5, vertical ribs 6, the inner edges 7 of which, in conjunction with the lengthwise partitions, define the outline of the six pack cartons. The internal ribs 6 have the additional function of assisting in spacing the six pack cartons of bottles inward from the outermost periphery of the case so as to decrease the risk of breakage under impacts which flex the outside walls of the case.

At the upper edge of each of the end walls 3 is a rim 8 which, in conjunction with a flanged hand hole 9, provides a hand grip for the case. The rim is reinforced by external ribs 10 on the end walls 3. The ribs 10 stiffen the end walls and the hand hole (FIG. 5) and have the further function of preventing lifting of the cases off the rolls of conveyors used in bottling plants when moved along the conveyors in end to end relation with wood cases. If the ribs 10 were omitted, the ends of the heavier wood cases could slide under the rim. A similar rim 11 with ribs 12 is provided at the upper edges of the longitudinal side walls 2 of the case.

In bottling plants, the cases are handled and loaded by automatic machinery and conveyors designed to handle the rigid and heavy wooden cases and which cause frequent impacts on the corners of the cases. Instead of reinforcing the corners to withstand these impacts, the corners have been provided with flexible projecting corner walls 13 and 14 of the same height as the adjoining side and end walls 2 and 3. These flexible corners yield under impact and cushion the shock. The outer surfaces 15 and 16 of the corners lie in vertical planes corresponding to the outer surfaces of the conventional wooden case. These end surfaces 15 and 16 accordingly provide sensing surfaces for automatic equipment which are in the same location as the corresponding surfaces of the wood cases. This permits the plastic cases to be intermixed with wood cases at the bottling plant without making any adjustments of the automatic equipment. For example, in the automatic loading equipment the cases move along conveyors

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and as each case comes into loading position, cartons are automatically loaded in response to sensing devices contacting the approaching outer surface of the case. In a wood case this is simple because the outer surfaces are plane and are spaced fixed distances from the inner surfaces of the case. The outer surfaces of the corners of the present case have the same relation to the inner surface as in the wood case so the sensing equipment requires no change for plastic cases. This permits intermixing of plastic and wood cases. In addition to acting as shock absorbers, the flexible corners also serve to space the six pack cartons inward, thereby providing a further protection against breakage.

On the under side of the bottom wall of the case are a plurality of small supporting feet 17. On the upper side of the bottom wall are intersecting diagonal ribs 18 forming polygons such as diamonds and triangles smaller than a bottle cap. The reason for this is apparent from FIG. 6, which shows a plurality of cases stacked or palletized with the upper cases supported on the tops of bottles 19 of the lower cases. The bottom wall of the case is strong enough to stand the load if properly distributed but the concentration of the load at the tops of the bottles becomes acute for the lower cases when the cases are stacked five or six high. The position of the bottle tops is indicated by dotted lines 20 in FIG. 1. As can be seen, the diamonds and triangles are smaller than the tops of the bottles so that no matter how the cases are positioned, the load will always be distributed by several of the intersecting diagonal ribs 18. This is important because in stacking the bottle cases, precise alignment is not always achieved.

What is claimed as new is:

1. A plastic case for cartons holding a plurality of rows of upright bottles fitted with crown caps, comprising a one-piece case of semi-rigid plastic having a rectangular bottom wall, side and end walls and intersecting lengthwise and crosswise partitions dividing the case into four compartments each adapted to receive a single of said cartons of bottles, vertical internal ribs on said walls having inner edges thereof engaging the adjacent carton and positioning the same inward from the corners of the case, flexible vertical corner sections respectively adjoining the side and end walls and each corner section comprising two vertical walls having inner and outer surfaces offset outwardly and projecting from said side and end walls to provide for flexible reinforcement of the corner sections and with the outer surfaces of the end walls lying in vertical planes providing sensing surfaces for automatic bottling equipment, the height of the side and end walls being less than the height of the bottles in said cartons, and the bottom wall having thereon ribs outstanding upwardly therefrom and extending across the case from the side and end walls and intersecting to form a grid of polygons each smaller than the individual crown caps of said bottles so that when the cases are stacked one on top of the other with the weight of the upper cases resting on the caps of the bottles of the lower cases each bottle cap in a lower case underlies at least one intersection of said ribs to provide a stable support for the upper cases even though the cases are not in precise alignment and each of the intersecting ribs being of sufficient thickness as to distribute the stress over the bottom wall from each bottle cap on which the bottom wall rests.

2. A plastic case for cartons holding a plurality of rows of upright bottles fitted with crown caps, comprising a one-piece case of semi-rigid plastic having a rectangular bottom wall, side and end walls and intersect-

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ing lengthwise and crosswise partitions dividing the case into four compartments each adapted to receive a single of said cartons of bottled beverages, vertical internal ribs on said walls having inner edges thereof engaging the adjacent carton and positioning the same inward from the corners of the case, and flexible corner sections each comprising two vertical walls having inner and outer surfaces lying in vertical planes displaced outwardly beyond the adjoining side and end walls to provide flexible reinforcement of the corner sections, projecting outwardly from said end and side walls and with the outer surfaces of the end walls lying in vertical planes providing sensing surfaces for automatic bottling equipment.

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