May 23, 1944. E. L. ARNESON 2,349,241

CARTON

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Fig. 1

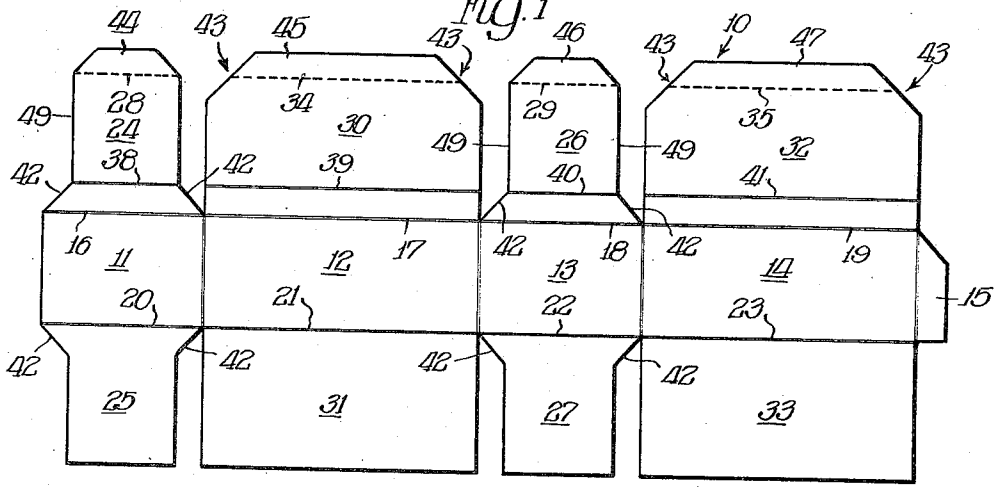



Fig. 2

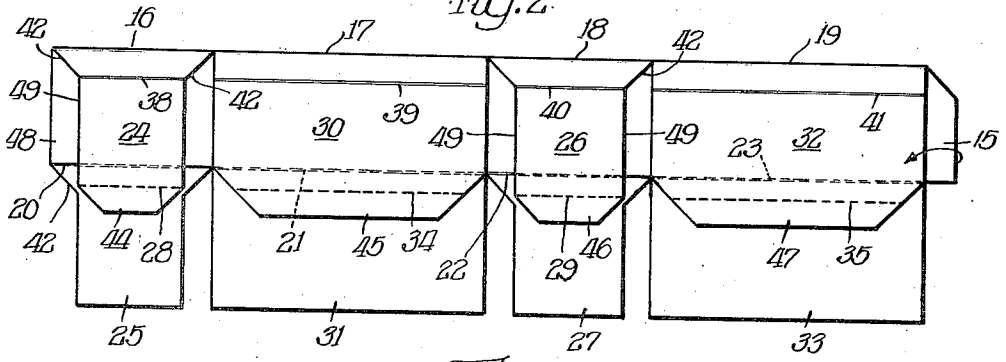
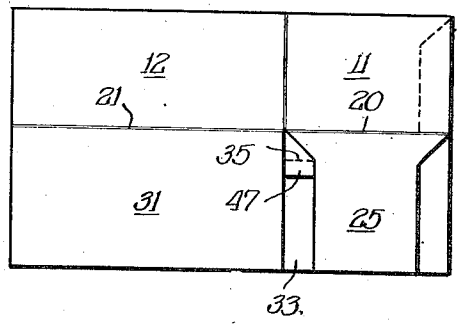



Fig. 3




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Fig. 4

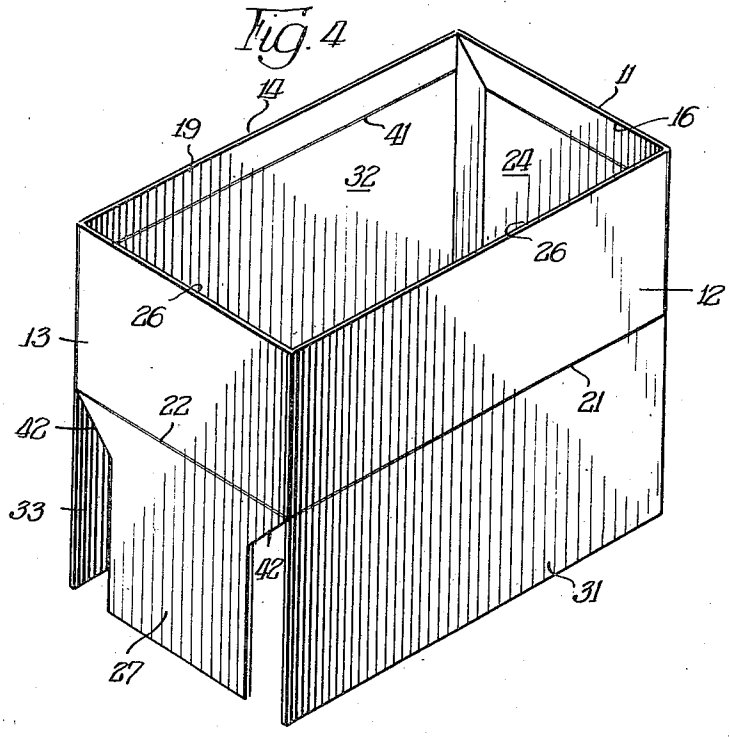
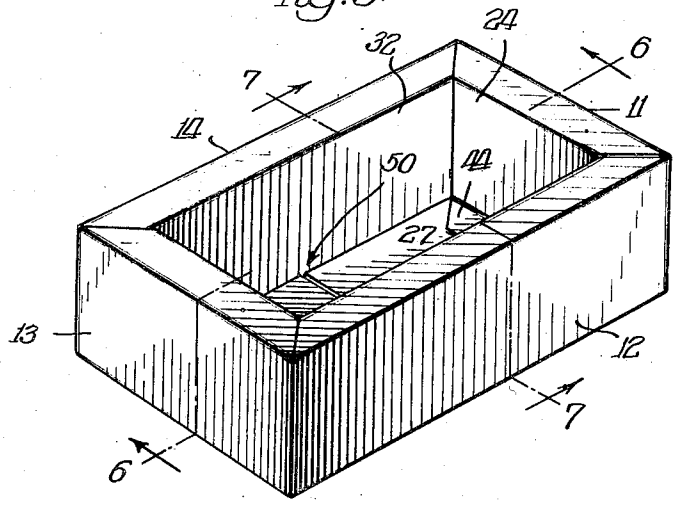



Fig. 5




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Fig. 6.

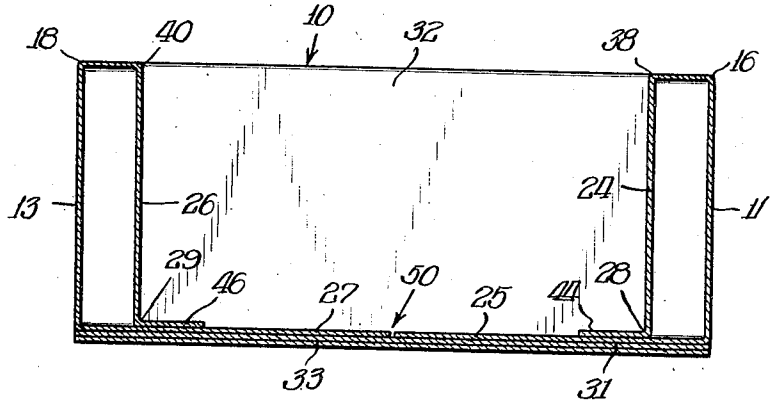
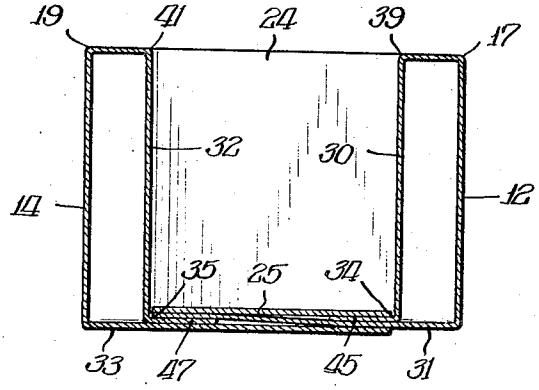



Fig. 7.




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# UNITED STATES PATENT OFFICE

2,349,241

## CARTON

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Application July 3, 1942, Serial No. 449,557

7 Claims. (Cl. 229—37)

The present invention relates to improvements in cartons. More particularly, it pertains to improvements in cartons made from a single blank of cut, scored and folded material secured together to provide spaced apart inner and outer side walls in a new and novel manner and having correlated improvements and discoveries whereby the utility of such a carton is considerably enhanced.

Cartons and containers of the collapsible or knock-down type having spaced apart side walls have appeared in numerous forms for display purposes. Such cartons are very desirable in emphasizing and lending decorative effects to their contents when the covers are removed in that a framed appearance is given thereto because of the double wall arrangement which additionally lends great strength to such a construction. However, there are certain disadvantages attendant upon such conventional cartons, particularly in the amount of paper stock which is used, the complicated set-up features accompanying their erection, particularly in the end panels and the necessary interlocking flaps and other contrivances relied upon to hold such cartons in this condition in more or less permanent form. In assembling such a carton time is often lost in properly trying to register the interlocking elements during the assembling operation and when this has been completed there is the added possibility that certain portions will become wrinkled or jammed, the carton may not remain in its fixed position and otherwise resulting in an unsightly appearance.

Generally, an object of the present invention, is to provide a carton suitable for display purposes as well as for other purposes wherein spaced apart walls are desirable, which will overcome the foregoing disadvantages, which is economic of manufacture, sturdy yet simple and durable of construction and which can readily and permanently be assembled and secured in its position with ease and facility and without danger that the carton may subsequently become disassembled.

More specifically, it is an object of the present invention to provide a carton suitable for display as well as for other purposes for which this type of carton can be used, which readily can be assembled from a cut, scored and folded blank of any suitable, inexpensive material, which has panels that are permanently secured together for ultimate carton formation into spaced apart outer and inner walls in substantial uninterrupted communication with each other, in which the outer walls have integral extensions in overlying relationship with respect to each other and in a manner well suited to provide a reinforced plural-ply bottom for the carton, all of which lie in the same plane, and in which the integral extensions of both the inner and outer walls are secured together and outer walls have extensions which are permanently secured to each other.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article possessing the features, properties and the relation of components which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of a cut, scored and unfolded blank of carton material illustrating one preferred form suitable for assembling into a carton formation in accordance with the principles of the present invention;

Fig. 2 is another plan view depicting the blank of Fig. 1 with a group of aligned inner wall panels inwardly folded over upon a central group of integrally connected outer wall panels;

Fig. 3 is another plan view showing the partially folded blank of Fig. 2 again folded along a transverse median line but at right angles to the former fold so that the portions to each side of said line overlie each other and being adhesively secured together;

Fig. 4 is a perspective view illustrating the folded blank of Fig. 3 in expanded and squared condition;

Fig. 5 is a perspective view showing the squared arrangement of Fig. 4 with bottom portions raised into secured position resulting in the formation of spaced apart side walls;

Fig. 6 is a longitudinal transverse sectional view taken along the line 6—6 of Fig. 5 and looking in the direction of the arrows illustrating spaced apart end walls and overlying and overlapping bottom portions; and

Fig. 7 is a cross-sectional view similar to Fig. 6 but taken along the line 7—7 of Fig. 5 and also looking in the direction of the arrows.

Referring now more particularly to Fig. 1 of the drawings there is shown generally at 10 a preferred type of suitably cut and scored blank of any suitable inexpensive paper material which

can readily be fashioned into a desired type of carton. The blank 10 consists of a plurality of aligned and integral panels some of which are square and some of which are generally rectangular in shape but it is to be understood that the particular configuration of these panels need not be as shown inasmuch as they readily may be altered to provide display cartons which are rectangular or square in shape having greater or less depth than that illustrated; and it will be further understood that any carton designed to provide the particular shape finally desired will of necessity result in panels of compatible configuration.

Specifically, the blank 10 has a series of central panels which form outer side walls as indicated at 11, 12, 13 and 14. At the end of the panel 14 is a short extension 15 adapted to receive an adhesive or suitable glue on its opposite surface. Each of the panels 11 to 14 have along one side score lines 16, 17, 18 and 19 respectively and along their other sides score lines 20, 21, 22 and 23. The panel 11 has panel extensions 24 and 25 and the panel 13 similarly has panel extensions 26 and 27. Each of the panels 24 and 26 forming inner side walls is provided preferably with a perforated score line 28 and 29 respectively. The outer side wall panel 12 also has extensions 30 and 31 and similarly the other outer side wall panel 14 has extensions 32 and 33. Each of these panels is also equipped preferably with perforate score lines 34 and 35 respectively. Each of the panels 24, 30, 26 and 32 are also provided with score lines 38, 39, 40 and 41 respectively. It will also be noted that while the panels 11 and 13 have extensions 24, 25, 26 and 27 respectively, these latter are narrower than the panels 11 and 13, having diagonally cut edges 42 between the score lines 16 and 38, 18 and 40, and on the opposite sides of the score lines 20 and 22. These panels, therefore, have marginal cut-out portions which extend from the top to the bottom of the resulting carton as will be more fully explained hereinafter. Preferably, the edges of panels 24 and 26 on the other side of the perforate score lines 28 and 29 are also diagonally clipped for convenience in assembly. The panels 30 and 32 are likewise clipped at their ends to remove triangular portions and provide inwardly directed diagonal edges as generally indicated at 43 and it should be noted that this is essential for successfully assembling the carton. It will also be observed that these diagonal edges extend approximately equidistant on opposite sides of the score lines 34 and 35. The portions outwardly extending from the perforated score lines 28, 34, 29 and 35 on their upper faces provide glue flaps 44, 45, 46 and 47 to be coated with any suitable form of adhesive or glue and this may be done either mechanically or manually simultaneously with the application of glue on the under side of the extension panel 15 on panel 14.

Referring now more particularly to Fig. 2 it will be seen that the blank of Fig. 1 has been inwardly folded over along the score lines 16, 17, 18 and 19 after the necessary application of glue on the glue flaps 44, 45, 46 and 47 which are secured to the panels 25, 31, 27 and 33 respectively as indicated. The panels 24, 25, 30 and 31 are then together folded inwardly and over upon panels 26, 27, 32 and 33 and at the same time panel 15 with the glue on its under side is folded toward the same but in advance thereof in the direction as indicated by the arrow so that the left hand portion of the blank (as observed) is folded upon the right hand portion thereof and the panel 15 adhesively secured along a marginal portion 48 opposite panel 24.

The resulting folded and adhesively secured panel can more readily be observed in Fig. 3 where the arrangement of the various panels in flattened but adhesively secured position are more fully displayed. It is in this knock-down, folded form that the panels can readily be stacked for shipment and delivered to the user. It will be noted that there are no extensions beyond the rectangular formation generally of the folded carton proper. This is a particular feature in that no broken edges will result and ready entanglement with other cartons especially avoided. However, it is of particular significance that while a few panel edges might be exposed or even creased this does not interfere with the ultimate assembling of the carton since this is not an interlocking type of carton but is already permanently secured for assembly and needs but the subsequent application of any suitable glue or adhesive to secure portions of the bottom. It should be noted at this point that in the absence of glue the carton may readily be secured together by any other suitable means such as by stapling, stitching or the like.

After the customer has obtained the carton and is ready to assemble the same it is but necessary to square the carton of Fig. 3 to a position as depicted in Fig. 4. Thereafter the panels 25 and 27 are first directed upwardly and toward each other. These panels are the first which are moved into position. In the particular illustration, because a rectangular carton is shown which might be said to have side walls and end walls, it is preferable that the extensions 25 and 27 of the outer end walls are first moved into position and, in fact, because of the particular construction of the carton this is essential with a carton having this particular arrangement of cut-out portions. However, whether the carton be square or rectangular it will, in any instance where the cut-out portions of these bottom panels appear, be the first panels which must be moved into position. These cut-out portions are indicated as beginning at the lower ends of the diagonally cut edges 42 and extend downwardly to the end of the panel so that marginal areas thereof have been removed. After these panels 25 and 27 have been moved upwardly into position, panels 33 and 31 follow, either one in advance of the other and overlying each other so as to form all of the panels into a plural-ply bottom of at least three layers. In swinging these panels into position the spaced apart walls are caused to appear because of the fact that the extensions 44, 45, 46 and 47 are glued to the panels 25, 31, 27 and 33 marginally outwardly of the score lines 20, 21, 22 and 23 respectively. Hence, they move hingedly upwardly around these score lines so that the spaced apart inner and outer walls appear and when the panels 31 and 33 are suitably glued or otherwise permanently secured in position the plural-ply bottom is provided. It will be observed that the cut-out portions or areas have permitted the squaring and spacing apart of the remaining side walls at the points indicated, for example, at 49 (see also Fig. 5) where this edge as well as other edges so cut lie closely adjacent the remaining side walls.

It will be observed from Fig. 6 that the outer walls 11 and 13 therefore have their integral extensions 25 and 27 opposing each other and their edges lying short of each other as indicated gen-

erally at 50. It will also be seen that the inner wall panels 24 and 26 have integral extensions in the portions 44 and 46 respectively and that the extension 44 is adhesively secured to the extension bottom 25 and that the extension 46 is adhesively secured to the extension bottom 27, all being hinged about their respective score lines.

The extension of the outer side walls may more readily be observed by reference to Fig. 7 in which the outer side wall 12 extends integrally around the bottom as indicated and the inner side wall 30 is spaced apart from the wall 12 having its integral extension adhesively secured to the bottom panel 31. Similarly outer side wall panel 14 extends around the bottom of the carton as panel 33 and it will be seen that this panel overlies panel 31 including the extension 45 and abuts the base of the inner side wall panel 32 where it serves to square the container and maintain it in rigid position, the panel 27 (and panel 25 not shown in this view) having been previously placed in position and the panel 27 shown here overlying the extension 47 of the inner panel 32. These last named panels also hinge about their respective score lines.

It will be seen from this arrangement that because of the overlapping and overlying bottom panels a plural-ply bottom has been provided which is adhesively secured and reinforced by all the surpluses. It will also be observed that the portions 43 permit the areas between the spaced apart walls to remain in open communication with each other although it will be understood that certain of the panels may be foreshortened to supply even a greater uninterrupted intercommunication between these spaced apart walls. It will also be appreciated that the extensions of the glue flaps 44 and 46 need not necessarily be diagonally edge cut or tapered but as a matter of convenience in assembly this is desirable. In this connection it should be observed that either or both of these glue flaps, as well as either or both of the glue flaps 45 and 47 may be outwardly directed, i. e. opposite of their illustrated direction so as to lie at the base of the spaced apart walls. It is also within the contemplation of the invention to provide shorter bottom flaps so that they either abut or have a small marginal overlap. It is also desirable that one of the integral extensions of the outer wall extend to the opposite inner wall and overlie one of the extensions of the inner wall to abut the base thereof and this is a feature which is important in that the squaring up and aligning of the container is established and maintained.

No cover has been shown in connection with the present drawings illustrating the carton since any suitable cover may be utilized. Particularly for display purposes the entire assembly or the top may be provided with a material such as Cellophane or other suitable transparent material with which such cartons are conventionally provided.

Because of the strength and rigidity of the carton, the open communication which is established and which can even more fully be increased between the various surrounding spaced apart walls, and because of the heavily reinforced bottom, it is contemplated that such a carton be used for the packaging of frozen foods, for example, wherein insulation properties by way of surrounding dead air space as well as numerous thicknesses of material is necessary. In this connection it should be observed that the cover for such a carton can also be made so as to provide it with a spaced apart wall or alternatively a cover of a thickness equivalent to the plural-ply bottom of the present container can be used to advantage.

It will thus be seen that the objects hereinbefore set forth may be readily and efficiently attained and since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as in an illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A carton, which comprises a folded, cut and scored blank having a plurality of panels permanently secured together to form a carton body, said body having spaced apart integral outer and inner walls in substantially uninterrupted communication with each other, said outer walls having integral extensions in overlying relationship with respect to each other and which constitute a plural-ply bottom for said carton, and said inner walls having integral extensions inwardly directed toward the center of said carton and lying in the same plane as said outer wall integral extensions with said inner and outer wall extensions being secured to each other, and at least two of said outer wall extensions being permanently secured to each other.

2. A carton, which comprises a folded, cut and scored blank having a plurality of panels permanently secured together to form a carton body, said body having spaced apart integral outer and inner walls, said outer walls having integral extensions in overlying relationship with respect to each other constituting a plural-ply bottom for said carton, and said inner walls having integral extensions lying in the same plane as said outer wall integral extensions with said inner and outer wall extensions being secured to each other, at least two of said outer wall extensions being permanently secured together, and at least two of said integral extensions on said outer walls being inwardly directed and terminating short of each other and overlying remaining integral extensions of the inner wall secured to the permanently secured integral extensions of the outer wall.

3. A carton, which comprises a folded, cut and scored blank having a plurality of panels permanently secured together to form a carton body, said body having spaced apart integral outer and inner walls, said outer walls having integral extensions in overlying relationship with respect to each other forming a plural-ply bottom for said carton, and said inner walls having integral extensions lying in the same plane as said outer wall integral extensions and said inner and outer wall extensions being secured together, at least two of said outer wall extensions being permanently secured to each other, and the integral extensions of said inner wall being secured to said integral extensions of said outer wall marginally inwardly a distance substantially equal to the distance between said inner and outer walls.

4. A carton, which comprises a folded, cut and scored blank having a plurality of panels perma-

nently secured together to form a carton body, said body having spaced apart integral outer and inner walls, said outer walls having integral extensions in overlapping relationship with respect to each other and constituting a bottom for said carton, and said inner walls having integral extensions lying in the same plane as said outer wall integral extensions and said inner and outer wall extensions being secured together, at least two of said outer wall extensions being secured to each other and at least two of the extensions of said inner wall having edges directed diagonally inwardly and portions of said diagonal edges overlying bottom portions of inner and outer walls adjacent said edges.

5. A carton, which comprises a folded, cut and scored blank having a plurality of panels permanently secured together to form a carton body, said body having spaced apart integral outer and inner walls, said outer walls having integral extensions in overlying relationship with respect to each other and forming a carton bottom, said inner walls having integral extensions and said inner and outer wall extensions being secured to each other, at least two of said outer wall extensions being permanently secured to overlying portions of said bottom, and at least two of said inner walls having vertical marginal cut-out areas extending from the top to the bottom of said carton and the edges of which abut remaining inner side walls lying adjacent thereto.

6. A carton, which comprises a folded, cut and scored blank having a plurality of panels permanently secured together to form a carton body, said body having spaced apart integral outer and inner walls, said outer walls having integral extensions in overlying relationship with respect to each other and forming a carton bottom, said inner walls having integral extensions and said inner and outer wall extensions being secured to each other, at least two of said outer wall extensions being permanently secured to overlying portions of said bottom, at least two of said inner walls having vertical marginal cut-out areas extending from the top to the bottom of said carton and the edges of which abut remaining inner side walls lying adjacent thereto, and inner wall extensions being oppositely directed outwardly and away from each other and lying along the base of said spaced apart inner and outer walls.

7. A carton, which comprises a folded, cut and scored blank having a plurality of panels permanently secured together to form a carton body, said body having spaced apart integral outer and inner walls, said outer walls having integral extensions in overlying relationship with respect to each other which constitute a bottom for said carton, and said inner walls having integral extensions lying in the same plane and said outer wall integral extensions and said inner and outer wall extensions being secured to each other, at least two of said outer wall extensions being permanently secured to each other and at least two of said integral extensions on said outer walls being inwardly directed and terminating short of each other and overlying remaining integral extensions of the inner walls secured to the integral extensions of their respective outer walls, and at least one of said remaining outer wall extensions extending across the bottom of said first named integral extensions and abutting the base of the opposite inner wall overlying the last integral extensions of said outer and inner walls where they are secured and bracingly squaring said carton wall.

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