Feb. 22, 1966 W. C. BARRETT ETAL 3,236,433

CONTAINER

Filed April 12, 1963 2 Sheets-Sheet 1

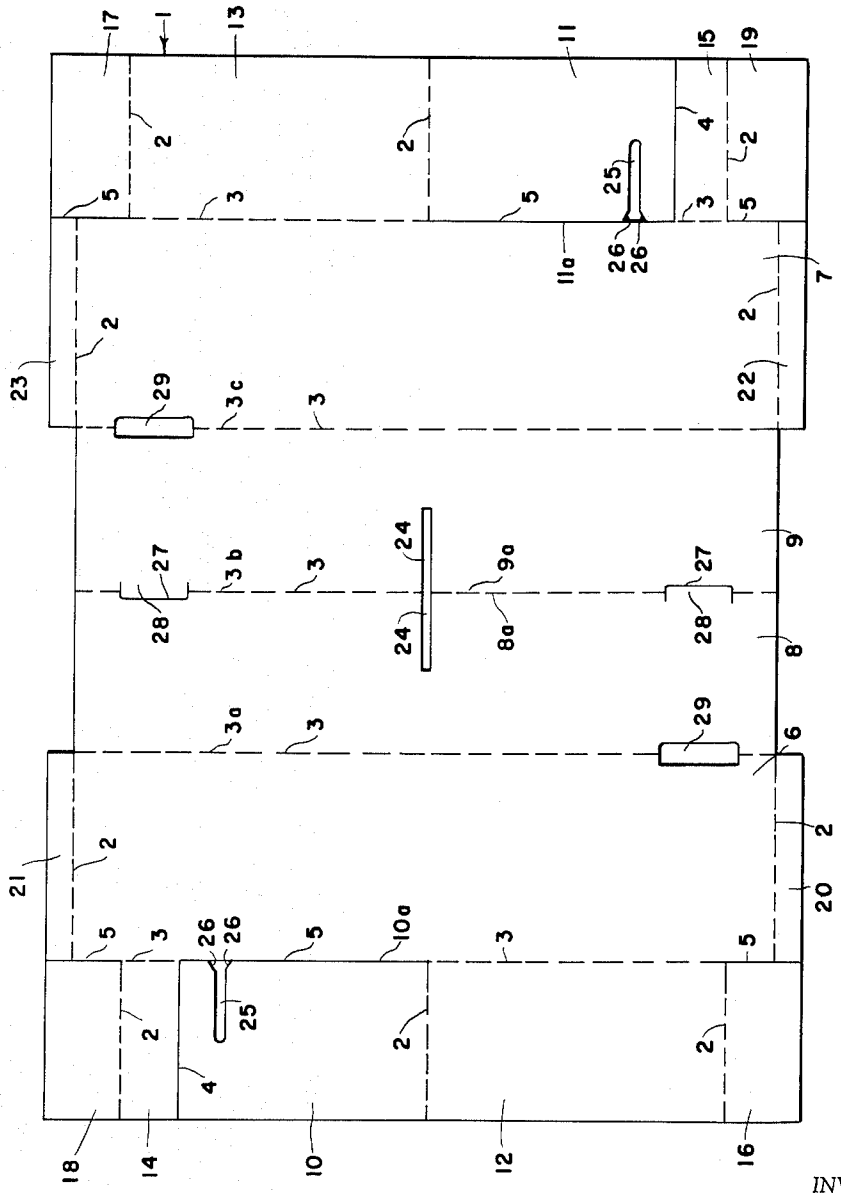


FIG. 1

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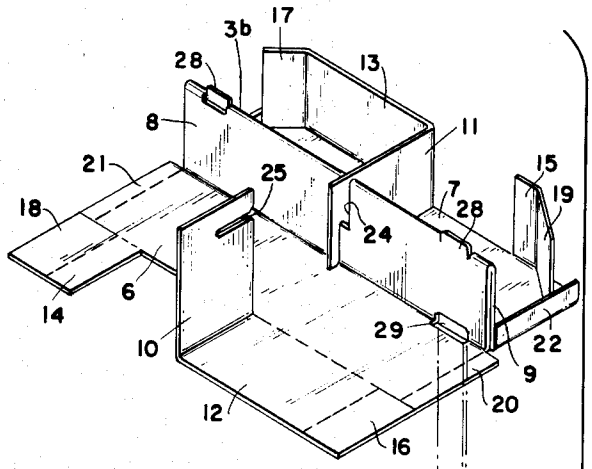
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CONTAINER

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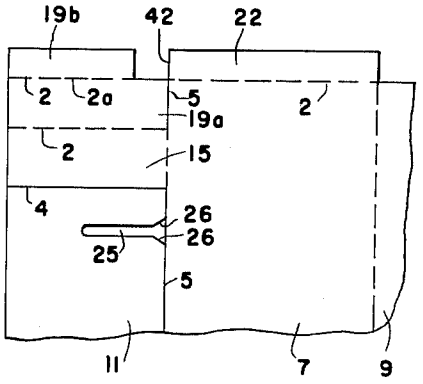


FIG.4

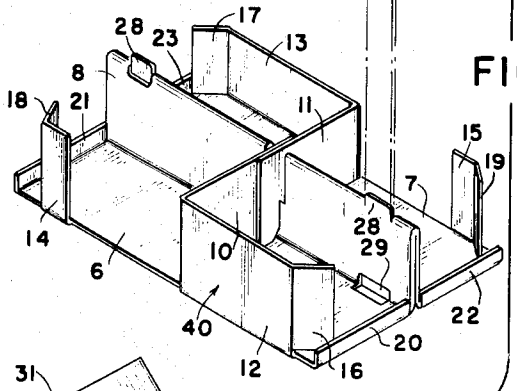


FIG.2

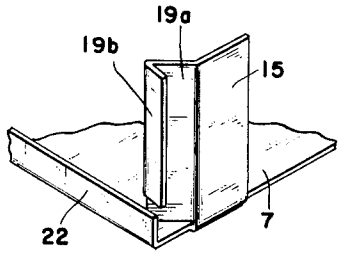


FIG.5

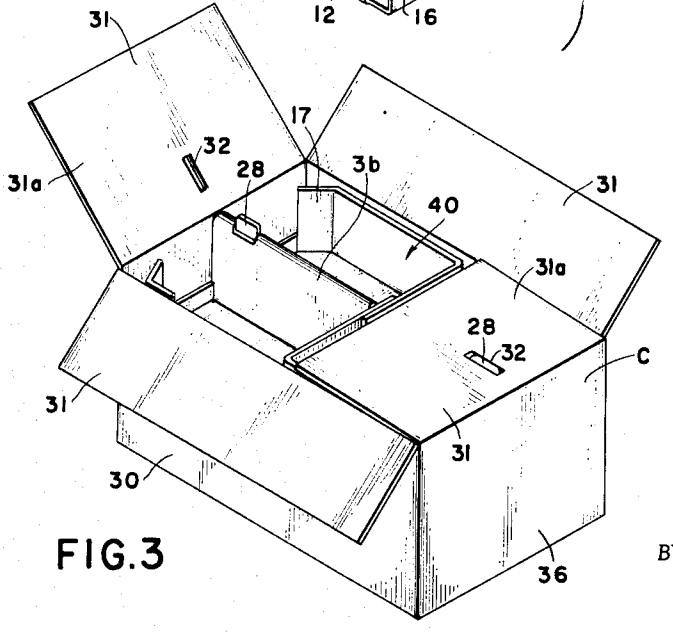


FIG.3

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3,236,433

CONTAINER

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Filed Apr. 12, 1963, Ser. No. 272,712
6 Claims. (Cl. 229—15)

This invention relates to a container and more particularly to an insert or inserts for a container.

It is often desirable to divide a container into compartments to accommodate individual articles or smaller packaging units. It is a principal object of this invention to provide an insert for a container which is adapted to divide the container into a plurality of compartments.

It is a further object to provide an insert for a container which is formed from a one-piece blank of foldable sheet material, such as corrugated paperboard, and which can be set-up without the use of extraneous means, such as glue or staples.

Another object is to provide an insert for a container having means to reinforce the side walls of the container.

A further object is to provide an insert for a container having means to reinforce the corners of the container.

Another object is to provide an insert for a container having means to anchor the insert in the container.

It is further often desirable to provide a container with compartments in two or more tiers. It is, therefore, still another object of the invention to provide a plurality of inserts for a container which are adapted to divide the container into a plurality of compartments in two or more tiers.

It is a further object to provide a plurality of inserts for a container having means to reinforce the side walls and corners of the container and means to anchor the inserts in the container.

Another object is to provide a plurality of inserts for a container having means to support the inserts stacked one atop the other to form a tier effect and to lock the stacked inserts in place.

Other objects and advantages will appear from the following description and drawings, in which:

FIG. 1 is a plan view of a blank from which an insert of this invention is made;

FIG. 2 is a perspective view of two inserts in accordance with FIG. 1 (the uppermost insert being shown partly assembled; the lowermost insert being shown fully assembled), one overlying the other in position to be stacked one atop the other;

FIG. 3 is a perspective view of a container showing inserts in accordance with FIG. 2 positioned therein;

FIG. 4 is a fragmentary perspective view of a blank from which a modified version of the insert of the present invention is made; and,

FIG. 5 is a fragmentary perspective view showing the corner of the insert formed from the blank of FIG. 4.

The insert **40** shown in FIGS. 2 and 3 is formed from a one-piece blank **1** (FIG. 1) of suitable sheet material, preferably corrugated paperboard. It may also be constructed from other materials, such as heavy paper or paperboard, depending upon the requirements of use.

The blank **1** has longitudinal and transverse fold lines **2** and **3** and longitudinal and transverse slits **4** and **5** which generally define bottom parts (including first and second bottom panels **6** and **7**), partition parts (including first and second transverse partition panels **8** and **9** and first and second longitudinal partition flaps **10** and **11**), side parts (including first, second, third and fourth side panels **12, 13, 14** and **15**), corner parts (including first, second, third and fourth corner flaps **16, 17, 18** and **19**) and end parts (including first, second, third and fourth end flaps **20, 21, 22** and **23**).

Means are provided to interlock the partition parts, for a purpose further to be described, in the form of slots **24** in partition panels **8** and **9** and slots **25** in partition flaps **10** and **11**. Slots **24** extend inwardly from the upper edges **8***a* and **9***a* of the partition panels **8** and **9** and approximately one-half way therethrough and slots **25** extend inwardly from the lower edges **10***a* and **11***a* of the partition flaps **10** and **11** and approximately one-half way therethrough. The ends of the slots **25** are preferably tapered or beveled as indicated at **26** so that the slots **25** may be mated with the slots **24** with greater ease when the insert is being set-up.

The partition panels **8** and **9** may be cut, as at **27**, to provide stacking and locking tabs **28** which are adapted to be received in suitable openings or cut-outs **29** in the bottom panels **6** and **7** of a like insert when arranged one atop the other.

To assemble the insert from the blank of FIG. 1, the blank is folded along the transverse fold lines **3***a*, **3***b*, and **3***c* so as to bring the partition panels **8** and **9** into abutting contact with each other and perpendicular to the bottom panels **6** and **7**. The partition flaps **10** and **11** are then folded perpendicular to the side panels **12** and **13** and as the side panels **12** and **13** are folded perpendicular to the bottom panels **6** and **7**, the downwardly opening slots **25** in the partition flaps **10** and **11** are tucked into the upwardly opening slots **24** of the partition panels **8** and **9** to interlock the partition parts as shown in FIG. 2. In their fully assembled condition the partition panels **8** and **9** are perpendicular to the partition flaps **10** and **11** and the partition panels and flaps are perpendicular to the bottom panels **6** and **7**.

The side panels **14** and **15** are then folded perpendicular to the bottom panels **8** and **9** and the corner flaps **16, 17, 18** and **19** are folded inwardly at a slight angle to the side panels **12, 13, 14** and **15** so as to overlie the corners of the bottom panels **6** and **7**. Then the end flaps **20, 21, 22** and **23** are folded perpendicular to the bottom panels **6** and **7** and into contact with the free edges of the corner flaps **16, 17, 18** and **19**, to complete the assembly of the insert.

The assembled insert **40** may now be inserted into a container to divide it into compartments. The container may be a regular slotted container, as shown at C in FIG. 3, having side walls **30**, end walls **36** and top and bottom closing means including top closing flaps **31** and bottom closing flaps (not shown). However, the insert is adapted for use with any rectangular container which is loaded through its top.

A single insert divides the container into four compartments in one tier. If more than one tier of compartments is desired, like inserts are stacked one atop the other until the desired number of tiers is obtained.

Referring to FIG. 2, the ease with which inserts are stacked and locked in a stacked position as a result of their unique construction is readily apparent. It is only necessary to insert the tabs **28** cut from partition panels **8** and **9** in the lowermost insert into the openings **29** in the bottom panels **6** and **7** in the insert stacked on it to stack them one on the other and lock them together.

Two inserts stacked one atop the other in this manner are shown in position in the container C in FIG. 3. Thus positioned, they divide the container into two tiers of four compartments each.

When stacked one atop the other, the upper edges of the panels **12, 13, 14** and **15** and the flaps **16, 17, 18** and **19** of the lowermost insert provide stacking support at the sides and corners for the insert placed on it. This support combined with the support provided along the longitudinal and transverse centers by the partition panels **8** and **9** and the partition flaps **10** and **11** is more than ade-

quate to handle the vertical loads to which the lowermost inserts are subjected.

The inserts are further provided with anchoring flaps **20, 21, 22** and **23** which enable them to fit snugly within the container.

When the container has been loaded with its contents, the top flaps **31** are folded perpendicular to the side walls **30** to close the container. To further hold and lock the insert or inserts in position in the container and particularly the partition panels **8** and **9** and partition flaps **10** and **11** perpendicular to the bottom panels **6** and **7** and to each other, the inner top flaps **31***a* are provided with cut-outs **32** which are adapted to receive the tabs **28** of the uppermost insert to lock it in place.

In a preferred embodiment where a single insert is being used to divide a container into compartments in one tier, the height of the insert is substantially the same height as the side walls of the container. And where two or more inserts are used to provide compartments in two or more tiers, the inserts are preferably dimensioned so that the sum of their heights is substantially equal to the height of the container side walls. For example, if two inserts are used, the height of each would be substantially one-half the height of the container side walls.

A modification **41** of the insert is shown in FIGS. 4 and 5. It is identical to the insert **40** except that the corner parts have been changed slightly. Additional longitudinal fold lines **2***a* and cut-outs **42** have been provided to divide the corner flaps into inwardly and outwardly directed flap sections, such as **19***a* and **19***b*. Although it takes slightly longer to set-up flaps **19** in insert **40**, these inwardly and center directed flaps provide more support at the corners of the insert.

What is claimed is:

1. In combination, a container and an insert formed from a one-piece blank of sheet material therein, said container having side and end walls and top and bottom closing means, said insert comprising bottom parts including first and second bottom panels, partition parts including first and second transverse partition panels and first and second longitudinal partition flaps and side parts including first and second side panels, said blank having longitudinal and transverse fold lines hingedly connecting said bottom, partition and side parts to each other, each of said partition panels having a slot extending inwardly from its upper edge, each of said partition flaps having a slot extending inwardly from its lower edge, said partition panels being folded into abutting contact with each other and perpendicular to said bottom panels, said side panels being folded perpendicular to said bottom panels, said partition flaps being folded perpendicular to said side panels and said slots in said partition flaps being tucked into said slots in said partition panels to interlock said partition parts, said top closing means consisting of inner and outer top closing flaps, each of said inner flaps having means defining an opening therein and each of said partition panels having means defining a locking tab along its upper edge, said tabs along the upper edges of said partition panels of said insert being received in said openings in said inner top flaps of said container.

2. In the combination as set forth in claim **1**, said side panels of said insert and said side walls of said container being of substantially equal height and said side panels being in abutting contact with said side walls.

3. In combination, a container and at least two like inserts each formed from a one-piece blank of sheet material and stacked one atop the other therein, said container having side and end walls and top and bottom closing means, each of said inserts comprising bottom parts including first and second bottom panels, partition parts including first and second transverse partition panels and first and second longitudinal partition flaps and side parts including first and second side panels, said blank having longitudinal and transverse fold lines hingedly connecting said bottom, partition and side parts to each other, each of said partition panels having a slot extending inwardly from its upper edge, each of said partition flaps having a slot extending inwardly from its lower edge, each of said bottom panels having means defining an opening therein, each of said partition panels having means defining a locking tab along its upper edge, said partition panels being folded into abutting contact with each other and perpendicular to said bottom panels, said side panels being folded perpendicular to said bottom panels, said partition flaps being folded perpendicular to said side panels, said slots in said partition flaps being tucked into said slots in said partition panels to interlock said partition parts, said tabs along the upper edges of said partition panels of the lowermost of said inserts being received in said openings in said bottom panels of said insert stacked on it and the upper edges of said partition panels and flaps and said side panels of the lowermost of said inserts being in abutting contact with the portions of said bottom panels of said insert stacked on it.

4. In combination, a container and an insert formed from a one-piece blank of sheet material therein, said container having side and end walls and top and bottom closing means, said insert comprising bottom parts including first and second bottom panels, partition parts including first and second transverse partition panels and first and second longitudinal partition flaps, side parts including first, second, third and fourth side panels, and corner parts including first, second, third and fourth corner flap sections, said blank having longitudinal and transverse fold lines hingedly connecting said bottom, partition and side parts to each other, each of said partition panels having a slot extending inwardly from its upper edge, each of said partition flaps having a slot extending inwardly from its lower edge, said partition panels being folded into abutting contact with each other and perpendicular to said bottom panels, said side panels being folded perpendicular to said bottom panels, said partition flaps being folded perpendicular to said first and second side panels, said corner flap sections being folded inwardly and outwardly to overlie portions of said bottom panels and said slots in said partition flaps being tucked into said slots in said partition panels to interlock said partition parts, said top closing means consisting of inner and outer top closing flaps, each of said inner flaps having means defining an opening therein and each of said partition panels having means defining a locking tab along its upper edge, said tabs along the upper edges of said partition panels of said insert being received in said openings in said inner top flaps of said container.

5. In the combination as set forth in claim **4**, said side panels and said corner flap sections of said insert and said side walls of said container being of substantially equal height and said side panels being in abutting contact with said side walls.

6. In combination, a container and at least two like inserts each formed from a one-piece blank of sheet material and stacked one upon the other therein, said container having side and end walls and top and bottom closing means, each of said inserts comprising bottom parts including first and second bottom panels, partition parts including first and second transverse partition panels and first and second longitudinal partition flaps, side parts including first, second, third and fourth and corner parts including first, second, third and fourth corner flap sections, said blank having longitudinal and transverse fold lines hingedly connecting said bottom, partition, side and corner parts to each other, each of said partition panels having a slot extending inwardly from its upper edge each of said partition flaps having a slot extending inwardly from its lower edge, each of said bottom panels having means defining an opening therein, each of said partition

panels having means defining a locking tab along its upper edge, said partition panels being folded into abutting contact with each other and perpendicular to said bottom panels, said side panels being folded perpendicular to said bottom panels, said partition flaps being folded perpendicular to said first and second side panels, said corner flap sections being folded inwardly and outwardly to overlie portions of said bottom panels, said slots in said partition flaps being tucked into said slots of said partition panels to interlock said partition parts, said tabs along the upper edges of said partition panels of the lowermost of said inserts being received in said openings in said bottom panels of said insert stacked on it and the upper edges of said partition panels and flaps and said side panels of the lowermost of said inserts being

in abutting contact with portions of said bottom panels of said insert stacked on it.

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