J. S. STOKES.

CONTAINER STRUCTURE.

APPLICATION FILED AUG. 9, 1918.

1,425,713. Patented Aug. 15, 1922.

Fig. 1,

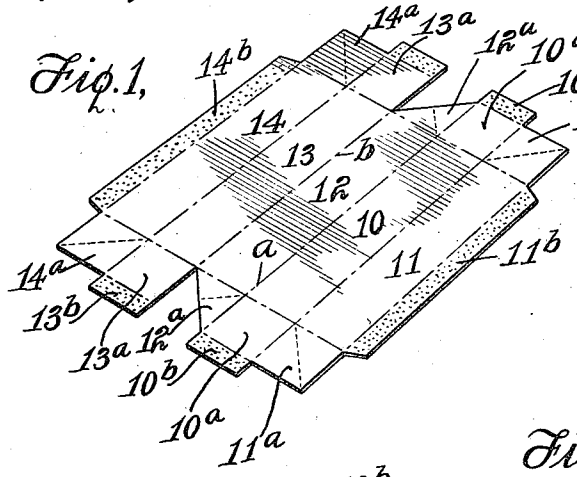


Fig. 4,

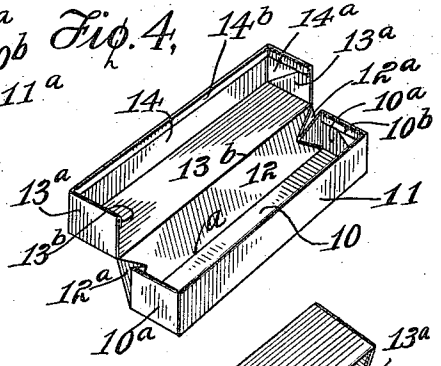


Fig. 2,

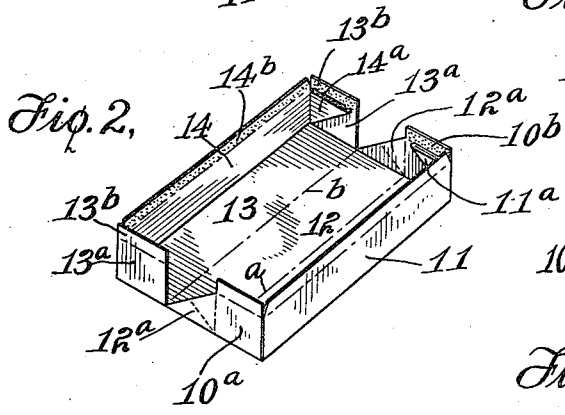


Fig. 5,

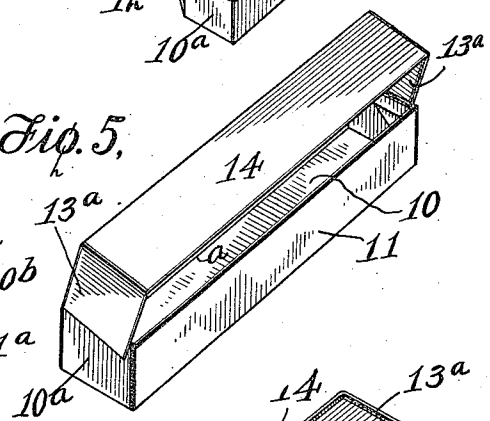


Fig. 3,

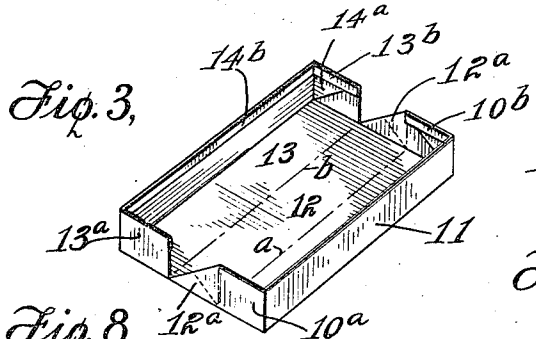


Fig. 6,

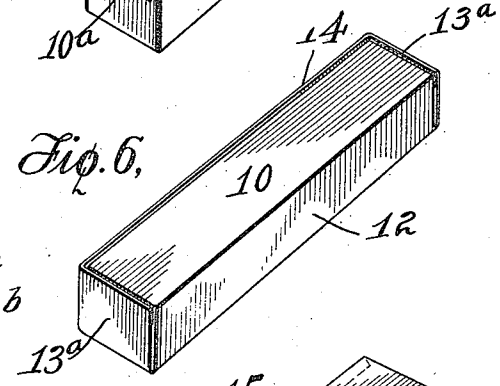


Fig. 8,

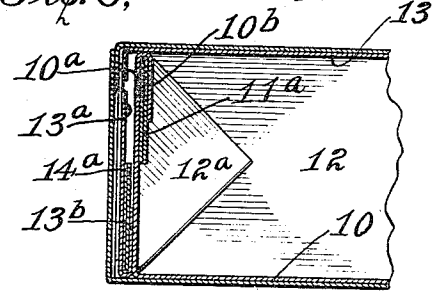
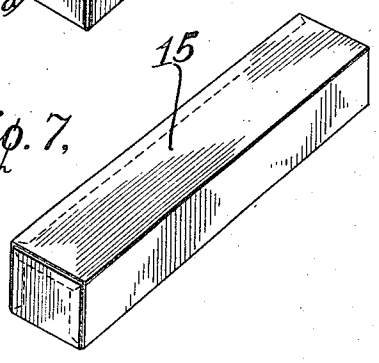


Fig. 7,



Inventor
John Stogdell Stokes
By his Attorneys
Meyers, Cushman & Rea

UNITED STATES PATENT OFFICE.

JOHN STOGDELL STOKES, OF MOORESTOWN, NEW JERSEY, ASSIGNOR TO STOKES & SMITH COMPANY, OF SUMMERDALE, PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CONTAINER STRUCTURE.

1,425,713. Specification of Letters Patent. Patented Aug. 15, 1922.

Application filed August 9, 1918. Serial No. 249,086.

To all whom it may concern:

Be it known that I, JOHN STOGDELL STOKES, a citizen of the United States, residing at Moorestown, in the county of Burlington and State of New Jersey, have invented new and useful Improvements in Container Structures, of which the following is a specification.

My present invention relates generally to the manufacture of paper boxes or containers and more particularly to containers of the hinged or swing-cover type wherein the box proper and its cover are formed from a single blank folded to provide the said box and its hinged cover.

While the invention has several objects in view, perhaps the most important is to provide a novel box construction having a body portion hinged with a telescoping cover all formed from a single blank that may be readily folded up by machine at great speed and low cost owing to the fact that it is possible to employ as the material for the blank relatively thin and readily foldable material, as distinguished from the usual cardboard, paperboard, boxboard and similar materials ordinarily used in container construction which are so stiff that a sharp fold therein tends to crack or break the material, the structure of the box proper and its telescoping cover being such that when the cover is closed over the box proper a multi-walled structure of great strength will be provided, notwithstanding the employment of a blank of relatively thin paper stock.

Another important feature of the invention resides in the fact that owing to the peculiar construction of the container it may be more easily and quickly filled with the commodity it is to carry, especially where the commodity is bakery products such as crackers, cakes, snaps and the like, it being possible to fill the containers with such product by machinery instead of by hand, thus materially reducing the cost of the filled package. This ease of filling is brought about largely from the fact that the formed container, when in full open condition, has two of the sides of the body portion open permitting ample space or clearance for the ready insertion of the commodity either by hand or a machine part, one of the said open sides being afterwards closed by an intermediate portion of the blank from which the container is formed, the remaining open side or the open top of the body portion being closed by the cover.

Another feature of the invention is the provision of a container formed from a single blank folded to provide two similar integrally united compartments with closed corner joints each maintained in a set-up condition by integral portions of the blank, one of said compartments serving to receive the commodity and the other constituting a telescoping cover therefor.

Still another feature of the invention is the provision of a covered container structure having an outer wrapper adhesively attached thereto serving not only to maintain the container closed, but providing a completely sealed wrapped package so that the enclosed commodity will be kept in a fresh condition and vermin excluded, all of which are desiderata of great importance in packaged food products. Furthermore, since the blank is constructed of relatively thin paper stock, as noted above, the usual paper wrapper connected to the entire outer surface of the container by adhesive adds very materially to the rigidity and stiffness thereof, so that the container though made of relatively thin stock, is sufficiently strong to protect fragile commodities such as crackers.

To these and other ends, the nature of which will be readily understood as the invention is hereinafter disclosed, said invention consists in the improved construction and combination of parts hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the accompanying drawings, in which similar reference characters indicate similar parts in each of the views:

Fig. 1 is a perspective view of one embodiment of blank which may be employed in the production of a container of the type of my present invention.

Figs. 2 and 3 are perspective views showing different developments produced during the blank-folding operations.

Fig. 4 is a perspective view showing a succeeding folding operation.

Fig. 5 is a perspective view showing the container at an intermediate stage of the closing operation.

Fig. 6 is a perspective view showing the closed container in inverted position.

Fig. 7 is a perspective view showing the container as having a wrapper applied thereto.

Fig. 8 is a detail sectional view taken through one of the end configurations of the package of Fig. 7.

The several objects heretofore pointed out result generally from the fact that in the present invention the body portion of the container does not have the rear wall as a fixed wall of the body portion, although, when the container is closed, this rear wall functions substantially the same as the ordinary rear wall of the body portion. In other words, the formation of the body portion corresponds to the general prior practice in the provision of front and end walls permanently set-up so as to provide a permanent formation of practically fixed dimensions, differing from this practice in making the rear wall movable relative to the remaining walls—eliminating the fixed connection which is usually provided between this rear wall and the end walls of the body portion. There may be provided a connecting element between this rear wall and the end wall formation, but such connection is of a form to permit this rear wall movement—as presently pointed out this connection may or may not be utilized.

In another aspect of the invention, the container formation may be considered as two elements—one a body or commodity-receiving portion, the other a cover—of substantially similar set-up formation, these two elements being integrally connected by an intermediate web portion in such manner that this intermediate portion will provide, when the two elements are telescoped to close the container, the rear wall of the body portion of the container, the whole formed from a single blank foldable into such formation, the two permanently set-up elements forming compartment-like structures which combinedly form a single closed compartment when the two elements are brought into telescoping relation, each compartment having two of its sides normally open prior to the closing of the container structure.

As shown in the drawings, the invention may be provided by the use of different types of blanks and may provide for different forms of container.

Referring first to Fig. 1, which discloses a blank adapted to produce the container of Fig. 6 by folding stages of which are indicated in Figs 2 to 5 inclusive, the blank is shown as having a plurality of integral sections indicated at 10, 11, 12, 13 and 14, sections 10 and 11 forming permanently-positioned walls of one of the set-up elements or compartments, 13 and 14 indicating the same walls of the other compartment. For instance, if the walls 10 and 11 form portions of the box portion of the container, wall 10 provides the bottom and wall 11 the front wall of such box portion; in such case, wall 13 forms the top of the closed container and 14 a wall which overlies front wall 11.

Each of the set-up formations which provide the compartments is generally of similar construction. For instance, walls 10 and 13 carry end walls 10^a and 13^a respectively. In this particular form of blank, an end wall 10^a and a corresponding end flap 11^a are integrally joined together, as are an end wall 13^a and an end flap 14^a, such joined walls and end flaps being foldable to produce a multi-wall end formation, as indicated more particularly in Fig. 2, end flaps 11^a and 14^a—scored or otherwise suitably prepared—being doubled to provide a somewhat triangular shaped portion located within the end walls 10^a and 13^a, this end formation being retained in its set-up condition by the infolding of end laps 10^b and 13^b respectively, these laps preferably carrying zones of adhesive which are adapted to be applied to the inner face of the end formation, the result being that upstanding walls 11 and 14 will be retained in their folded positions with respect to walls 10 and 13 and closed corner joints will be provided so that the contents of the container will not sift out at such corners.

Where this particular form of blank is employed, I utilize side laps 11^b and 14^b for the purpose of reinforcing the marginal edges of the upstanding walls 11 and 14 respectively, the side laps preferably carrying zones of adhesive which permit, when the laps are infolded, adhesive connection of the laps with the inner faces of the respective walls.

Section 12 integrally connects the two permanently set-up compartment-forming elements, and forms a movable wall which serves to close one of the sides of the body portion when the container is closed.

In this particular form of blank, wall 12 carries wings 12^a, shown as of triangular formation, these wings being scored or otherwise suitably prepared to permit ready folding or doubling as indicated for instance in Fig. 4. As shown, wings 12^a are integrally connected to adjacent end walls, the particular form shown in Fig. 1 indicating the wings as so connected to end walls 10^a, this construction practically placing the set-up compartment which has walls 10 and 11 as the body or commodity-receiving portion of the container.

Figs. 2 to 5 indicate various stages in the formation of the container shown closed in Fig. 6. In Fig. 2 the blank has been folded preliminary to completing the setting-up of the two compartments or elements, this set-

ting-up being shown as completed in Fig. 3 by inturning of the side and end laps.

As shown in Fig. 3 this provides a tray-like formation considerably larger than that of the closed container, this being due to the fact that wall 12 has not been moved and remains in the plane of sections 10 and 13, the top and inner sides of the two compartments thus formed in providing a permanent set-up formation, being open, wings 12^a being carried to an upstanding position when the end walls are raised as in Fig. 2.

As will be readily understood, the formation at this stage will permit of a ready introduction of the contents, the open side and top of the body or commodity receiving portion producing the effect of a shelf rather than the form of a tray such as is produced in the usual type of commercial containers. Owing to the freedom with which the contents can be introduced, the commodity can be readily placed in position by machinery without liability of damaging the commodity or the container, thus largely increasing the capacity of packaging operations by eliminating the necessity for hand filling of the container, a practice which is required in connection with container structures of the prior commercial types.

After the commodity has been introduced, wall 12 is raised to an upstanding position by folding on line *a*, thus applying the rear wall of the body portion, wings 12^a being infolded on their folding lines to produce a doubled formation. If desired, this folding of wall 12 may carry the cover section to a raised position without change in relation between sections 12 and 13, or the cover section may be moved on line *b* outward, as indicated, for instance in Figure 4, this view showing wall 12 at an intermediate point in the raising movement.

This raising of wall 12 causes the doubled wings 12^a to extend between the rear wall and the contents, and serves to close the break between wall 12 and the multi-ply end formation. Should it be desired to retain wall 12 in this position permanently, this can be readily done by placing adhesive between the opposing faces of the doubled wings 12^a, this adhesive connection, when set, practically preventing wall 12 from being opened out; however, this is not essential, and in some cases may not be preferred owing to the fact that it practically eliminates the open side of the body portion for the purpose of removal of contents after the container has been opened.

It will therefore be apparent that by providing an intermediate portion such as wall 12 between the commodity and cover sections, with the end walls 13^a of the cover section disconnected from the said intermediate portion as herein disclosed, that the box structure may be adapted for different opening operations, the structure being either adapted to be opened into tray-like formation, as shown in Figure 3 of the drawings, or opened as illustrated in Figure 4, with the rear wall 12 retaining its function as the rear wall of the commodity compartment, while the telescopic cover section is moved completely out of telescopic position. A convenient way of obtaining this flexibility of use is by making the wings 12^a of triangular form as above described; it being, however, apparent that a similar flexibility of use may be obtained in other ways.

The cover element is then moved to closed position by folding on line *b* so as to telescope the permanently set-up body portion, the end walls of the cover element overlying the end walls of the body portion, wall 14 overlying wall 10. Fig. 5 indicates an intermediate stage of this folding, Fig. 6 showing the container folded to its closed position, the view showing the container as inverted for the purpose of more clearly indicating the telescoping relation.

Owing to the fact that the container structure formed from the blank of Fig. 1 provides for reinforced marginal edges of the permanently set-up portions of the container and permits the set-up condition to be maintained by the use of relativey small adhesively-coated laps 10^b and 13^b, this form of blank is preferred for many uses, but the invention is not limited to this form.

As shown in Fig. 7, a sealed wrapped package can be readily provided with these general types of container structure, Fig. 8 showing a sectional view where the blank of Fig. 1 is employed. Such package is completed by the application of a thin wrapper blank in such form as to substantially enclose the container, as indicated at 15 in Fig. 7. The wrapper may be applied either as a "loose" or a "tight" wrap—preferably the latter—as may be desired, the wrapper serving to retain the container closed. Where the tight wrapped method is employed, the package can be readily opened by breaking the wrapper on the lines provided by the over-lying telescoping element. For instance, assuming the container of Fig. 6 to be so wrapped, the break would extend vertically at the ends of wall 12, along the ends of wall 10, and between this wall and wall 14, thus releasing the cover element and wall 12 for movement on line *b*, or movement of wall 12 on line *a* or movements on both lines, as may be desired, the break not affecting the wrapper faces which may have been applied to the several container faces. Hence, the arrangement permits the wrapper to be in the form of a label, the line of break not affecting the label contents, so that the label effect remains even though the label be broken to open the container.

It will thus be apparent that by providing

an intermediate portion such as wall 12 between the commodity and cover sections, with the end walls 13ª of the cover section disconnected from the said intermediate portion as herein disclosed, that a structure results in which a continuous way or line for wrapper breakage is effected, permitting the box, after wrapper breakage, to be opened up in its tray-like formation without further wrapper interference or further necessity for wrapper breakage, this providing a structure in which the wrapper may be retained in its adhering condition on the walls of the box formation and function as a label therefor during commodity consuming use. This will be further apparent from a consideration of Figures 6 and 7. It will be seen by reference to Figure 6 that the telescoping end walls and side walls define channels therebetween, such that when the container of Figure 6 is provided with a wrapper as shown in Figure 7, the channels provide a continuous way or line for wrapper breakage. Starting, for example, at one end of wall 12, a finger nail may be inserted through the outer wrap and between walls 13ª and 10ª, the telescoping walls guiding the nail for vertical upward movement along an end of wall 12, then horizontally along an end of wall 10, then transversely along the side edge of wall 10, then horizontally in the other direction along the other end of wall 10 and finally vertically downward along the other end of wall 12; the telescoping walls guiding this continuous movement along the container edges provided by the telescoping cover. The cover is now free to be moved out of telescoping relation and into the tray-like formation, as shown in Figure 3, and may be so moved without any further wrapper interference, no further wrapper breakage along any of the edges being necessary. The container may be opened out in this manner with the wrapper adhering to the outer walls of the container in label like fashion.

As will be readily understood, the particular form shown in the drawings is more or less illustrative, indicating the general principles of the invention, which principles can be utilized in various ways in the production of container structures. The disclosure herein is therefore not to be considered as limiting the invention, it being my purpose to reserve the right to make any and all such changes or modifications therein as may be found desirable or necessary in meeting the exigencies of use, in so far as the same may fall within the spirit and scope of the invention as expressed in the accompanying claims when broadly construed.

What I claim is:

1. A container formed from a single blank of foldable material, said blank being folded to provide two similar compartments, each including bottom, side and end walls permanently maintained in a set-up condition by integral portions of the blank which are attached to walls of the compartments, one of the said compartments serving to receive a commodity and the other constituting a telescopic cover therefor; the said compartments being united by an intermediate portion of the blank which operates to permit the set-up compartments to be opened out each with its bottom wall in the plane of the said intermediate portion, whereby a tray-like structure is provided, the said intermediate portion serving to form one of the side walls of the commodity receiving portion when the two compartments are in telescoping relation; the intermediate portion being disconnected from the end walls of the telescoping cover so as to permit the telescoping cover to be rotated entirely out of telescoping position with the intermediate portion retaining its position as the side wall of the commodity compartment.

2. A container formed from a single blank of foldable material, said blank being folded to provide two similar compartments, each including bottom, side and end walls permanently maintained in a set-up condition by integral portions of the blank which are attached to the walls of the compartments, one of the said compartments serving to receive a commodity and the other constituting a telescopic cover therefor; the said compartments being united by an intermediate portion of the blank which operates to permit the set-up compartments to be opened out each with its bottom wall in the plane of the said intermediate portion, whereby a tray-like structure is provided, the said intermediate portion serving to form one of the side walls of the commodity receiving portion when the two compartments are in telescoping relation; two edges of the cover end walls being free such that when the cover is provided with a tight wrap a continuous line or way for wrapper severance or breakage will be provided by the overlapping telescopic cover, the breakage permitting the free opening of the container without further wrapper interference or breakage and whereby an opened container with wrapper attached may be effected.

3. A container formed from a single blank of foldable material, said blank being folded to provide two similar compartments, each including bottom, side and end walls permanently maintained in a set-up condition by integral portions of the blank which are attached to walls of the compartments, one of the said compartments serving to receive a commodity and the other constituting a telescopic cover therefor; the said compartment being united by an inter-

mediate portion of the blank which operates to permit the set-up compartments to be opened out each with its bottom wall in the plane of the said intermediate portion whereby a tray-like structure is provided, the said intermediate portion serving to form one of the side walls of the commodity receiving portion when the two compartments are in telescoping relation; two edges of the cover end walls being free such that when the cover is provided with a tight wrap a continuous line or way for wrapper severance or breakage will be provided by the overlapping telescoping cover, said line embracing three bottom edges and two side edges of the container, the breakage permitting free opening of the container without further wrapper interference or breakage and whereby an opened container with wrapper attached may be effected.

4. A container formed from a single blank of foldable material, said blank being folded to provide two similar compartments each permanently maintained in a set-up condition by integral portions of the blank which are attached to wall portions of the compartments; the said compartments being united by an intermediate portion of the blank which operates to permit the set-up compartment to be opened out each with its bottom wall in the plane of the said intermediate portion, whereby a tray-like structure is provided, one of said compartments serving to receive a commodity and the other constituting a telescopic cover therefor and said intermediate uniting portion serving to form one of the side walls of the commodity receiving compartments when the two compartments are in telescopic relation and triangular flaps integral with the end portions of one compartment and with the intermediate portion of the blank and being adapted to fold between the contents of the container and the intermediate portion when the blank is folded into telescoping relation, the edges of the cover end walls being such that when the container is provided with a tight wrap the overlapping telescoping cover will provide a continuous line or way for wrapper breakage whereby the container may be opened up in its tray-like formation without further wrapper breakage with the wrapper adhering to the walls of the container, this construction providing in the alternative a structure whereby the cover may be moved completely out of telescopic relation with respect to the commodity compartment while the intermediate portion retains its position as side wall of the said commodity compartment.

5. A container formed from a single blank of relatively thin and readily foldable material, said blank being folded to provide two similar compartments, each permanently maintained in a set-up condition by integral portions of the blank which are adhesively attached to side wall portions of the compartments, said compartments having infolded marginal portions of the blank extending entirely around the upper edge of each compartment to stiffen and reinforce said edge, and being united by an intermediate portion of the blank which operates to permit the set-up compartments to be opened out each with its bottom wall in the plane of the said intermediate portion whereby a tray-like structure is provided, one of the said compartments serving to receive a commodity and the other constituting a telescopic cover therefor, said intermediate uniting portion serving to form one of the side walls of the commodity-receiving compartment when the two compartments are in telescopic relation.

6. A container formed from a single blank of relatively thin and readily foldable material, said blank being folded to provide two similar compartments, each permanently maintained in a set-up condition by infolded marginal integral portions of the blank which are adhesively attached to side wall portions of the said compartments, and said compartments being united by an intermediate portion of the blank which operates to permit the set-up compartments to be opened out each with its bottom wall in the plane of the said intermediate portion whereby a tray-like structure is provided, one of said compartments serving to receive a commodity and the other constituting a telescopic cover therefor and said intermediate uniting portion serving to form one of the side walls of the commodity receiving compartment when the two compartments are in telescopic relation, and triangular flaps integral with the end portions of one compartment and with the intermediate portion of the blank and each being foldable on a single diagonal line so as to lie between the contents of the container and the intermediate portion when the blank is folded into telescopic relation to form a permanent closure for the vertical corner edges of the container lying between said end walls and intermediate portion.

7. A container formed from a single blank of relatively thin and readily foldable material, said blank being folded to provide two similar compartments, each permanently maintained in a set-up condition by integral portions of the blank which are adhesively attached to side wall portions of the said compartments, and said compartments being united by an intermediate portion of the blank which operates to permit the set-up compartments to be opened out each with its bottom wall in the plane of the said intermediate portion whereby a tray-like structure is provided, one of said compartments serving to receive a commodity

and the other constituting a telescopic cover therefor, said intermediate uniting portion serving to form one of the side walls of the commodity-receiving compartment when the two compartments are in telescopic relation, triangular flaps integral with the end portions of one compartment and with the intermediate portion of the blank and adapted to fold between the contents of the container and the intermediate portion when the blank is folded into telescopic relation to form a permanent closure for the vertical corner edges of the container lying between said end walls and intermediate portion, and adhesive means for maintaining said triangular flaps in folded relation to hold the intermediate portion of the blank in position as the rear wall of the inner compartment when the outer telescopic compartment is raised.

In testimony whereof I have hereunto set my hand.

JOHN STOGDELL STOKES.