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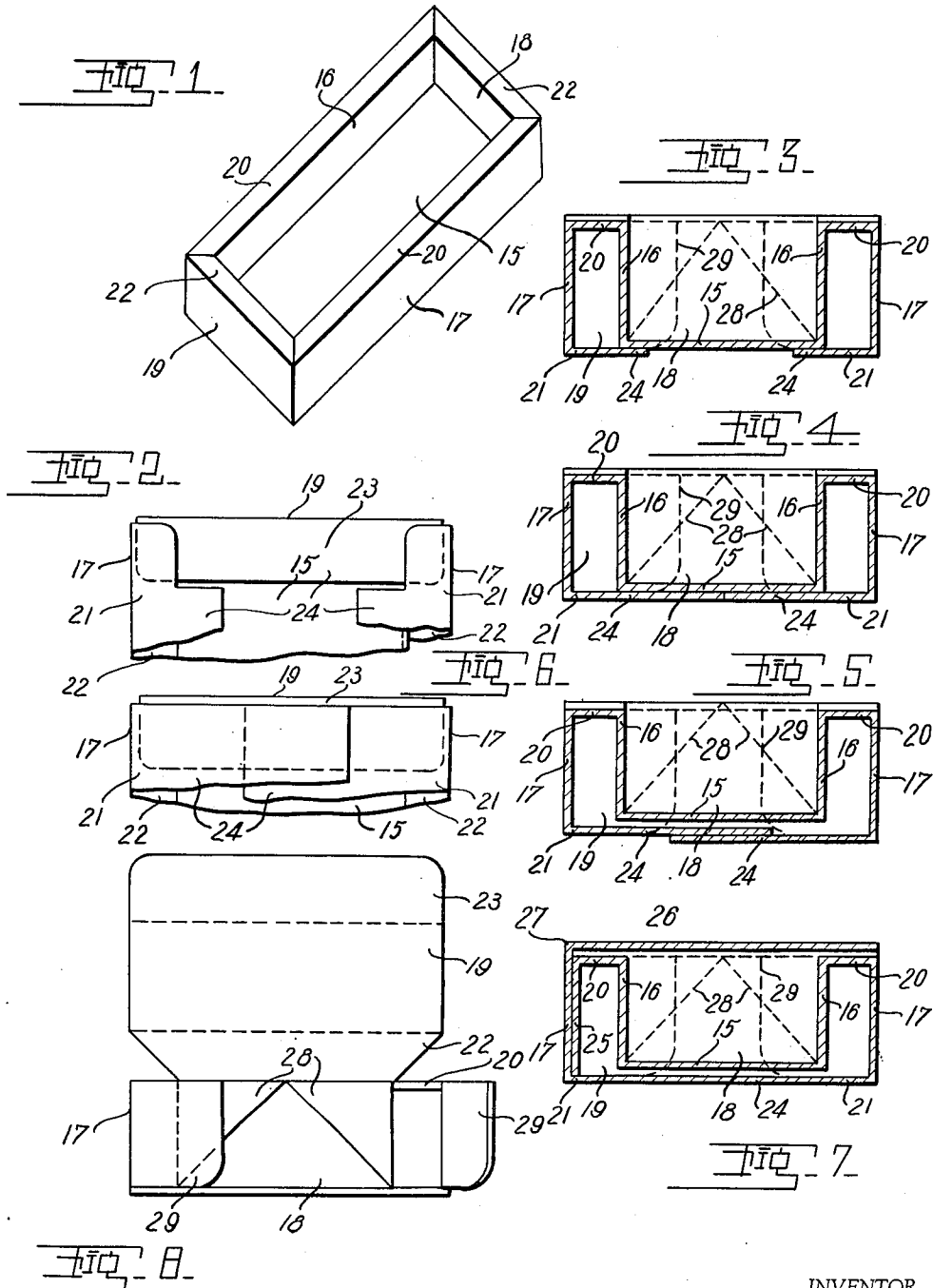
W. G. FREEL ET AL

2,581,400

CARTON

Original Filed Jan. 21, 1941

3 Sheets-Sheet 1



BY

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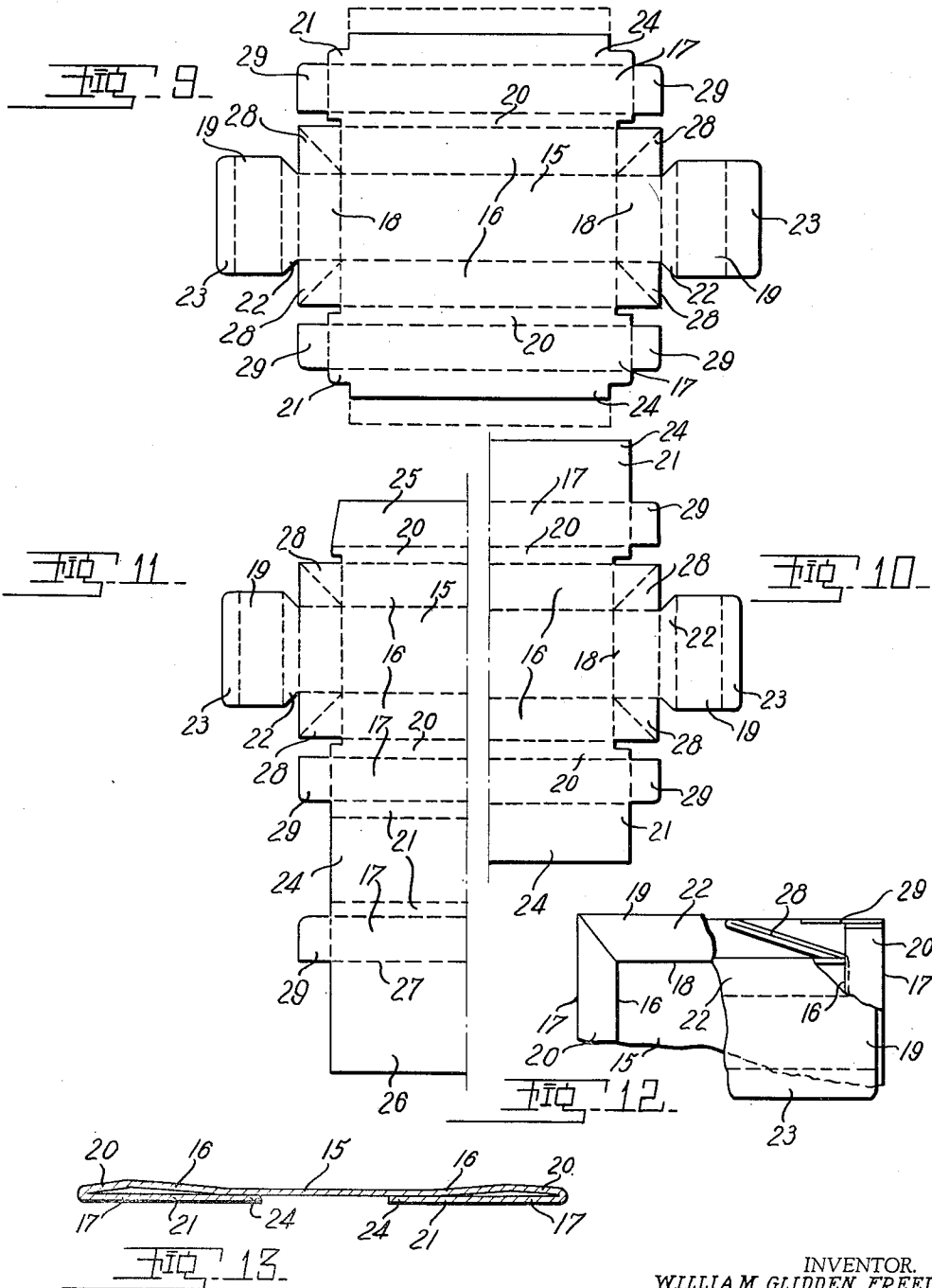
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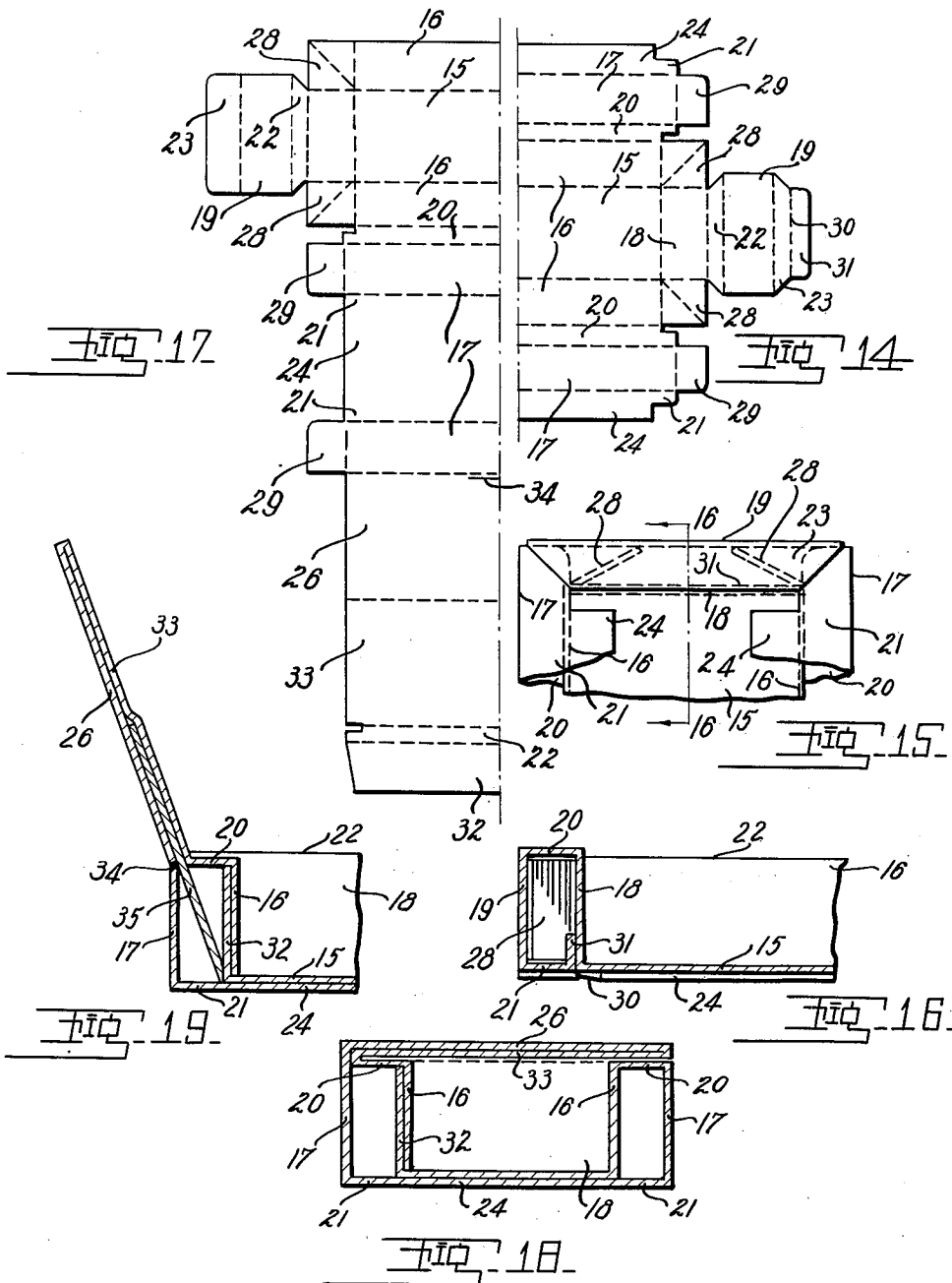
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UNITED STATES PATENT OFFICE

2,581,400

CARTON

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Original application January 21, 1941, Serial No.
375,306. Divided and this application September 9, 1947, Serial No. 772,972. In Canada January 19, 1940

3 Claims. (Cl. 229—33)

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This application is a division of pending application Serial No. 375,306 filed January 21, 1941, for Cartons, now Patent No. 2,447,243.

Our invention relates to cartons, more particularly to cartons of the foldable or collapsible type usually supplied in the flat by the manufacturer and erected or set up by the packer. Specifically it is related to that type of carton having double walls with air space and to cartons having double walls without air space.

One of the objects of our invention is to provide a carton of the above-mentioned style having neater ends and more finished appearance generally.

Another object is to provide a carton made up from a blank on which printing and/or other finish desired need be impressed on one of its faces only no matter where it is to appear on the set up carton.

Another object of our invention is to provide a carton which may be made up from a blank having one finished side only and yet designed that only this finished surface will appear throughout the carton resulting in a product of good appearance made economically by the use of the thus permitted cheaper material.

A further object is to provide a more sturdy carton generally, having stronger ends the inner section of which need not be provided with lateral locking means as is the case in cartons of this type made according to common practice and a carton having additional infolded corners.

A still further object by no means of lesser importance is to provide a carton which may be set up much more quickly than is possible with other cartons of this nature.

Other objects as well as many advantages of our invention will become apparent in the following description thereof supplemented by drawings illustrating a true embodiment thereof.

As in the other cases above referred-to the carton is formed from a single blank, which of course includes more than one piece of material joined together if the carton were to be of exceptional size. One of the differences, however, lies in the fact that the bottom inside surface as well as the inner and outer visible surface of the double walls exhibit the one surface of the blank so that a blank may be printed on one face and in one operation for matter to appear on any of the above-mentioned surfaces when erected. The same applies to the underside of the carton either wholly or partly, depending as to whether the bottom is wholly doubled or partly doubled in the manners hereinafter elucidated.

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Another departure from previous forms resides in the location in the blank of the inner and outer wall sections with respect to the bottom. In the former practice the outer side of the double wall followed the bottom portion after being defined by a crease and the bottom extended underneath the wall. In the present case the inner wall section is adjacent the bottom section integrally, and is followed by the top spacing portion and outer wall-section which in turn is followed by the lower wall-spacing section which is continued to form either the complete or partially doubled bottom. One important result of this construction is that the side walls and the end walls are for all intents and purposes identical and that all four inside surfaces form a continuous wall integrally adjacent the bottom.

In the drawings:

Fig. 1 is a perspective view of a carton according to this invention fully erected;

Fig. 2 is a view of one end thereof as seen from the underside showing the end joint when the bottom is only partly doubled;

Fig. 3 is a cross-sectional view thereof, bottom partly doubled;

Fig. 4 is a cross-sectional view corresponding to Fig. 3 but for its fully doubled bottom;

Fig. 5 is a cross-sectional view of the carton also showing a modified form of fully doubled bottom;

Fig. 6 is an underside view of one end of the carton corresponding to Fig. 5 showing the thus simplified end joint;

Fig. 7 is a cross-sectional view of the carton corresponding to some extent Fig. 6 so far as the fully doubled bottom is concerned but modified so as to provide an integral flap cover therefor;

Fig. 8 is an end view of the carton at one stage or erection thereof;

Fig. 9 is a plan view of the carton blank corresponding to Fig. 3, the dotted lines showing its extended form to correspond to Fig. 4;

Fig. 10 is a plan view of one half of the blank required for a carton corresponding to Fig. 5;

Fig. 11 is a plan view of one half of the blank required for a carton having a cover flap and corresponding to Fig. 7;

Fig. 12 is a top view of one end of the carton with outer section of the end wall being split in two, one of the split portions being turned back to show an inner detail;

Fig. 13 is a cross-section of a typical carton in the flat.

Fig. 14 is a plan view of one half of a blank

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similar to Fig. 9 but modified so that the end wall is more securely held in position.

Fig. 15 is a view similar to Fig. 6, that is, a plan view of the underside of a carton formed from the blank of Fig. 14;

Fig. 16 is a cross-sectional view through Fig. 15 taken on line 16—16 on said Fig. 15;

Fig. 17 is a plan view of one half of a blank somewhat similar to Fig. 11 but for providing a double thickness cover whereby the same finished surface is visible on the outer side of the cover as well as the underside thereof.

Fig. 18 is a cross sectional view similar to Fig. 7 but of a carton made from the blank of Fig. 17.

Fig. 19 is a fragmentary sectional view of certain parts of Fig. 18 but showing the cover as retained in an open position.

Similar reference numerals denote identical parts throughout the drawings, and although difference is alluded to ends and sides it is to be noted that these statements are for reference purposes only since in practice all sides may be made equal in length or again the longer walls may correspond, so far as their construction or that part of the blank used are concerned to what are termed ends and vice versa throughout this specification and claims.

Referring to the drawings 15 denotes the inner bottom or in any event the bottom, 16 the inner section of the side walls, 17 the outer section of the side walls, while 18 and 19 denote the inner sections and outer sections respectively of the end walls. The upper sections and lower sections of the side walls are denoted by numerals 20 and 21 respectively. The end wall upper and lower sections are denoted by numerals 22 and 23 respectively, the latter also serving as a tab to removably fasten the outer end walls to the bottom.

It is to be noted that all sections of the carton are formed by bends defined by creases impressed in the blank shown in the illustration by means of dashes.

The ends of portions 22 are cut at an angle of 45° giving a mitered frame appearance to the carton as shown in Fig. 1.

Referring to Figs. 2, 3 and 9, it will be seen that a narrow portion 24 of the blank follows the lower wall sections 21. These narrow portions are fastened to the under-side of the inner bottom preferably by means of adhesive. Their reduced length, as compared to sections 21 provide space for portion 23 when inserted thereunder in the erection of the carton and in addition provide stops therefor as shown in Fig. 2. If and when the carton is to have a full doubled bottom, portions 24 are made wider as indicated in Fig. 9 by dotted lines, which portions meet along their outer edge when adhesively or otherwise fastened to the inner bottom section as shown in Fig. 4. By providing portions 24 in still wider form as in the blank in Fig. 10, they may be adhesively joined together beneath the inner bottom as shown in Fig. 5 so that they need not be cut short for portions 23 of the ends which may be inserted between the inner bottom and the thus formed separate outer bottom.

By modifying the last-named form, Fig. 10, to that shown in Fig. 11, by removing the outer and lower side wall sections from one side of the blank and providing a portion on the other side thereof comprising sufficient material to include said removed sections as well as full outer bottom section, a carton having a cover as shown in

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Fig. 7 may be provided. To arrive at this, a tab 25 is provided instead of the removed outer wall section which is joined to the shifted outer wall section on the side of the box as shown in Fig. 7 and a portion 26 is added integral to the blank next to the shifted outer wall section adapted to fold over the carton on crease 27. In the blank all inner wall sections are joined together by squares 28 which have an angular crease permitting this square portion to be folded in two when the carton is erected then folded in that space between the end wall sections thereby holding the walls together, see Fig. 12. For better corner finish and enhanced rigidity the outer side wall sections are provided with tabs 29 folded inwardly of the bottom end walls.

In the making of the cartons, portions 24 of the blank are fastened to portions 15 while the same are in the flat as shown in Fig. 13. All that is necessary to be done on the part of the user to erect the carton is to raise up the double sides, fold in corners 28 and flaps 29, bend over the end outer wall sections and insert tabs 23 between the inner and outer bottoms. The assembly procedure for the modified forms shown in section in Figs. 4, 5 and 7 is so obvious that specific explanation is deemed unnecessary.

By modifying the blank shown in Fig. 9 to that shown in Fig. 4 a more secure fastening of the end wall is obtained. This modification consists in providing the end wall bottom portion 23 with a crease 30 and reducing the width of the portion 23 to that of the inside bottom 15 thereby providing a tucking tab 31.

By this construction the end wall bottom portion 23 instead of being tucked under the side wall bottom portions 24 is turned down and tucked within the space between the inner and outer sections of said end wall and held in place by the in-fold corners 28, all of which is illustrated in Figs. 15 and 16. With this latter construction there is no danger of the end wall bottom portion 23 being released should the carton be slid along a support on its bottom and inadvertently striking an obstruction as would be the case with a construction such as disclosed in Fig. 6. This result is attained because the said end wall bottom is now flush with the carton bottom and securely retained by the in-folding of tab 31.

The blank of Fig. 17 is obtained by a further shifting of the sections of the blank of Fig. 9 beyond that done in Fig. 11 over Fig. 9. In other words the tab 25 of Fig. 11 is shifted to the other end of the blank as a tab 32 which really becomes the inner wall section of the back side wall and adjacent this tab or wall is formed the back side top wall section 20. Top wall section 20 has connected to its other end a top panel 33 which connects at its other end with the top panel 26 of Fig. 11. With this blank the under surface of the pasting inner back wall section 32 is secured to the inner face of the normal inner back wall section 16 otherwise the blank is assembled in the same manner as those above.

With this blank a carton as illustrated in Fig. 18 is provided and in which the same walls are had as those illustrated above and further in which the same side or finished surface of the carton is exposed throughout the exterior or visible surface thereof, that is, the inner and outer surfaces of the side and end walls, the inner and outer surfaces of the bottom and the inner and outer surfaces of the lid or cover are identical and if any or all of these surfaces re-

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quire printing, ornamentation or embellishment it can be done in one operation and on the same surface of the card board or other material of which the carton is made.

By providing the blank with a slit 34 substantially at the transverse center of the blank of Fig. 17 and on the crease or fold line between the outer cover panel 26 and outer section 17 of the back wall a relatively stiff piece of material 35, such as card board, may be arranged for maintaining the cover in an open position, as illustrated in Fig. 19. In order to position the lid or cover of the carton as illustrated in Fig. 19, the card board strip 35 is inserted through the slit 34 and positioned upwardly between the cover panels 26 and 33 and is then worked downwardly into the air space of the back wall between its inner and outer wall sections where it is retained as is readily evident from an inspection of Fig. 19.

In the making of a carton from the blank of Fig. 17 the same steps are followed as above described with the additional step of securing the inner back wall section to the portion of the blank adjacent the bottom panel which normally forms the inner wall of the carton such as illustrated in Fig. 1.

What is claimed is:

1. In a carton of the class described the combination of a bottom panel, side walls along two opposed sides of said bottom panel, each comprising an upstanding inner wall member integrally hingedly connected to said bottom panel and an outer wall member integrally hingedly connected to the inner wall member to depend in parallelism with said inner wall member, a securing flap portion hingedly connected to the lower end of the outer wall member and permanently connected to the under surface of the bottom panel, corner flaps at the ends of the side walls inner wall members adapted to be disposed transversely of the bottom panel, and end walls along the remaining two opposed sides of the bottom panel each comprising an upstanding end wall inner wall member integrally hingedly connected to said bottom panel and an end wall outer wall member integrally hingedly connected to the end wall outer wall member to depend in parallelism with said end wall inner wall member, said corner flaps being adapted to be enfolded by the end walls inner and outer wall members, and a flap at the lower end of each of the end walls outer wall members adapted to be inserted between the corner flaps and end wall inner wall member of its end wall for releasably securing the end walls in position.

2. In a carton of the class described the combination of a bottom panel, side walls along two opposed sides of said bottom panel, each comprising an upstanding inner wall member integrally hingedly connected to said bottom panel and an outer wall member integrally hingedly connected to the inner wall member to depend in parallelism with said inner wall member, a securing flap portion hingedly connected to the lower end of the outer wall member and perma-

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nently connected to the under surface of the bottom panel, end walls along the remaining two opposed sides of the bottom panel each comprising an upstanding end wall inner wall member integrally hingedly connected to said bottom panel, a top wall panel integrally hingedly connected to the end wall inner wall member, and an outer wall member integrally hingedly connected to the top wall member to depend in parallelism with said end wall inner wall member, corner flaps at the ends of the side walls inner wall members adapted to be enfolded between the end walls inner and outer wall members with said corner flaps converging toward one another between said end walls inner and outer wall members, and a securing flap at the lower end of each of the end walls outer wall members adapted to be inserted between the corner flaps and the end wall inner wall member of its end wall for releasably securing the end walls in position.

3. In a carton of the class described the combination of a bottom panel, side walls along two opposed sides of said bottom panel, each comprising an upstanding inner wall member integrally hingedly connected to said bottom panel and an outer wall member integrally hingedly connected to the inner wall member to depend in parallelism with said inner wall member, a securing flap portion hingedly connected to the lower end of the outer wall member and permanently connected to the under surface of the bottom panel, end walls along the remaining two opposed sides of the bottom panel each comprising an upstanding end wall inner wall member integrally hingedly connected to said bottom panel, a top panel integrally hingedly connected to the end wall inner wall member, an outer wall member integrally hingedly connected to the top wall member to depend in parallelism with said end wall inner wall member and a bottom wall member integrally hingedly connected with the end wall outer wall member extending toward the bottom panel, corner flaps at the ends of the side walls inner wall members adapted to be enfolded between the end walls inner and outer wall members with said corner flaps converging toward one another between said end walls inner and outer wall members, and a securing flap at the inner end of the end walls bottom wall members adapted to be inserted between the corner flaps and the end walls inner wall members for releasably securing the end walls in position.

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