

July 15, 1958

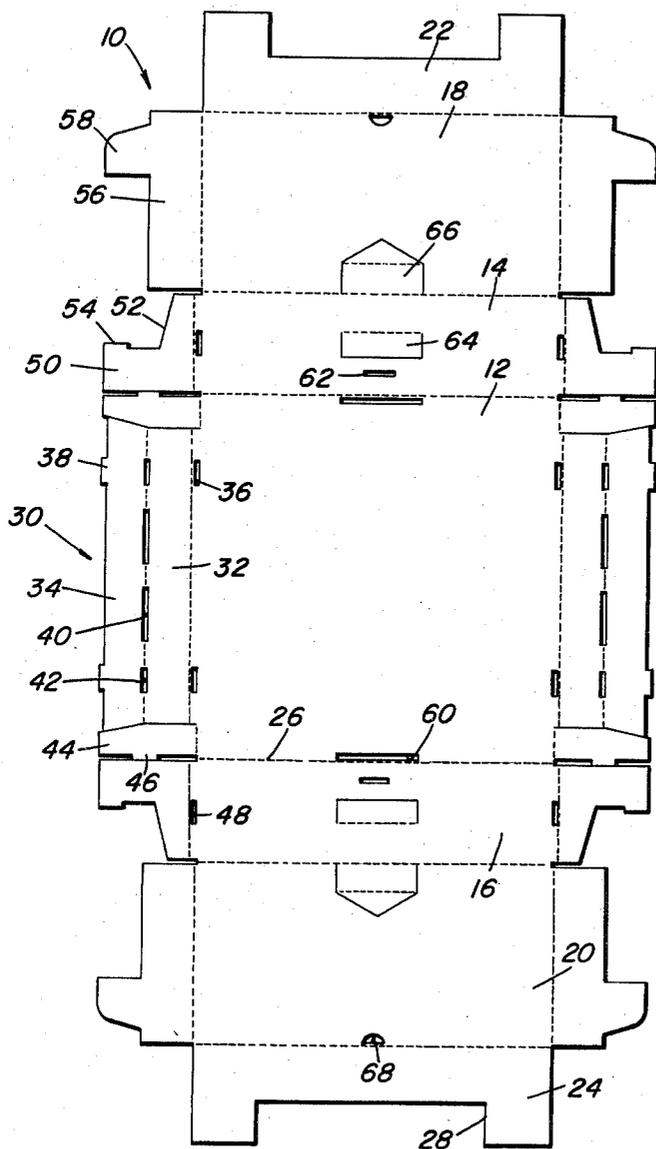
J. GOLTZ  
BOX CONSTRUCTION

2,843,307

Filed Dec. 21, 1955

4 Sheets-Sheet 1

Fig. 1



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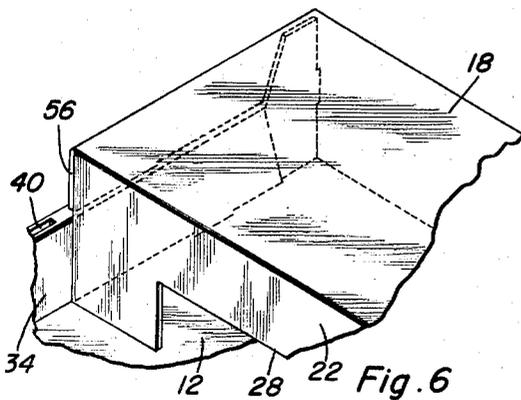
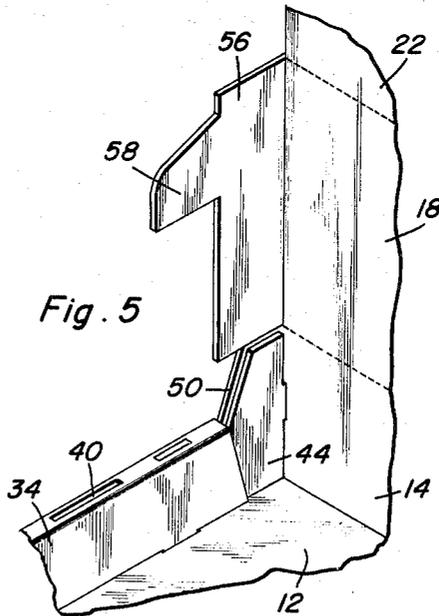
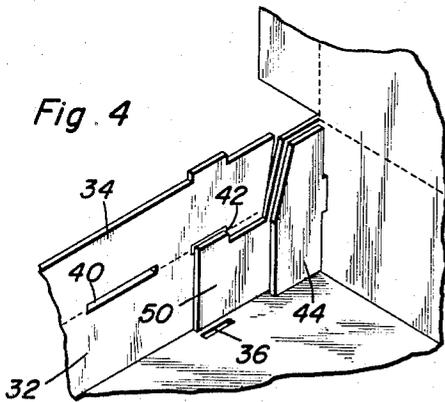
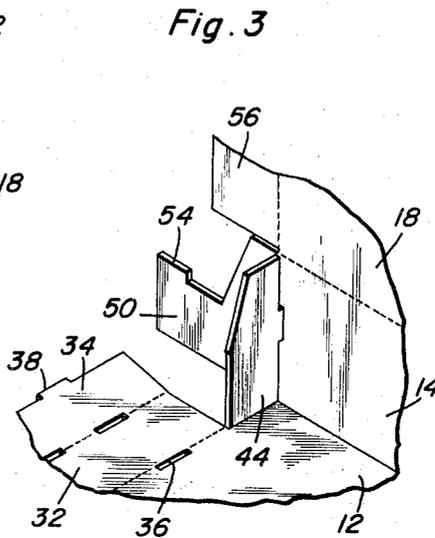
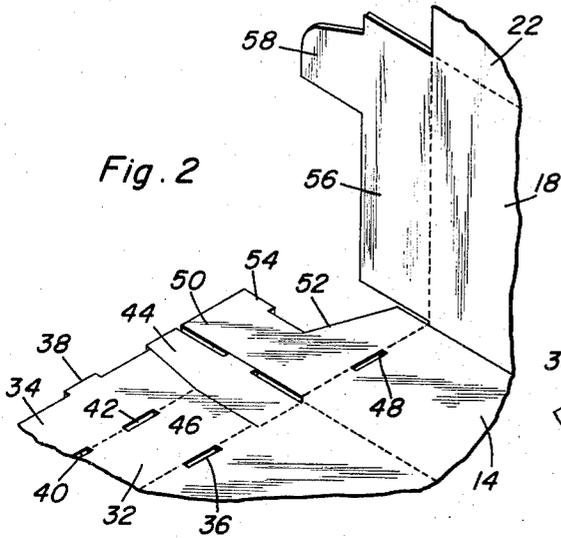
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Fig. 7

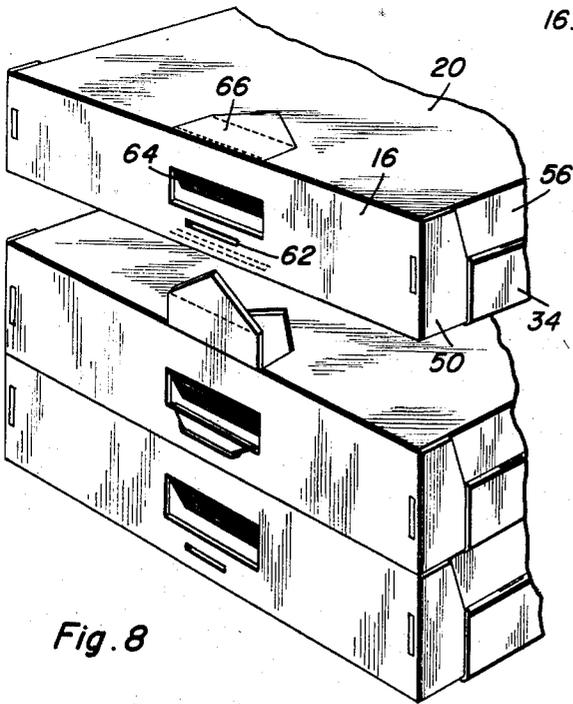
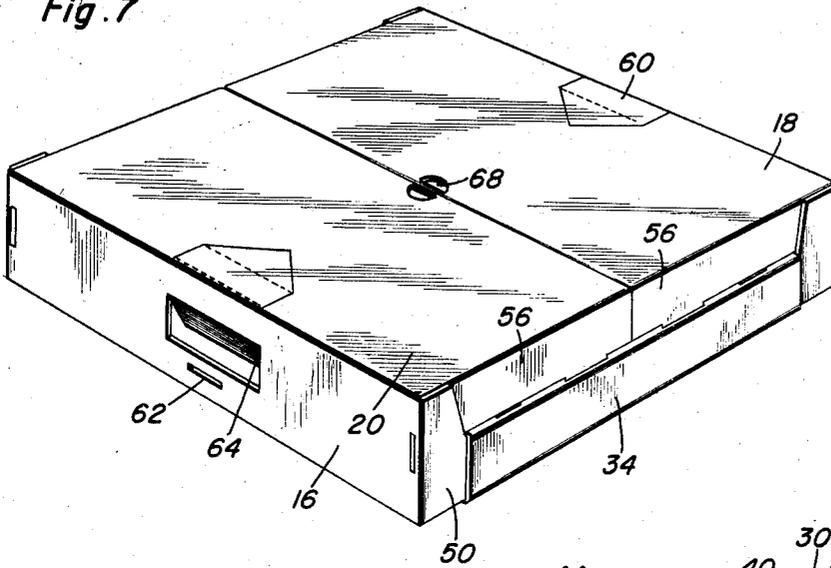


Fig. 8

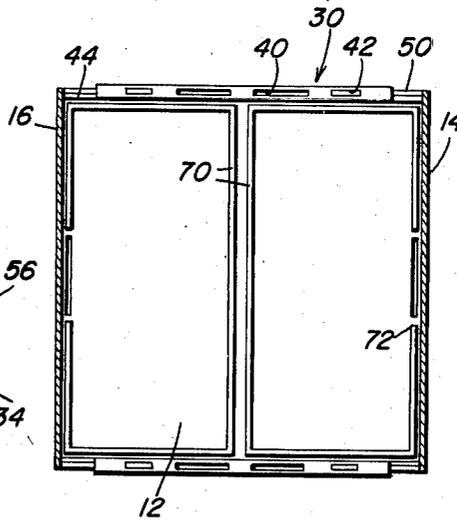


Fig. 9

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Fig. 10

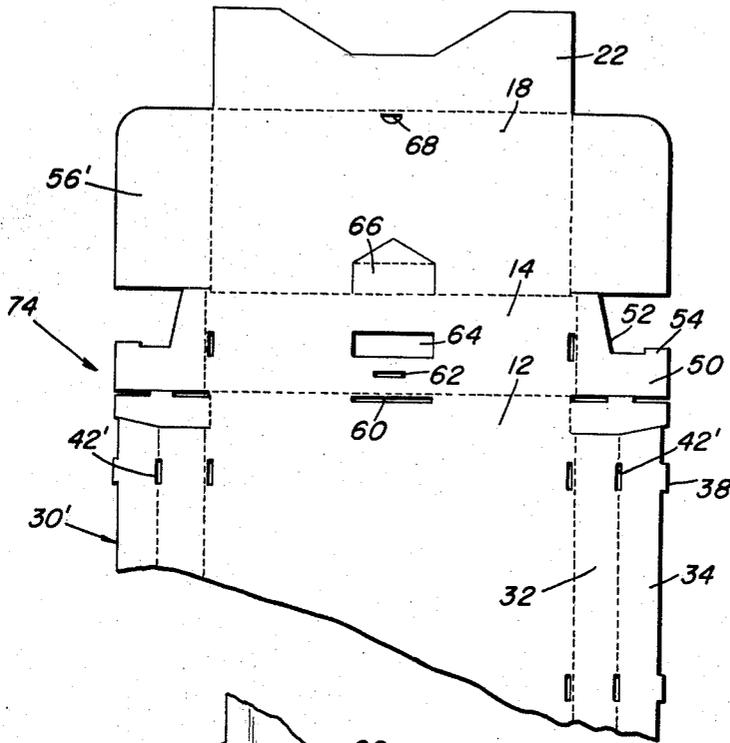


Fig. 11

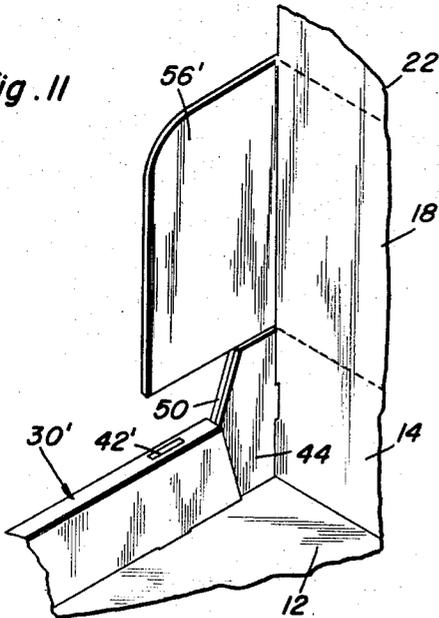
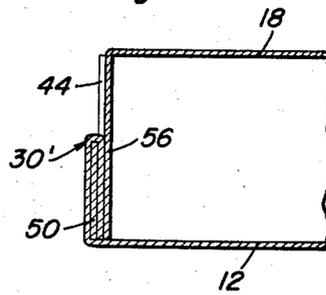


Fig. 12



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2,843,307

**BOX CONSTRUCTION**

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Application December 21, 1955, Serial No. 554,525

7 Claims. (Cl. 229—34)

This invention generally relates to an improved and novel box construction and more specifically provides a shipping container made of paper, cardboard, metallic material, plastic material or other materials feasible for the construction of containers for shipping various types of products such as those generally classified as agricultural products, machinery, furs, furniture, accessories, spare parts for various equipment and other similar articles.

An object of the present invention is to provide a box construction which is initially formed from a single blank of material which may be shipped or transported to its point of origin in a relatively small space after which the device may be folded to a set-up condition for retaining articles during shipment thereof.

Another object of the present invention is to provide a box construction which is extremely strong and uses a minimum of materials and easy to manufacture and assemble at shipping and packing points without use of stapling, gluing or the use of other fastening means.

A further object of the present invention is to provide a box construction which may be used repeatedly and employed for easy display of merchandise and which is relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a plan view of the blank of the box construction of the present invention;

Figures 2-6 are enlarged perspective views of one corner of the box illustrating the successive steps in assembling the box;

Figure 7 is a perspective view of a completed box in accordance with the present invention;

Figure 8 is a perspective view illustrating a plurality of stacked boxes illustrating the method of stacking;

Figure 9 is a plan view of the box with the top being removed illustrating the partitions therein;

Figure 10 is a partial plan view of the blank of another form of the box;

Figure 11 is a partial perspective view of the corner of the modified form of the box illustrating the assembly thereof; and

Figure 12 is a detail sectional view illustrating the side panel construction of the modified form of the box.

Referring now specifically to Figure 1 of the official drawings, the numeral 10 generally designates the blank of unitary construction from which the box of the present invention is formed. The blank 10 when in unassembled condition is of planar construction and may be disposed in stacked relation for shipment to a packaging or shipping point in a relatively small space.

The blank 10 includes a bottom forming panel 12, side forming panels 14 and 16 formed integrally with

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the opposite edges of the bottom forming panel 12. Formed integrally with the outer edges of the side forming panels 14 and 16 are top flaps 18 and 20 which are each provided with partition flaps 22 and 24 on the outer edges thereof. All of the panels and flaps 12-24 are of substantial equal length and are integrally formed and attached to each other by fold lines 26 all of which are of substantially identical construction. The side panels 14 and 16 are equal so that the top flaps 18 and 20 will overlie the bottom panel 12 in spaced parallel relation and each of the flaps 18 and 20 is generally one-half of the area of the bottom panel 12 wherein the top flaps 18 and 20 will cover the bottom panel 12. The partition flaps 22 and 24 are equal in length to the side panels 14 and 16 for positioning in depending relation to the top flaps 18 and 20 in parallel relation to the side panels 14 and 16 for engagement with the bottom panel 12 for dividing the area between the bottom panel 12 and the top flaps 18 and 20 into two equal compartments. Each of the top flaps 22 and 24 is provided with a recessed portion 28 in the outer edge thereof to permit easier assembly and disassembly of the partition flaps 22 and 24 and also to permit communication between the compartments formed by the partition flaps 22 and 24.

Formed on each end of the bottom panel 12 is an end panel generally designated by the numeral 30 which includes an inner section 32 and an outer section 34 joined together by a fold line with the inner section 32 being attached to the bottom panel 12 by a fold line similar to the fold line 26 to permit the outer section 34 to be folded inwardly into overlying relation to the inner section 32 of the end panel 30 thereby forming an end panel of double thickness.

The bottom panel 12, adjacent each edge thereof, is provided with a pair of spaced slots 36 for receiving projecting lugs 38 on the outer edge of the outer section 34 of the end panel 30 for retaining the sections 32 and 34 in overlying relation when the end panel 30 is disposed in perpendicular relation to the bottom panel 12. Also, the end panel 30 is provided with a pair of centrally disposed elongated slots 40 and a pair of outwardly disposed short slots 42 which are disposed along the fold line between the sections 32 and 34 which are facing upwardly to provide openings for a purpose described hereinafter when the end panels 30 are disposed in upstanding relation to the bottom panel 12.

At each end of the end panel 30 the bottom panel 12 is provided with a laterally projecting tab 44 which is slightly longer than the length of the end panel 30 and is provided with a projecting lug 46 on its outer edge wherein the lug 46 is adapted to be inserted into a slot 48 on the end of the side panel 14 or 16 adjacent to the tab 44. It is noted that the tab 44 is separate from the end panel 30 and is attached to the bottom panel 12 by a short fold line wherein the tab 44 may be raised to an upstanding position perpendicular to the bottom panel 12 for positioning in the slot 48 when the respective side panel 14 or 16 is raised to perpendicular relation to the bottom panel 12 thereby retaining the side panels in upstanding position.

Each of the side panels 14 and 16 are provided on each end thereof with an outwardly extending tab 50 which has a recessed portion 52 on the edge thereof remote from the bottom panel 12 with the projecting lug 54 at the outer end of the recessed portion 52. The lug 54 is adapted to engage the outermost slot 42 in the end panel 30 when the end panel 30 is folded over with the tab 50 being positioned therebetween.

Each of the top flaps 18 and 20 are provided on each end thereof with a projecting tab 56 having an elongated projecting lug 58 on the end thereof with the lug 58 being

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disposed adjacent the outer edge of the top panels 18 and 20 for reception in the elongated slots 40 from the upper edge thereof when the top flaps 18 and 20 are brought into overlying relation to the bottom panel 12.

Referring now specifically to Figures 2-6, it will be noted that the sequential steps of assembling the box from the blank 10 is illustrated. Figure 2 illustrates the initial step wherein the top panel 18 is folded upwardly to an upstanding position after which the tab 44 is folded into an upstanding position and then the side panel 14 is folded into an upstanding position and the slot 48 is brought into registry with the lug 46 on the tab 44 which will retain the tab 44 in upstanding position and also retain the side panel 14 in upstanding position. The tab 50 on the side panel 14 is then folded inwardly against the outer surface of the tab 44 and the end panel 30 including the sections 32 and 34 are folded upwardly along the old line between the end panel 30 and the bottom panel 12 against the outer surface of the tab 50 as illustrated in Figure 4. The outer section 34 of the end panel 30 is then folded inwardly and the lugs 38 are brought into registry with the slots 36 for retaining the sections 34 and 32 in overlying relation. The lug 54 on the recessed portion is engaged in the slot 42 and the slots 40 are presented upwardly substantially as illustrated in Figure 5. The tabs 56 are then folded inwardly and the elongated lug 58 thereon is received within a slot 40 and the partition flaps 22 and 24 are folded downwardly and are positioned in abutting engagement with each other for retaining the box in closed position. The box may be opened by lifting vertically on the partition flaps 22 and 24 and the cut out portion 68 therein forms a handle for such opening of the box.

Each side edge of the bottom panel 12 is provided with an elongated slot 60 adjacent the side panels 14 and 16. Each side panel 14 and 16 includes a small slot 62 adjacent and parallel to the slot 60 and also includes a cut-out lug 64 which is cut around three sides thereof to permit the lug 64 to be forced inwardly. Each top flap 18 and 20 includes a cut-out lug 66 having a generally triangular-shaped free edge which is adapted to extend upwardly for insertion into a slot 60 on a container positioned thereon in stacked relation. The triangular end portion of the lug 66 is extended outwardly through the opening formed when the lug 64 is pushed inwardly after which the pointed end of the lug 66 is inserted back through the slot 62 thereby securely interlocking the containers in stacked relation substantially as illustrated in Figure 8. Each of the top flaps 18 and 20 may also be provided with cut-outs 68 adjacent the inner edges thereof for facilitating opening of the flaps.

As illustrated in Figure 9, a pair of liners or dividers 70 may be provided which are positioned within the container and include three complete walls with the outer side walls including recesses 72 for receiving the inwardly struck lug 64 wherein the liner may have extending projections which extend in overlying relation to the inwardly struck lug 64 wherein the lug 62 will retain the liners or partitions 70 in position.

As illustrated in Figures 10-12, a modified form of the present invention is generally designated by the numeral 74 and is substantially identical in construction to that form of the invention illustrated in Figures 1-9. The only difference is that the end panels 30' are only provided with the short slots 42' and the tab 56' on the top panel does not have any lug 58. In this instance, the tab 56' is inserted behind the inner surface of the end panel 30' when it is in assembled position as illustrated in Figure 12 and the tab 56' is equal in depth to the side panels for reinforcing and completing the end panel which is of double thickness at the lower portion thereof. Other than these two changes, identical reference numerals are employed for setting forth the similar structure.

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The exposed cut edges may be laminated by paraffin, or other substances, to prevent fraying of all cut edges thereby protecting the tabs 56 and the slots from becoming frayed. Ventilation openings may be provided wherever desired in any of the panels as may become necessary in adapting the box to various uses.

It will be seen that the present invention provides a box construction which is simple to assemble and may be employed for many uses and may be constructed of various materials. The size, shape and arrangement of the various elements may be altered to adapt the box to its many and varied uses.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A container comprising a bottom, side and end panels, top flaps on the upper edges of said side panels, said end panels extending partially between the bottom panel and the top flaps, and depending end tabs on said top flaps for engagement with said end panels for forming a closure, each of said end panels including a pair of overlying sections, and a tab on each end of said side panels interlocked with said sections, each of said tabs on the side panel extending between the sections, said sections having a slot therein, and a lug on each tab on the side panels received in said slots for interlocking the tabs on the side panels with the end panels, each of said end panels having an elongated central slot therein, each of said end tabs on the top flaps having a lug extending into the elongated slot for aligning and interlocking the end panels and the end tabs on the top flaps.

2. The combination of claim 1, wherein each top flap is provided with an upstruck lug adjacent the side panels, said bottom panel having a slot at each side edge thereof for receiving the upstruck lugs from an underlying box, said side panels having openings therein for permitting outward bending of the lugs passing through the slots in the bottom panel, each of said side panels having a slot below the opening therein for receiving the free end of the upstruck lug thereby interlocking stacked containers.

3. A container comprising a bottom, side and end panel means, said bottom panel means having a slot adjacent a pair of opposite edges, said side panel means including an upwardly extending lug thereon for reception in the slots of the bottom panel means of an identical container stacked thereon thereby retaining the stacked containers in aligned relation, said side panel means including an opening therein in spaced relation to the bottom panel means, the upstanding lug on the side panel means having a vertical length longer than the distance between the bottom edge of the opening and the bottom panel means whereby the upper end portion of the lug may be bent outwardly through the opening and downwardly alongside the outer surface of the side panel means thereby interlocking the stacked containers.

4. The structure as defined in claim 3 wherein said opening in the side panel means forms a handhold for facilitating the handling of the container, said side panel means having a transverse slit therein between the bottom panel means and the bottom edge of the opening for receiving the free end of the downwardly bent end portion of the lug thereby retaining the interlocking relation between the stacked containers.

5. A container comprising a bottom, side and end panels, top flaps on the upper edges of said side panels, said end panels extending partially between the bottom panel and the top flaps, and depending end tabs on said top flaps for engagement with said end panels for form-

ing a closure, each of said end panels including a pair of overlying sections, and a tab on each end of said side panels interlocked with said end panels and being disposed between the overlying sections, said sections being vertically disposed and being joined at the upper edge thereof, the joined upper edge of said sections having a slot therein, each of said tabs on the side panels having an upwardly extending lug thereon received in a corresponding slot for interlocking the end panels and side panels, each end panel having upstanding end tabs having a lug on the outer vertical edge thereof, each end portion of each side panel having a slot for receiving said lug on the end tabs for aiding in interlocking the side panels and end panels.

6. The combination of claim 5 wherein each of said top flaps is provided with depending partition flaps having bottom edges disposed adjacent the bottom panel, each of said bottom edges having a recess for communicating the compartments formed by the partition panels.

7. The combination of claim 5 wherein each end flap on the top flaps is provided with a depending lug, said upper joined edge of the sections of the end panels having elongated slots for receiving the lugs on the end flaps thereby interlocking the end panels and end flaps.

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