April 23, 1935. R. GUYER 1,998,717

RECLOSING BOX

Filed June 26, 1933 2 Sheets-Sheet 1

Fig. 2

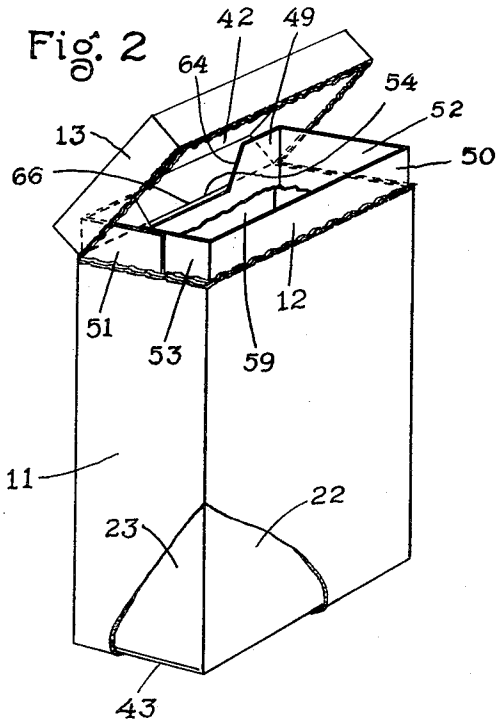
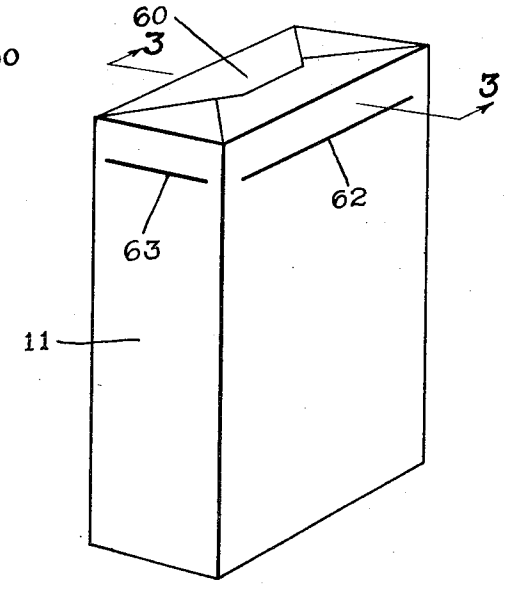


Fig. 1



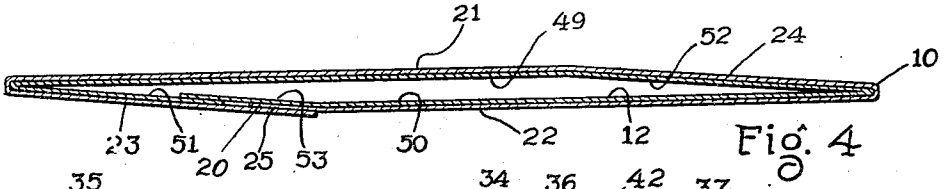


Fig. 4

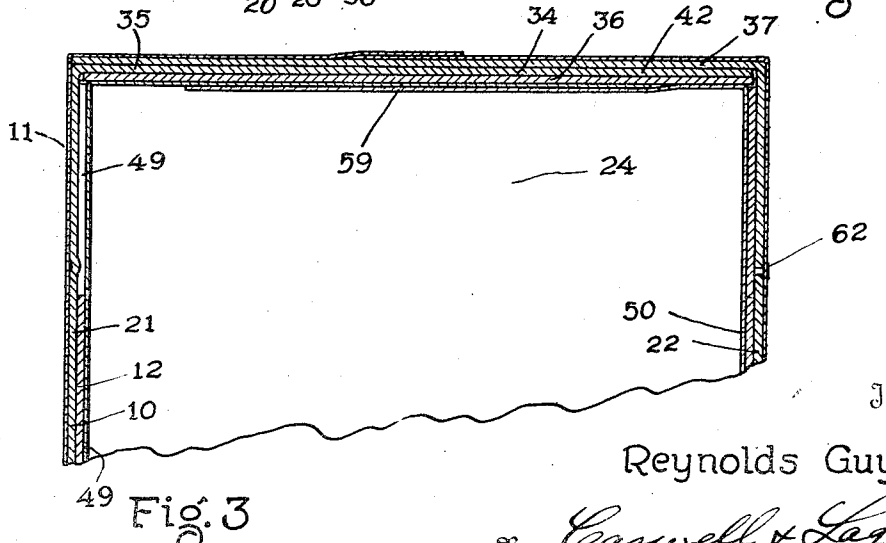


Fig. 3

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RECLOSING BOX

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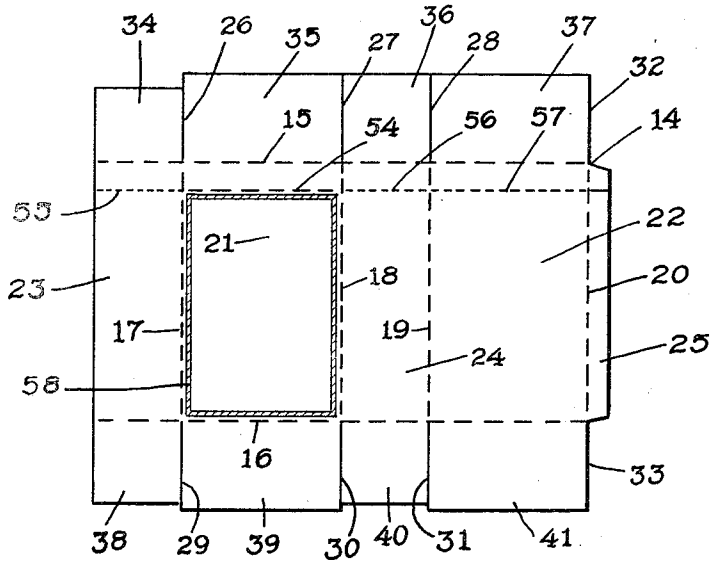


Fig. 5

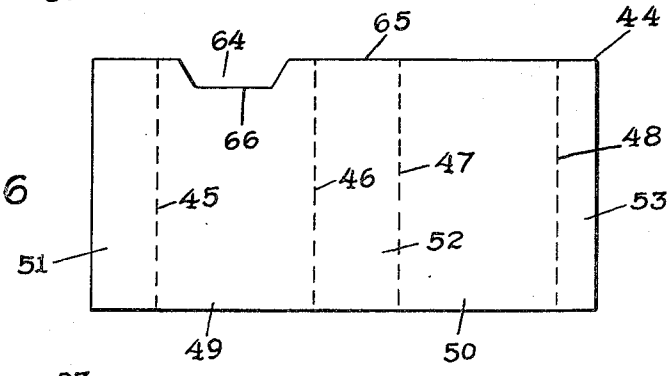


Fig. 6

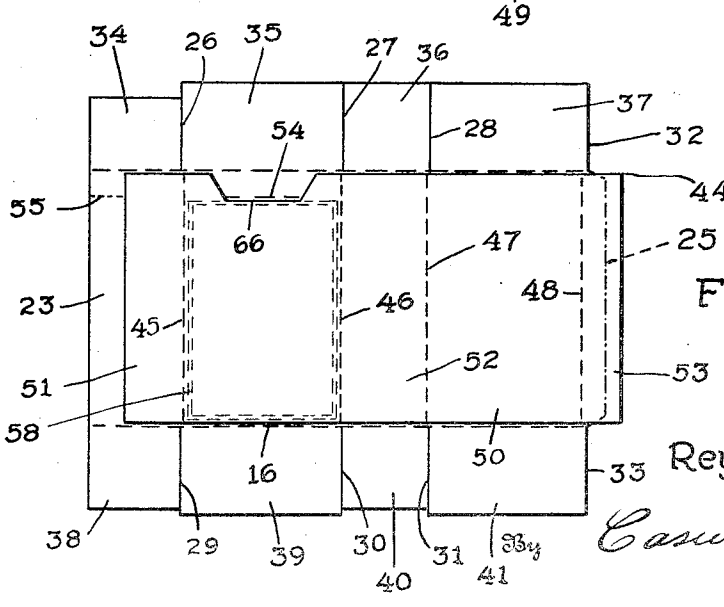


Fig. 7

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Patented Apr. 23, 1935 1,998,717

UNITED STATES PATENT OFFICE

1,998,717

RECLOSING BOX

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Application June 26, 1933, Serial No. 677,581

11 Claims. (Cl. 229—51)

My invention relates to boxes or cartons and particularly to reclosing paper boxes for use in packing various substances from which portions are occasionally removed.

An object of the invention resides in providing a box having a closure by means of which access to the box may be had to remove portions of the contents thereof as desired and by means of which the box may be closed.

Another object of the invention resides in providing a box which can be erected and filled on the ordinary filling machine without alteration or reconstruction thereof.

A still further object of the invention resides in providing a box in which the closure is formed through a portion of the body of the box severable therefrom.

An object of the invention resides in constructing the box with a shell formed from a single sheet of paper board cut and scored to provide a front, back and side walls connected together.

A feature of the invention resides in scoring one of the walls of the shell along a transverse line spaced from one end thereof and in weakening the other of the walls of the box along lines lying in continuation of said score line and one another.

Another object of the invention resides in constructing the walls of the box with flaps at the ends thereof adapted to be arranged in overlying position and to be glued together to form ends for the box.

A still further object of the invention resides in providing a sleeve within the shell having walls corresponding to those of the shell and overlying the weakened portions of the walls of the shell.

An object of the invention resides in constructing the shell and the sleeve so that the same may be assembled before erection and simultaneously collapsed into flat form for packing and storage.

A still further object of the invention resides in attaching one of the walls of the sleeve to the corresponding wall of the shell and in maintaining the remaining walls of the sleeve free from the shell to permit of relative sliding of the walls of the shell with respect to the sleeve in the collapsing of the combined structure.

Another object of the invention resides in constructing the wall of the sleeve adjacent the scored wall of the shell with an opening extending downwardly to a line substantially registering with the said score line.

An object of the invention resides in gluing the sleeve to the scored wall of the shell along a band disposed in proximity to and below the score line thereof.

Another object of the invention resides in providing flaps at the adjoining edges of the two end walls of the blanks from which the sleeve and shell are constructed for securing said walls together and in arranging said flaps in staggered relation within the interior of the box.

An object of the invention resides in causing said flaps to issue from adjoining corners of the box and is causing the same to extend toward one another and to lie along the same wall of the box.

A feature of the invention resides in arranging the flap on the shell upon the interior of the shell and the flap on the sleeve upon the exterior of the sleeve so as to bring said flaps substantially in the same plane when the walls of the box are connected together.

A still further object of the invention resides in providing a wrapper for the box and in printing upon the wrapper lines registering with the lines of weakening of the shell of the box for indicating where the said shell is to be broken in the formation of the closure for the box.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a perspective view of a box illustrating an embodiment of my invention.

Fig. 2 is a view similar to Fig. 1 showing the closure in open position.

Fig. 3 is a fragmentary elevational sectional view taken on line 3—3 of Fig. 1 and drawn to a larger scale.

Fig. 4 is a cross sectional view taken through the box when the parts thereof are in collapsed position.

Fig. 5 is a developed view of the blank from which the shell of the box is constructed.

Fig. 6 is a developed view of the blank from which the sleeve of the box is constructed.

Fig. 7 is a developed view of the two blanks of the box applied to one another.

Where paper boxes are used for containing loose materials such as flour, sugar, cereals and the like and where portions only of the contents are removed at one time it becomes highly desirable that a closure for closing the box containing such materials be provided to prevent contamination of the contents. The present invention provides

a box in which a closure may be formed by severing portions of the box from the body thereof when it is desired to open the box which closure may be repeatedly reapplied whenever desired.

My invention as best shown in Fig. 2 consists of an outer shell 10 covered by a suitable wrapper 11. Within the shell 10 is disposed a sleeve 12. The shell 10 is weakened along certain lines to permit of severing the upper portion of the said shell from the body portion thereof to form a closure 13 for closing the upper end of the box. This closure cooperates with the sleeve 12 to form a seal and may be repeatedly used as the occasion demands. These parts will now be described in detail.

The shell 10 is constructed from a blank indicated in its entirety at 14 in Fig. 5, which blank is constructed from a sheet of paper board or any other suitable material. The blank 14 is substantially rectangular and is provided with two longitudinal score lines 15 and 16 and with transverse score lines 17, 18, 19 and 20 extending between the score lines 15 and 16. These various score lines divide the blank into a rear wall 21, a front wall 22, side walls 23 and 24 and a flap 25 issuing from the front wall 22. The blank 14 is further sheared along lines 26, 27, 28, 29, 30 and 31 and the corners of the blank cut away as indicated at 32 and 33, which lines of shear lie in continuation of the score lines 17, 18, 19 and 20 and extend up to the score lines 15 and 16. By means of this construction, flaps 34, 35, 36, 37, 38, 39, 40 and 41 are provided which, when properly folded, form ends 42 and 43 for the box.

For the purpose of forming the closure 13, the rear wall 21 of shell 10 is provided with a score line 54 which is parallel to the score line 15 and spaced a short distance therefrom. In addition to this score line the front 22 and the sides 23 and 24 are weakened along lines 55, 56 and 57, which lines lie in continuation of the score line 54 and are also parallel to the score line 15 and spaced the same distance therefrom as the score line 54. The lines 55, 56 and 57 may be formed by perforating the sheet or by otherwise deforming the sheet as by completely shearing the same along defined portions thereof or by cutting or incising the sheet partly through the same to provide a continuous line of weakening or spaced apart indentations. When the box is formed, the shell 10 thereof may be broken along the lines of weakening 55, 56 and 57 to form the closure 13 which may be swung upon the score line 54 as a hinge as best shown in Fig. 2.

The sleeve 12 is similarly constructed from a blank 44 preferably formed of paper board or other similar material. This blank is rectangular in form and of a height slightly less than the distance between the score lines 15 and 16 of the blank 14. The blank 44 is scored along transverse lines 45, 46, 47 and 48 to provide a rear wall 49, a front wall 50 and side walls 51 and 52 and a flap 53 connected to the front wall 50. The score lines 45, 46 and 47 and 48 are slightly closer together than the score lines 17, 18, 19 and 20 so that the walls 49, 50, 51 and 52 fit snugly within the walls 21, 22, 23 and 24 when the two blanks are properly folded and connected.

In the construction of the box glue or other adhesive such as indicated at 58 is applied to the rear wall 21 of the shell 10 upon the interior surface thereof or upon the sleeve 12 upon the exterior of the corresponding wall thereof. This glue is disposed inwardly of the score lines 17 and 18, above the score line 16 and in proximity to the score line 54 and immediately below the same. The blank 44 is applied to and secured to the blank 14 through the glue 58 which adheres to the rear wall 49 of said blank. In positioning the blank 44 upon the blank 14 the rear wall 49 is exactly centered upon the rear wall 21, the score lines 45 and 46 falling slightly inwardly of the score lines 17 and 18. This brings the score lines 47 and 48 progressively inwardly from the score lines 19 and 20 as clearly shown in Fig. 7. With the blanks so arranged, flap 53 overlies flap 20 and extends outwardly beyond the same. When the blanks are in such position, glue is simultaneously applied to both the flap 20 and the portion of the flap 53 extending beyond the same. In the further construction of the box the attached blanks are folded along the score lines 19 and 47, bringing the fronts 50 and 22 over upon the remaining structure of the box. As these parts are folded, the flap 20 creeps away from the glued part of the flap 53 separating the glued portions of said flaps which prevents the end wall of the sleeve from adhering to the end wall of the shell. The side walls 23 and 51 are next folded upon the glued flaps 25 and 53 which causes the said side walls to be attached to the front walls of the shell and sleeve. The box is then in collapsed form with the walls at the ends of the blank connected together.

In the erection and filling of the box an ordinary filling machine is employed such as is used with similar boxes or cartons. This filling machine is constructed with two blades which are inserted between the folded-over portions of the box, said blades being subsequently spread apart to cause the body of the box to assume a rectangular form. As the box passes through the filling machine the box is arranged upon a suitable form and the flaps 38, 39, 40 and 41 folded over and glued together to form the end 43 of the box. The contents of the box are then placed within the same. Where certain kinds of substances are to be packed, such as flour, sugar and the like, the same are preferably placed in a bag such as indicated at 59 in Fig. 3, and said bag inserted into the box through the open upper end thereof. Flaps 34, 35, 36 and 37 are thereafter folded over and glued together to form the end 42 of the box. The contents are now completely enclosed through the wall structure of the box.

After the box has been closed, the wrapper 11 is applied which is formed from a plain sheet of paper, the ends thereof being folded over and glued to the end of the box and to themselves as indicated at 60 in Fig. 1. The wrapper 11 has printed upon it lines 62 and 63 which when the wrapper is properly applied, register with the lines of weakening 55, 56 and 57 in the various walls 23, 24, and 25 of the shell 10. When it is desired to open the box, a knife or the finger nail may be run along the lines 62 and 63 breaking the walls of the box along the lines of weakening 55, 56 and 57. After the box has been so broken the closure 13 is formed which may be swung outwardly as shown in Fig. 2 to give access to the substance packed within the box and contained within the bag 59.

For the purpose of preventing the contents of the box from entering between the upper part of the sleeve 12 and the portion of the closure 13 formed through the rear wall 21, of the shell to obstruct the closing of the closure, the upper portion of the rear wall 49 of sleeve 12 is constructed with a recess or opening 64. This opening extends downwardly from the upper edge 65 of the

blank 44 to a line 66 which is adapted to substantially register with the score line 54 of blank 14 when the blank 44 is secured to the blank 14 or to lie slightly below the same. Any material which may fall in between these two parts of the box is readily forced out through the opening 64 and into the interior of the box. In applying of the blades of the filling machine to the collapsed box, the same are preferably run along the flap 35 and directed into the interior of the box through the wall structure connected therewith. By means of the cut away portion 64 the blank 44 is securely glued to the blank 14 at the locality of the score line 54. This permits the blade of the filling machine to slide over the edge 66 of the blank 44 and to be received within the interior of the collapsed box. Were the portion of the wall 49 of sleeve 12 of the same height as the walls of the box, the blades of the filling machine might easily slide in between these parts of the carton which must of necessity be free from one another to permit of the subsequent hinging of the closure when the same is severed from the body of the box. By means of this recess or opening the blades of the filling machine readily enter into the interior of the collapsed box and the opening and subsequent forming and filling of the box is accomplished in identically the same manner as with the ordinary box or carton blank.

It will be noted in Fig. 4 that the flaps formed on the shell and sleeve extend from adjacent corners of the box toward one another and that the same are of such width that the flaps fall short of one another when the parts are glued together. This causes the flaps to lie in the same plane in offset relation with respect to one another, thereby not materially increasing the thickness of the box. By gluing the sleeve to the shell along one wall, the other walls of the sleeve and shell slide relative to one another permitting the box to be readily erected or collapsed as desired.

It will be noted in Fig. 7 that the flap 53 and the flap 25 are both of the same length and of a length equal to the height of the walls of the carton to which they are attached. By means of this construction a glue roller can be run continuously along such flaps and the glue applied without coating any other portion of the blank.

My invention is highly advantageous in that a reclosing box or carton can be formed from an ordinary carton with but a slight additional cost. With my invention greater sanitation is brought about and preservation of the contents of the box results. With my invention the box blank can be erected and formed and filled upon the ordinary filling machine without reconstruction or alteration thereof. With my invention the contents of the box are fully protected the same as in any other form of box. The boxes prior to erection can be folded into a flat form the same as ordinary boxes and packed and shipped in the customary manner. By arranging the joints of the sleeves and shell in staggered or offset relation no appreciable additional thickness is provided and the parts of the carton fold readily in the desired manner. Through the use of the opening or recess in the sleeve of the box adjacent the hinge of the closure, portions of the contents which may fall between the closure and sleeve are caused to be discharged back into the box. At the same time the insertion of the blades of the filling machine into the box is greatly facilitated.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

1. In a box, a shell including front, back and side walls and ends connected therewith, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another to provide a closure partly severable from the body of the box and a wrapper enveloping said box and overlying the weakened portions of the shell, said wrapper having lines printed thereon and registering with the lines of weakening of the shell.

2. In a box, a shell including front, back and side walls and ends connected therewith, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another to provide a closure partly severable from the body of the box, a wrapper enveloping said box and overlying the weakened portions of the shell, and means on said wrapper for indicating the position of said lines of weakening of the walls of said shell.

3. In a box, a shell including front, back, and side walls constructed from a sheet of paper board and foldable along the corners to collapse into a flat form, flaps formed on said walls and foldable into overlying position to form ends for the box, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another, a sleeve within said shell having front, back and side walls disposed adjacent the corresponding walls of the shell and overlying the weakened portions of said shell, one of the walls of said sleeve being attached to the corresponding wall of the shell and the remaining walls of the sleeve being free from the other walls of the shell, to cause the sleeve to collapse with the shell.

4. In a box, a shell including front, back and side walls constructed from a sheet of paper board and foldable along the corners to collapse into a flat form, flaps formed on said walls and foldable into overlying position to form ends for the box, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another, a sleeve within said shell having front, back and side walls disposed adjacent the corresponding walls of the shell and overlying the weakened portions of said shell, the rear wall of said sleeve being attached to the rear wall of said shell, and the remaining walls of the sleeve being free from the other walls of the shell to cause the sleeve to collapse with the shell.

5. In a box, a shell including front, back and side walls constructed from a sheet of paper board and foldable along the corners to collapse into a flat form, flaps formed on said walls and foldable into overlying position to form ends for the box, the rear wall of the shell being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another, a sleeve within said shell having front, back and side walls disposed adjacent the corresponding walls of the shell and overlying the weakened portions of said shell, the rear wall of said sleeve having a part cut away at the upper edge thereof and extending down to a line substantially regis-

tering with said score line, the rear wall of the sleeve being glued to the rear wall of the shell along a band disposed in proximity to and below said score line.

6. In a box, a shell including front, back and side walls and ends connected therewith, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another to provide a closure severable from the body of the box, a sleeve within said shell having front, back and side walls disposed adjacent the corresponding walls of the shell and overlying the weakened portions of said shell, the wall of said sleeve lying opposite the score line of said shell having a part cut away at the upper edge thereof and extending down to a line substantially registering with said score line.

7. A blank for forming a carton comprising aligned side wall sections for forming the side walls of the carton and flaps for forming the ends of the carton, all except one of the side wall sections of the blank being provided adjacent one end thereof with spaced-apart readily fracturable indentations forming a line extending entirely across all except one of the side walls of the carton, the remaining side wall section having therein an unbroken relatively non-fracturable continuous hinge-defining formation extending entirely across said remaining section in alignment with and arranged as a continuation of said line of spaced apart readily fracturable indentations.

8. A blank for forming a carton comprising aligned side wall sections for forming the side walls of the carton and flaps for forming the ends of the carton, said side wall sections of the blank with the exception of one being provided adjacent one end thereof with a series of readily fracturable indentations forming a line extending entirely across all except one of the side walls of the carton, the remaining side wall section having therein an unbroken relatively non-fracturable continuous hinge-defining formation extending entirely across said remaining section in alignment with and arranged as a continuation of said line of readily fracturable indentations.

9. In a box, a shell including front, back and side walls and ends connected therewith, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another to provide a closure partly severable from the body of the box and a wrapper enveloping said box and overlying the weakened portions of the shell, said wrapper having lines printed thereon and registering with the lines of weakening of the shell, said wrapper being constructed of thinner material than said shell and being readily fracturable.

10. In a box, a shell including front, back, and side walls constructed from a sheet of paper board and foldable along the corners to collapse into a flat form, flaps formed on said walls and foldable into overlying position to form ends for the box, one of said walls being scored along a transverse line spaced from one end thereof, the remaining walls being weakened along lines lying in continuation of said score line and one another, a sleeve within said shell having front, back and side walls disposed adjacent the corresponding walls of the shell and overlying the weakened portions of said shell, one of the walls of said sleeve being attached to the corresponding wall of the shell along narrow bands lying near the lateral edges of said wall, and the remaining walls of the sleeve being free from the other walls of the shell to cause the sleeve to collapse with the shell.

11. In a box, a shell including front, back, and side walls constructed from a sheet of paper board and foldable along the corners to collapse into a flat form, flaps formed on said walls and foldable into overlying position to form ends for the box, said walls being formed with lines of weakening extending about the walls of the box and spaced from the ends thereof, said lines lying in continuation of one another and providing a hinge on one wall, the walls being readily fracturable along the other lines, a sleeve within said shell having front, back and side walls disposed adjacent the corresponding walls of the shell and overlying the weakened portions of said shell, one of the walls of said sleeve being attached to the corresponding wall of the shell throughout an area lying solely on one side of the line of weakening on such wall of the shell.

REYNOLDS GUYER.