

April 18, 1967

J. V. JOHNSON

3,314,587

SHIPPING CASE

Filed Oct. 14, 1965

2 Sheets-Sheet 1

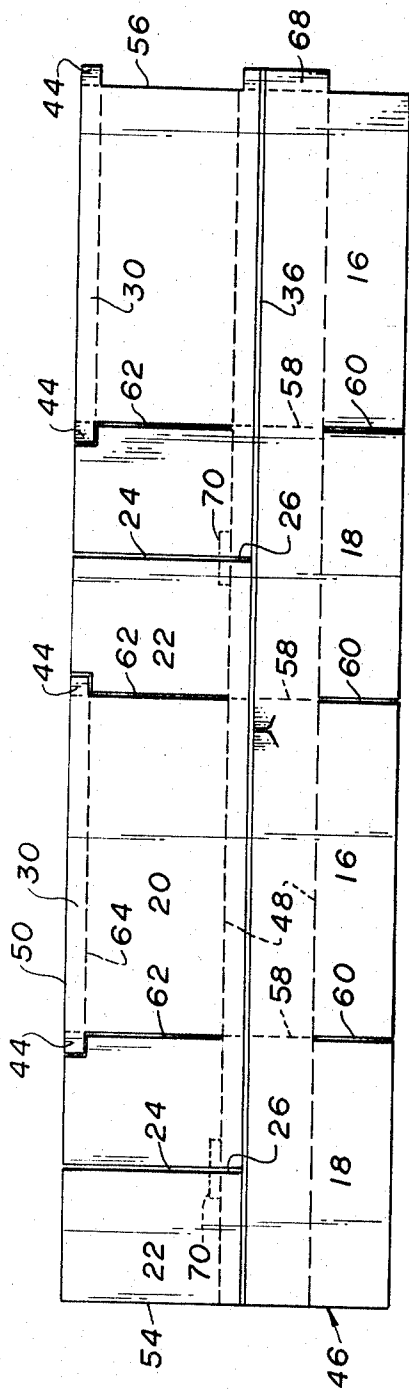


FIG. 1

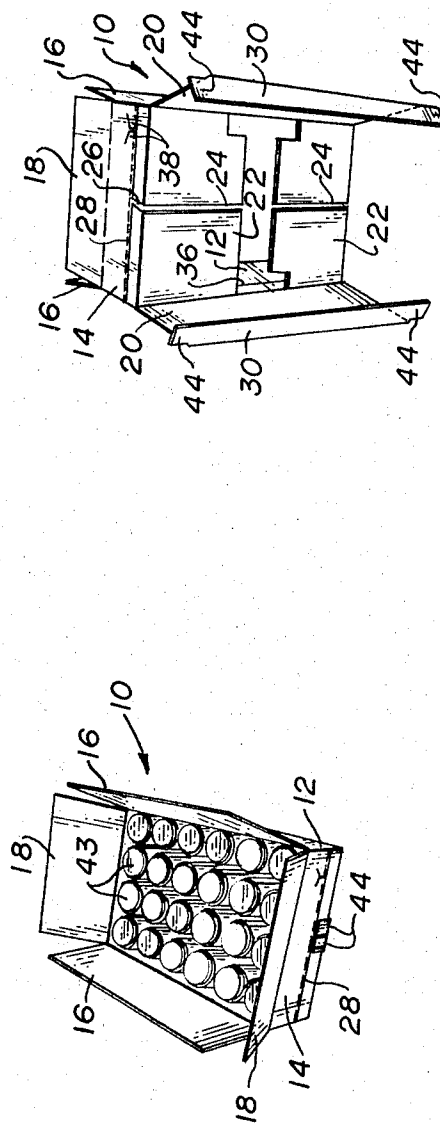


FIG. 2

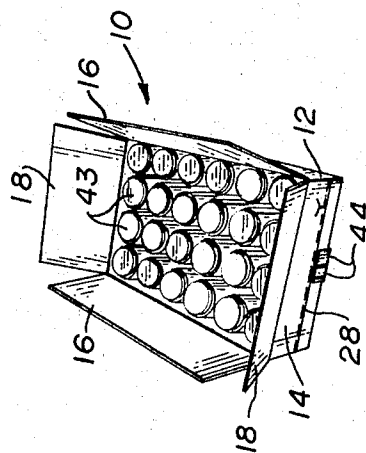


FIG. 3

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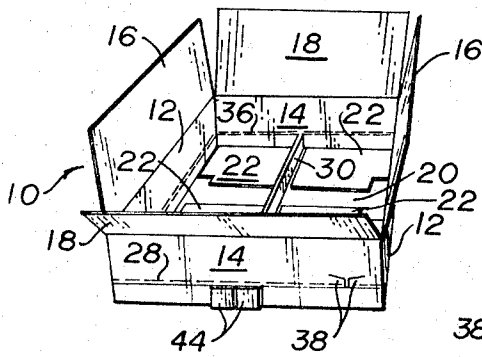


FIG. 4

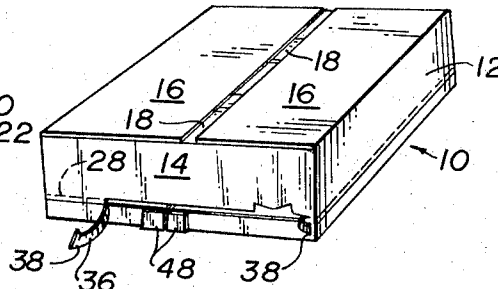


FIG. 5

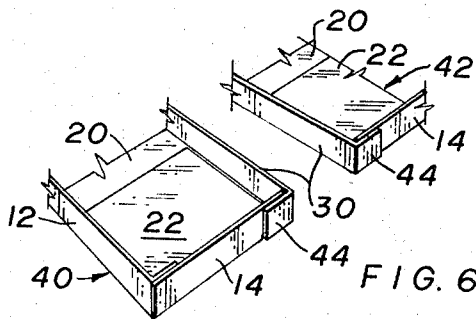


FIG. 6

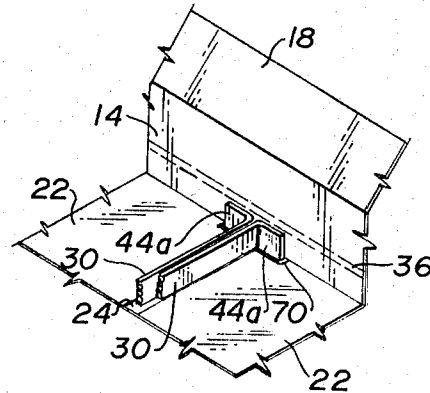


FIG. 7

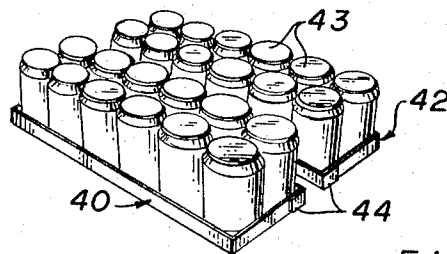


FIG. 8

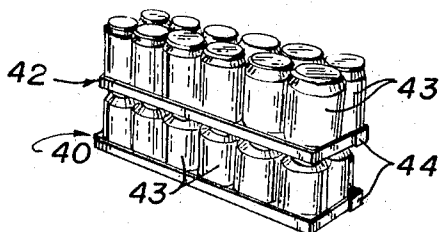


FIG. 9

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SHIPPING CASE

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Filed Oct. 14, 1965, Ser. No. 495,779
7 Claims. (Cl. 229-27)

This invention relates to a severable shipping case for articles or merchandise and, more particularly, to improvements in the shipping case disclosed in U.S. Letters Patent No. 3,043,490, issued July 10, 1962, and entitled, "Cases for Containers Severable to Form Trays."

The shipping case of this patent if formed in the usual manner for cases of this type i.e., it includes the usual panels and flaps, namely side and end panels, inner and outer bottom flaps, and inner and outer top flaps. However, it departs from conventional cases in that its outer bottom flaps have tuck-in flaps on their inner longitudinal edges which are received within central slots in the inner bottom flaps. The tuck-in flaps thus divide the case bottom into two article-receiving sections. When the side and end panels are severed along a continuous line spaced above and in close proximity to the bottom, these sections automatically form separate article-supporting trays since the lower sections of the case end panels are slotted to permit separation of the trays and to form their end walls. The tuck-in flaps, of course, form respective sides of the trays since the case outer bottom flaps now define the bottom of the trays.

Such trays are suitable for supporting various articles, especially canned goods, and in particular, jars of baby food which is a volume product. Retail grocery stores can be more easily stocked with such trays since the trays with the goods thereon can be readily moved into place on the display shelves and can be stacked to save space. Moreover, the trays keep varieties of goods together as groups for inventory purposes.

Although the trays are generally satisfactory for their intended purpose, they are oftentimes objected to because one side of each tray, namely the side formed by the tuck-in flap, is not structurally rigid inasmuch as it is connected only to the tray bottom and is independent of the tray end walls. The nature of the material forming the tray is such that, when the trays are separated, their tuck-in flaps can swing downwardly and outwardly under the weight of an article toppled to the side. Thus, during handling of the tray with articles thereon, the tuck-in flap may be relatively ineffective to retain articles thereon. Moreover, during handling, the tray bottom tends to be deformed and to depart from its desired flat condition since the corners of the tray end walls adjacent to the tuck-in flap tend to move relative to each other under the weight of the supported articles depending upon the way in which the tray is carried or supported from beneath.

The foregoing problems can be overcome by the improvements forming the subject matter of this invention, namely by connecting the end margins of the tuck-in flap directly to the tray end walls. Thus, all four corners of the tray will be reinforced by the tray sides and the tray will be more rigid, thus more effective in supporting a number of articles thereon. The foregoing improvements result from the use of tabs on the tuck-in flaps which are secured to respective tray end walls in any suitable manner, the tabs being connected to such end walls when the shipping case itself is assembled. The tabs are integral with the tuck-in flaps so that they will comprise parts of the blank used to form the case and can be provided without substantially increasing the size of the blank used to form the case in the above-mentioned patent. This can be accomplished by forming at least

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certain of the tabs from marginal extremities of the inner bottom flaps since the latter are adjacent to the outer bottom flaps before the blank is folded into the shape of case. The case having the tabs thereon can be assembled in the same manner as the case of the patent except that the tabs will be placed alongside respective end panels and secured thereto, such as by an adhesive or by stapling.

It is therefore an important object of this invention to provide improvements in a case of the type described wherein the trays formed from the opening of the case are of a more rigid construction due to the efficient use of reinforcing tabs on the tuck-in flaps forming respective tray sides and connected to the end panels so as to reinforce the junctions between the tuck-in flaps and tray end walls.

Another important object of the invention is to provide a blank for forming a shipping case whose trays are reinforced in the foregoing manner wherein the reinforcing tabs can be formed simultaneously with the formation of the other component parts of the case and with no substantial increase in size of the blank over that required to form the case of the above-mentioned patent.

Other objects of the invention will become apparent as the following specification progresses reference being had to the accompanying drawings wherein:

FIG. 1 is a plan view of the blank used to form the case;

FIG. 2 is a perspective view of the case partly assembled and showing the reinforcing tabs on the tuck-in flaps;

FIG. 3 is a perspective view of the case with one embodiment of the tabs thereon, the case having a number of articles disposed on its closed bottom prior to the closing of the top flaps thereof;

FIG. 4 is a view similar to FIG. 3 but with the articles removed to illustrate the case bottom;

FIG. 5 is a perspective view of the case when the same is completely closed;

FIG. 6 is a fragmentary, perspective view of the trays formed by opening the case with a tear strip;

FIG. 7 is a fragmentary, perspective view of the case with another embodiment of the tabs associated therewith; and

FIGS. 8 and 9 are perspective views illustrating the way in which the trays can be arranged while supporting articles thereon.

The present invention is directed to reinforce two of the four corners of a pair of trays 40 and 42 which are formed when the shipping case disclosed in U.S. Letters Patent No. 3,043,490 is severed along a continuous line extending about the case and spaced above its bottom. Such shipping case, herein denoted by the numeral 10, is formed from a suitable bendable material, such as cardboard, and is provided with the usual panels and flaps which define the sides, top and bottom thereof. To this end, case 10 is provided with a pair of side panels 12, a pair of end panels 14, a pair of outer top flaps 16, a pair of inner top flaps 18, a pair of outer bottom flaps 20 and a pair of inner bottom flaps 22. Case 10 is formed from a blank 46 of bendable material shown in FIG. 1 and hereinafter described.

Inner bottom flaps 22 have aligned centrally disposed slots 24 therein and, for one embodiment of the reinforcing structure, end panels 14 have slot extensions 26 extending upwardly from adjacent slots 24. Extensions 26 terminate at a generally horizontal, continuous line of weakness 28 extending about case 10 above its bottom.

Tuck-in flaps 30 on the inner longitudinal edges of respective outer bottom flaps 20 are arranged to enter slots 24 as case 10 is being assembled and to project upwardly

from the bottom of the case as shown in FIG. 4. Tuck-in flaps 30 divide the bottom of case 10 into two article-supporting sections which later form trays 40 and 42 when case 10 is severed along line 28. To facilitate this severing action, a tear strip 36, such as a Fiberglas monofilament tape, is affixed to the inner surfaces of side and end panels 12 and 14 coextensive with line 28 (FIG. 4) and terminates at a pair of tabs 38 on one end panel 14. By pulling one of the tabs 38 outwardly, strip 36 is caused to be successively pulled through side and end panels 12 and 14 and case 10 is thereby severed to define trays 40 and 42. The top portion of the case can then be lifted from the tray to display the articles or goods 43 thereon. FIGS. 8 and 9 illustrate how a pair of trays may be disposed with respect to each to display articles 43 thereon. Case 10 is generally placed on a supporting surface, such as a floor or table, before it is severed, whereupon the trays formed by severing case 10 are manually placed on display shelves or the like.

Trays 40 and 42 are strengthened by reinforcing the junctions between their tuck-in flaps 30 and their corresponding end panels 14. To this end, each tuck-in flap 30 is provided with a pair of tabs 44 on respective end margins thereof. Tabs 44 are integral with the corresponding tuck-in flap 30 and are formed as extensions thereof from blank 46.

Tabs 44 extend laterally from the inner surfaces of respective tuck-in flaps 30 (FIG. 6) and, when case 10 is assembled, the tabs extend through slot extensions 26 and are in juxtaposition with the outer surfaces of the adjacent end panels 14 (FIGS. 4-6).

Means is provided to connect tabs 44 to respective end panels 14 preferably before case 10 is loaded or filled with goods. As shown in FIGS. 4-6, tabs 44 are adhesively coupled to panels 14 but they could also be secured by staples, tape, stitching or the like. Generally, the outer and inner bottom flaps 18 and 20 are adhesively coupled together and, as this is being done, tabs 44 can be adhesively coupled to panels 14. Case 10 is thus ready to be filled and thereafter to be closed.

Another embodiment of the tabs, denoted by the numeral 44a, is illustrated in FIG. 7 wherein tabs 44a are connected to the inner surfaces or respective end panels 14 rather than the outer surface as in the case of the first embodiment. To utilize tabs 44a, a transverse slot extension 70 is required in each inner bottom flap 22 respectively and slot extensions 26 may be replaced with lines of weakness which permit the lower part of each end panel 14 to separate into two sections after case 10 is severed. Slot extensions 70 receive tabs 44a when case 10 is being assembled and permit the tabs to move into place alongside the inner surfaces of respective end panels 14. By placing tabs 44a inside of case 10, there are no projections on the outer surfaces of end panels 14. Hence, the tabs will not interfere with adjacent structures such as other cases when a number of cases are stacked together.

Another important feature of the invention resides in the fact that the blank used to form case 10 with tabs 44 thereon is substantially the same as the blank used to form the case disclosed in the above-mentioned patent. This feature is illustrated in FIG. 1 wherein blank 46, initially in the form of a flat, substantially rectangular sheet of bendable material, such as cardboard or the like, is stamped or otherwise cut to form the various component parts of case 10. To this end, the blank is provided with a pair of substantially parallel lines of weakness 48 between the outer longitudinal edges 50 and 52 thereof and spanning the distance between the outer end edges 54 and 56 to divide blank 46 into a central section and a pair of side sections. Three-spaced transverse lines of weakness 58 define with lines 48 the side and end panels 12 and 14. Three-spaced transverse slots 60 extending inwardly from edge 52 are aligned with respective lines 58 and terminate at the nearest line 48 to define outer and inner top flaps 16 and 18. Three-spaced transverse slots 62 also

aligned with lines 58 define outer and inner bottom flaps 20 and 22. Also bottom flaps 22 are severed to form slots 24 and end panels 14 are partially severed to define slot extensions 26.

A line of weakness 64 extending along and in close proximity to edge 50 defines tuck-in flaps 30 thereon and lines of weakness 66 at respective end margins of each tuck-in flap 30 define its reinforcing tabs 44. It is to be noted that three of four tabs 44 are formed from proximal portions of adjacent inner bottom flaps 22. As a result, inner bottom flaps 22 are notched and the corresponding tabs 44 extend into the notches, such notches being formed by extending slots 62 to edge 50 with the main or inner stretch of each slot 62 substantially coextensive with lines 58 and the outer stretch of each slot 62 angularly disposed relative to the inner stretch. As shown in FIG. 1, the outer stretch is L-shaped so that the corresponding tab is essentially rectangular or square. If desired, however, the outer stretch or each slot 62 may be different from that illustrated so that the tab formed thereby may have a configuration other than rectangular. For instance, tab 44 could be triangular by inclining the outer stretch of slot 62 with respect to its inner stretch. Tabs 44 can effectively be formed in the foregoing manner since the outer marginal edges of inner bottom flaps 22 are coextensive with edge 50. Hence, blank 46 may assume a rectangular configuration for purpose of economy and presence of the notches in flaps 22 is of no consequence, since, as shown in FIG. 4, the material removed from the notches is not needed in the formation of case 10.

The fourth tab 44 projects outwardly from end edge 56 in the same direction as a tab 58, the latter being provided to join the proximal side panel 12 to the adjacent end panel 14 when case 10 is being assembled. Tab 68 is adhesively or otherwise secured to the inner surface of the last mentioned end panel 14.

In assembling case 10, blank 46 is folded or bent along lines 48, 58 and 64, tabs 44 remaining coplanar with flaps 30. Tab 68 is first secured to the proximal end panel 14 so that the main body of case 10 is initially formed. Inner bottom flaps 22 are then folded inwardly, followed by the inward folding of outer bottom flaps 20. Tuck-in flaps 30 are simultaneously directed into and through slots 40. During this step, tabs 44 being coplanar with corresponding tuck-in flaps 30, are received within slot extensions 26. Thereafter, tabs 44 are folded or bent along lines 66 into their operative positions (FIG. 4) whereupon they are adhesively or otherwise connected to respective end panels 14. Case 10 is then ready to receive articles and, following the placement of articles therewithin, inner and outer top flaps 16 and 18 are closed and adhesively or otherwise joined together. The case is then ready for shipment or storage.

If the embodiment of FIG. 7 is utilized, slot extensions 26 may or may not be formed in blank 46. However, in the absence of slot extensions 26, at least a line of weakness is provided to facilitate the separation of each end panel 14 into two sections to define trays 40 and 42 when case 10 is opened along line 28. To facilitate the assembly of the case using tabs 44a, transverse slot extensions 70 are formed simultaneously with the formation of slots 24. Thus, during assembly, tabs 44a are initially folded along lines 66 before tuck-in flaps 30 enter slots 24. As tuck-in flaps 30 move through slots 24, tabs 44 move through slot extensions 70 whereupon such tabs may thereafter be adhesively or otherwise connected to the inner surfaces of adjacent end panels 14.

While several embodiments of the present invention have been shown and described it will be obvious that other adaptations and modifications may be made without departing from the true spirit and scope of the invention.

What is claimed is:

1. In a shipping case having a bottom portion including side and end panels, outer and inner bottom flaps hingedly secured to respective side and end panels, and an

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upturned tuck-in flap on each outer bottom flap respectively along its inner longitudinal edge with said inner bottom flaps having aligned slots therein receiving the tuck-in flaps of said outer bottom flaps and said tuck-in flaps being in substantially spanning relationship to said end panels, the end margins of said tuck-in flaps forming tabs, said tabs being folded over in face-to-face relationship to respective end panels, and means securing said tabs to said end panels.

2. In a shipping case as set forth in claim 1, wherein said tabs are in juxtaposition with the inner surfaces of respective end panels, each of said inner bottom flaps being provided with a second slot transverse to the first mentioned slot thereof to permit said tabs to move into juxtaposed relationship to said inner surfaces when the tuck-in flaps are received within said first mentioned slots.

3. In a shipping case as set forth in claim 1, wherein each end panel has a slot extension along said line, said tuck-in flaps extending through corresponding slot extension and said tabs being in juxtaposition with the outer surfaces of respective end panels.

4. A blank for forming a shipping case of the type having opposed side and end panels, opposed inner and outer bottom flaps, opposed inner and outer top flaps, and a pair of tuck-in flaps on the inner longitudinal edges of respective outer bottom flaps with each tuck-in flap being received within aligned slots in said inner bottom flaps and having means securing the tuck-in flap to adjacent end panels at locations thereon permitting the side and end panels to be severed along a continuous line spaced above the bottom flaps to define a pair of separable article-supporting trays, said blank comprising: an elongated, initially flat sheet of bendable material provided with a pair of generally parallel, longitudinally extending lines of weakness defining a central section and a pair of side sections, said central section having three-spaced, transverse lines of weakness spanning the distance between said pair of longitudinally extending lines of weakness to define said side and end panels, each side section having a transverse slot aligned with each transverse line of weakness respectively, whereby one of said side sections defines said

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inner and outer bottom flaps and the other of said side sections defines said inner and outer top flaps, said inner bottom flaps being transversely severed to define said slots thereof, each of said outer bottom flaps having a longitudinally extending line of weakness adjacent to and spaced from the proximal outer longitudinal edge of the sheet and a pair of spaced, transverse lines of weakness extending between the last mentioned longitudinally extending line and said proximal outer edge to define the corresponding tuck-in flap and a pair of projections at respective end margins thereof, said projections presenting said securing means of the tuck-in flap.

5. A blank as set forth in claim 4, wherein each of said transverse slots in said one section presents a side marginal edge for each of the adjacent inner and outer bottom flaps, the last mentioned inner bottom flap having a notch therein at the outer extremity thereof, the projection of the last mentioned outer bottom flap extending into the notch of said last mentioned inner bottom flap.

6. A blank as set forth in claim 4, wherein each of said transverse slots in said one side section is provided with an inner stretch and an outer stretch, said outer stretch being disposed at an angle with respect to said inner stretch and extending away from the adjacent outer bottom flap to define the corresponding projection for the last mentioned outer bottom flap and to present a notch for receiving the last mentioned projection.

7. A blank as set forth in claim 4, wherein said sheet is substantially rectangular and provided with an outer end edge, one of the projections extending laterally from said outer end edge.

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