United States Patent

[11] **3,552,598**

[72] Inventor **James D. Wilson**
Long Beach, Calif.

[21] Appl. No. **785,513**
[22] Filed **Dec. 20, 1968**
[45] Patented **Jan. 5, 1971**

[73] Assignee **Banner Metals, Inc.**
Compton, Calif.
a corporation of Ohio

[54] **CARRIER CONTAINER AND INSERT COMBINATION**
5 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **220/23.83,** 211/126, 220/97
[51] **Int. Cl.** **B65d 21/04;** A47f 3/14
[50] **Field of Search** 220/23.6, 23.83, 97D, 97F, 23.86; 211/126

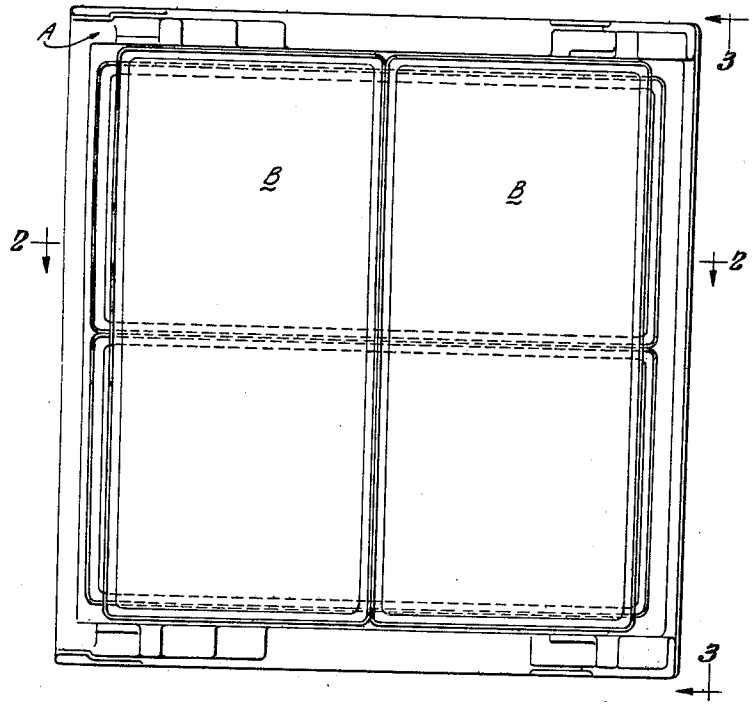
[56] **References Cited**

UNITED STATES PATENTS

3,219,232	12/1965	Wilson	220/97(D)
3,355,054	11/1967	Wilson	220/97(D)
3,401,828	9/1968	Bockenstette	220/97(F)

Primary Examiner—George E. Lowrance
Attorney—Jessup & Beecher

ABSTRACT: The invention relates to an improved plastic container combination in which a nestable-stackable container serves as a carrier for a stack of nestable-stackable trays.



PATENTED JAN 5 1971

3,552,598

SHEET 1 OF 3

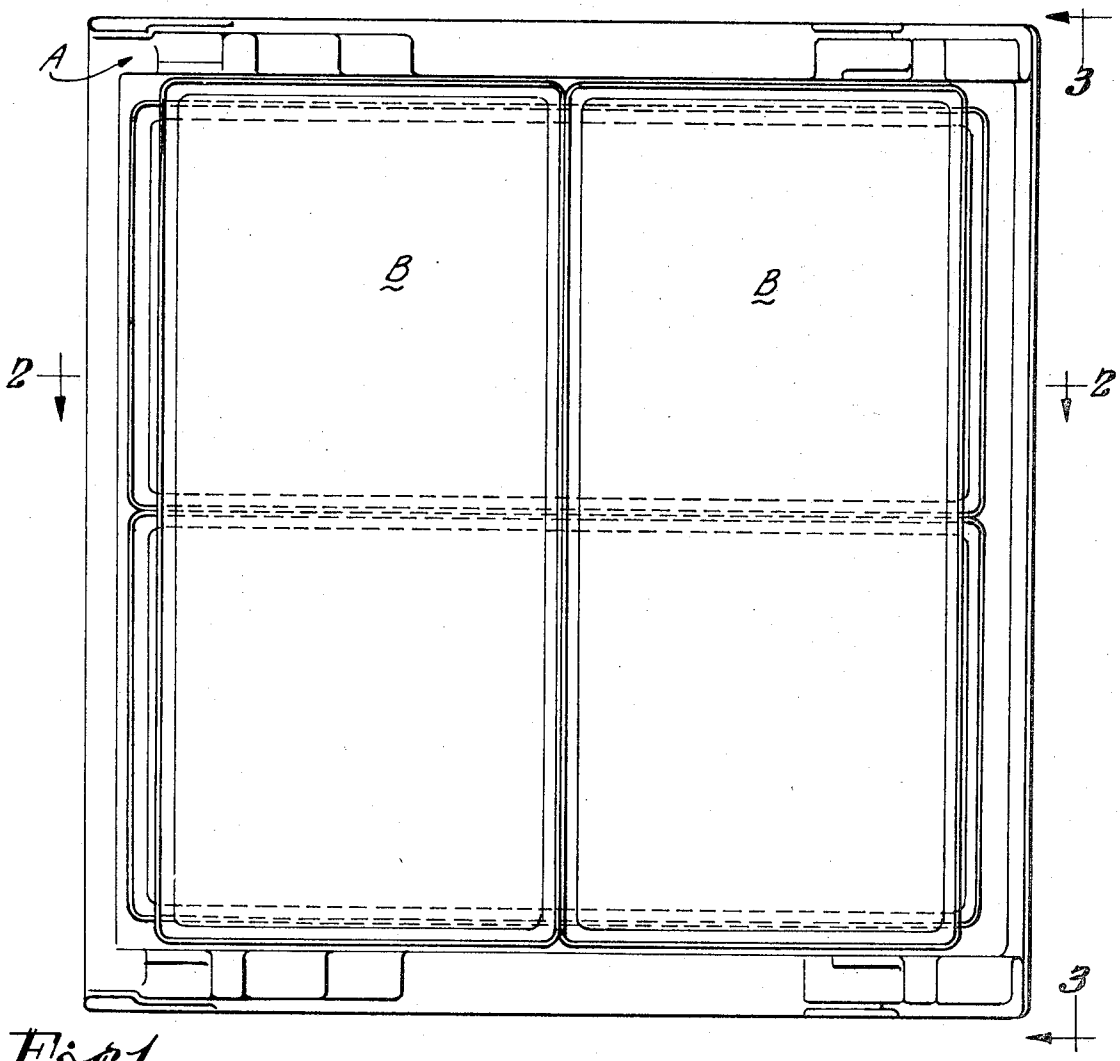


Fig. 1

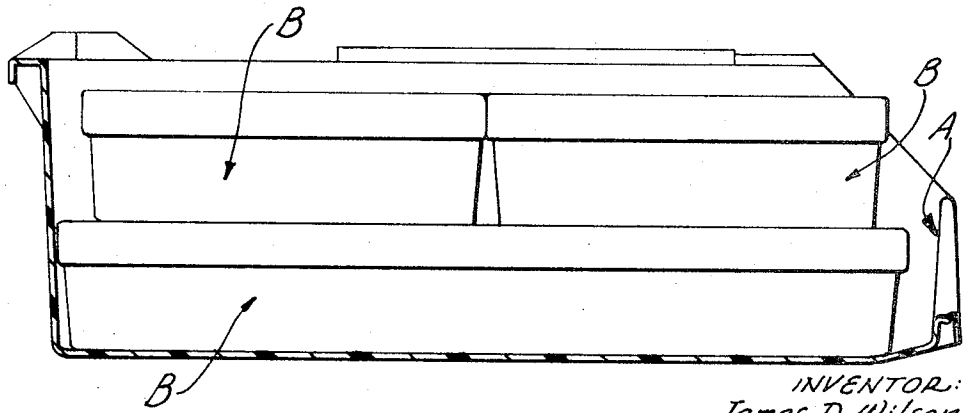


Fig. 2

INVENTOR:
James D. Wilson
Jenny and Beecher
By Keith D. Beecher
ATTORNEYS

Fig. 3

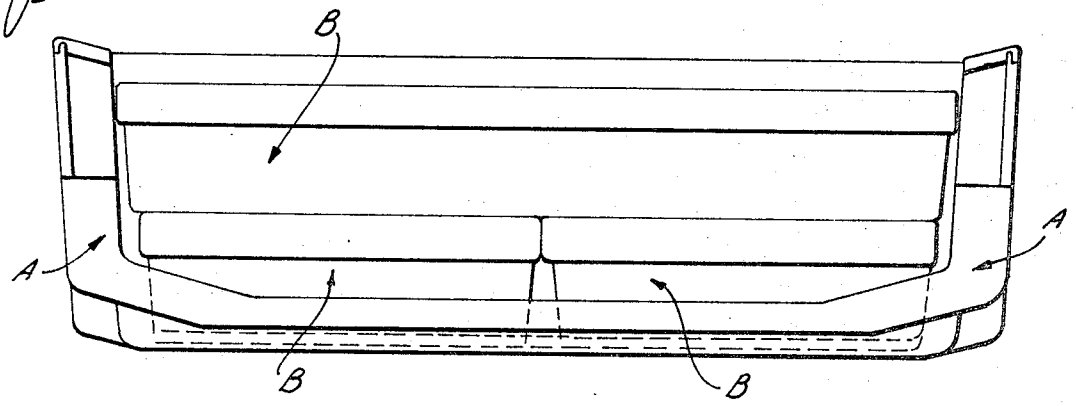
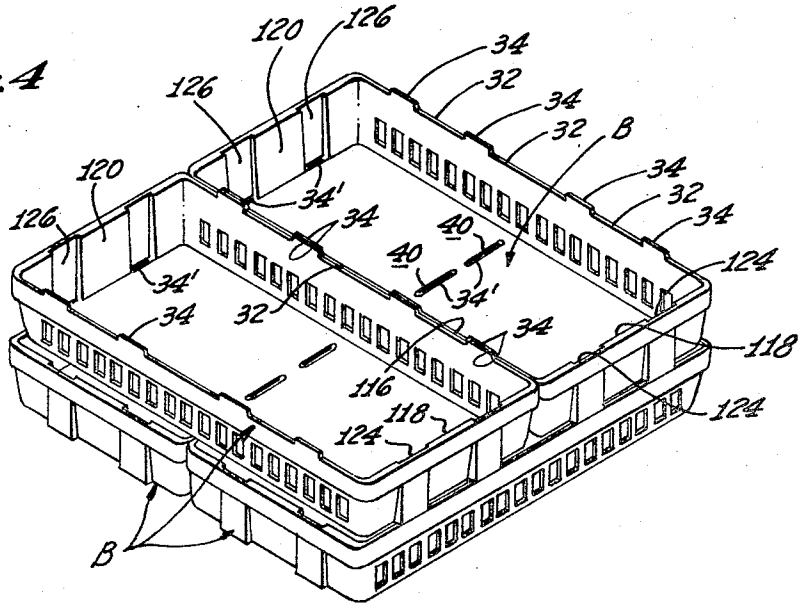


Fig. 4



INVENTOR:
James D. Wilson
Kemp and Becker
By Keith D. Becker
ATTORNEYS

Fig. 5

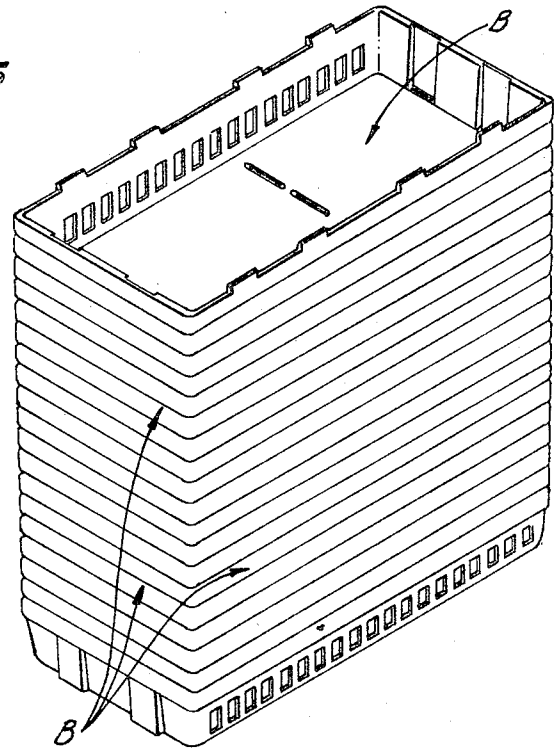
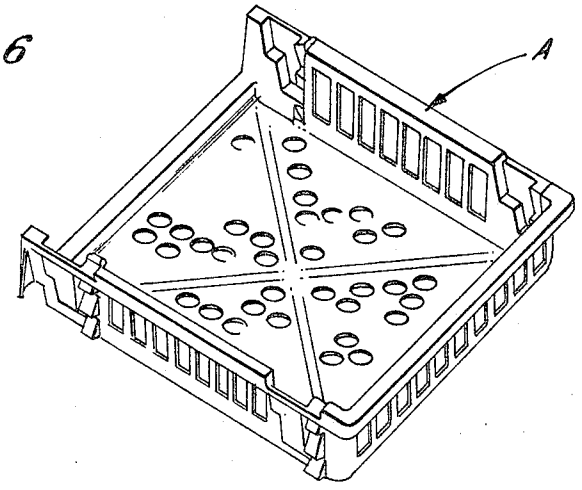


Fig. 6



INVENTOR:
James D. Wilson
Jenny and Beech
By Keith D. Beech
ATTORNEYS

CARRIER CONTAINER AND INSERT COMBINATION

BACKGROUND OF THE INVENTION

The combination of the present invention finds particular utility, for example, in the bakery industry for distributing small cakes and pastries from a central bakery to the retail or other outlets.

The carrier container used in the combination of the present invention may be similar to the nestable-stackable containers disclosed, for example, in U.S. Reissue Pat. Re. 26,350 which issued Feb. 20, 1968, and in U.S. Pat. No. 3,398,840 which issued Aug. 27, 1968.

The containers described in the aforesaid patents are useful in themselves for distributing, for example, loaves of bread and other relatively large bakery objects. The containers are advantageous in that they are rugged and capable of rough usage over long periods of time without any significant breakage. The aforesaid containers also have the feature of being able to be stacked into a stable tier when loaded, without damage to the merchandise. The aforesaid containers also have the advantage of being able to be nested into one another in a compact tier when empty, so that the containers may be returned to the central bakery, or other central distributing point, with a minimum of space requirements.

It has been found, however, that the containers described in the aforesaid patents are not particularly suitable for distributing the smaller bakery goods, such as small cakes and pastries. This is because only a limited number of the smaller goods may be carried in such containers, unless the goods are placed on top of one another which, in the case of pastries and cakes is not feasible due to the resulting damage of the product.

The combination of the present invention, however, provides a combination of small shallow trays which may be individually loaded with the smaller delicate bakery goods, and which may be stacked on top of one another within the aforesaid containers in an interlocking condition without damage to the goods. The larger containers then serve as carriers for the smaller stacked trays which are inserted therein.

With the aforesaid tray-container combination, the individual trays may be loaded and stacked in the larger containers in a stable intercoupled manner, without damage to the goods. The larger containers, with their stacked inserts, may themselves be stacked into a stable tier in the manner described in the aforesaid patents. Then, when the trays are empty, they may be removed from the carrier containers and nested into a compact tier for return to the bakery, and the larger carrier containers may also be nested into a compact tier and likewise returned.

SUMMARY OF THE INVENTION

The invention provides a combination of a nestable-stackable carrier container and a plurality of smaller nestable-stackable insert trays which may be supported in the carrier container in a stacked condition and with interlocking connections therebetween. The insert trays are assembled on top of one another in a manner such that the goods in the trays are not crushed or otherwise damaged. The carrier container itself may be stacked into a stable tier with other like containers, likewise without crushing or otherwise damaging the goods in the insert trays in the individual containers.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view showing a plastic container of the type disclosed in the aforesaid patents, and also showing a plurality of insert carriers or trays supported within the container;

FIG. 2 is a cross-sectional view of the combination shown in FIG. 1, and taken essentially along the line 2–2 of FIG. 1;

FIG. 3 is a front view taken, for example, from the right in FIG. 1;

FIG. 4 is a perspective showing the manner in which the insert trays may be stacked in an interlocking condition within the container of FIG. 1;

FIG. 5 shows the manner in which the insert trays may be nested into one another when empty, so as to provide a compact tier; and

FIG. 6 is a top perspective view of a carrier container suitable for carrying the stack of insert trays shown in FIG. 4.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

As shown in FIGS. 1, 2 and 3, for example, a nestable-stackable carrier container A is provided which supports a stack of smaller, shallower insert trays B. In the illustrated embodiment, the stack of trays B within the container A includes four trays stacked in a two level tier. The manner in which the insert trays B are stacked on one another is shown in more detail in FIG. 4. It will be appreciated, of course, that other dimensional carrier containers may be used, and more or less of the insert trays may be stacked into the containers.

As described above, each of the shallow insert trays B is loaded, for example, with the delicate small bakery products, and the insert trays are then loaded into the carrier container A in a stable stacked condition, and in the manner illustrated in FIGS. 1—3. The insert trays, as shown in FIG. 4, are stacked in a multilevel tier in a transverse relationship, with the trays of each level of the tier extending transversely across the trays of the next lower level, and in a 90° relationship. As will be described, when the trays B are stacked in the manner shown in FIG. 4, they intercouple with one another so as to hold the entire stack in a firm and stable condition.

The carrier containers may be constructed, for example, in the manner shown in FIG. 6. These containers may be composed of molded plastic or sheet metal construction. The bottom and walls of the container are formed integral as a one-piece structure. When the carrier container is made of plastic, it can be formed by a usual plastic molding operation. In the illustrated construction, the sides and bottom walls are apertured, as shown in FIG. 6, so as to reduce the weight of the carrier container, and also to enable its contents to be observable from its exterior.

As shown in FIG. 6, the nestable-stackable carrier container includes a bottom wall **10**. It also includes a pair of sidewalls **12** and **14** extending upwardly from the bottom wall, and a pair of end walls **16** and **18**. The end walls **16** and **18** also extend upwardly from the bottom, and the walls **12**, **14**, **16** and **18** define an open top for the receptacle. As also shown in FIG. 6, the end wall **18** has a foreshortened height, so as to permit access to the interior of the container.

The sidewalls of the container A are configured so that a pair of vertically extending channels **20** are formed in each of the sidewalls **12** and **14** respectively adjacent the corners of the container. The channels **20** are formed in the internal surface of the sidewalls, and each channel has a lower end portion which defines a shoulder **22**. In each channel **20**, the shoulder **22** is displaced upwardly from the bottom **10** of the container. Each of the sidewalls **12** and **14** has an upper edge, these being designated **24** and **26**, respectively. The upper edges **24** and **26** extend from one side of the corresponding channels **20** to overlie a portion of each channel. The remaining portion of the channel defines a vertical clearway which extends down from the top of the container to the shoulder **22**.

The channel **20** is formed, in each instance, by configuring the plastic material to have an outwardly projecting portion **20***a*. The bottom wall **10** has a plurality of outwardly extending portions **30** in axial alignment with respective portions of the top edges which overlie corresponding portions of the vertical channels **20**. As illustrated, each of the outwardly extending portions **30** has a slot **32** formed in it, and these slots receive corresponding projections **34**, which extend upwardly from the overlying portions of the top edges **24** and **26** adjacent the clearway of each channel **20**.

Each vertical channel **20** is configured to incorporate an intermediate shoulder **40** which extends partially across the channel to one side of the aforesaid clearway, and in axial

alignment with the respective portions of the aforesaid upper edges, which overlie a part of each channel **20**. The side of the clearway portion of each channel **20** opposite to the shoulder **40** is formed to have a shoulder **42**. The shoulder **42** facilitates the manipulation of the carrier containers, when they are empty, and when they are moved to a nested position.

When one of the carrier containers A is to be stacked on another, the upper container is merely placed over the lower container in a position such that the upper projections **34** of the lower container are received in the slots **32** of the upper container. This provides for a rigid, firm and stable relationship between the stacked containers, so that a plurality of like containers may be so stacked to form a stable and rigid tier. As mentioned above, each of the carrier containers in the tier may previously be loaded with stacked and interlocked insert trays B, such as shown in FIG. **4**.

When one of the empty containers A is to be nested down into another empty container A, the upper container is moved upwardly from the lower, so that its slots **32** are disengaged from the projections **34** of the lower container. The lower container is then moved horizontally towards the open foreshortened edge of the lower container, so that its bottom projections **30** lie over the clearway portions of the corresponding channels **20** of the lower container. The upper container can then be dropped down into the lower until its bottom projecting portions **30** engage the corresponding shoulders **22** at the bottom of the channels of the lower container.

The upper container is then moved into axial alignment with the lower container, such that its shoulder **22** moves along the shoulder **40** of the lower container, and its projections **30** move along the shoulder **22** of the lower container. During this relationship, the shoulder **40** of the upper container engages the overlying portion of the upper edges of the lower container. In this way, the carrier containers may be nested to form a stable tier in which all the containers are vertically aligned, and which enables the carrier containers to be returned to the distributing center with a minimum of space requirements.

The trays B, as shown in FIG. **4**, may be constructed to include a bottom wall **112**, a pair of outwardly flared sidewalls **114** and **116** which are formed integral with the bottom wall and which extend upwardly therefrom. The tray B also includes a pair of outwardly flared end walls **118** and **120**. The end walls are also formed integral with the bottom wall **112** and with the sidewalls **114** and **116**, and they also extend upwardly from the bottom wall.

The end walls **118** and **112** have fluted sections formed thereon which provide wedge-shaped spaces **124** and **126** on the interior surfaces of each of the end walls **118** and **120**, respectively, The tray B is also provided with a peripheral rim **32** which extends around the upper edge of the sidewall and end wall. The rim **32** has upwardly extending lug projections **34** formed at spaced intervals along the opposite sidewalls of the tray, in the illustrated embodiment, four such lugs are shown on the upper rim or edge of each side.

The spaces **124** and **126** form fluted sections on the exterior surfaces of the respective end walls, and the open bottom portion of each of the fluted sections receives the lugs **34** of a lower tray, when an upper tray is laid transversely across a pair of lower trays, such as shown in FIG. **4**. The bottom wall also includes slots **40** extending transversely across the center of its bottom wall, as shown in FIG. **4**. These slots **40** each receive a pair of contiguous lugs **34** on the adjacent sidewalls of the pair of lower trays, when an upper tray is laid across the lower trays, as shown in FIG. **4**.

In the manner described above, each tray in the tier of FIG. **4** is firmly supported on the lower tray, by the intercoupling between the upper lugs **34** of the lower tray and the slots formed at the bottom of the end flutes of the upper tray. Also, the trays of each level in the tier are held interlocked together, by the intercoupling of their adjacent lugs **34** within the slots **40** in the bottom wall of the upper tray. In the aforesaid manner, the interlocking portions of the trays in the tier of FIG. **4** snugly fit into one another, so that the trays are maintained in a stable tier. The components of the lower tray in FIG. **4** are designated by primed numbers, as shown, and correspond to similarly numbered components of the upper tray.

As mentioned above, the trays of FIG. **4** are individually loaded with bakery goods, for example, and are then loaded into the trays B as shown in FIGS. **1—3**. The individual trays are loaded into the carrier containers A in a stacked relationship, such as shown in FIG. **4**. The loaded carrier containers may then themselves be stacked on top of one another into a stable tier, as described above. Then, when the trays are empty, they may be removed from the carrier containers, and nested into a tier, such as shown in FIG. **5**. The containers A of FIG. **6** may likewise be nested into a compact tier, so that all the trays and carrier containers may conveniently be returned to the distributing center with a minimum of space requirements.

I claim:

1. In combination: a carrier container, and a plurality of trays adapted to be carried in said carrier container in a stacked condition, each of said trays having a bottom wall with a series of slots extending transversely across thereof, and each of said trays having end walls and sidewalls, the upper edges of said sidewalls having upstanding lug projections, said projections defining complementary interlocking means with said slots and marginal portions of said bottom wall with respect to lower and upper trays in said carrier container, said interlocking means serving to hold the trays of said plurality in an interlocked condition in said carrier container and stacked therein as a multiple level tier, with each level of said tier containing at least two such trays in side-by-side relationship, and with the trays of each level of said tier being oriented to extend transversely across the trays of the lower contiguous levels in a 90° relationship.

2. The combination defined in claim **1**, in which said carrier container is configured to stack with other like carrier containers into a stable tier.

3. The combination defined in claim **1**, in which said trays are configured to nest into one another when empty and thereby form a compact tier.

4. The combination defined in claim **1**, in which said trays are each composed of a plastic material and have an integral construction for said sidewalls and bottom wall.

5. The combination defined in claim **1**, in which said carrier container has an integral construction and is composed of a plastic material.