

Aug. 21, 1956

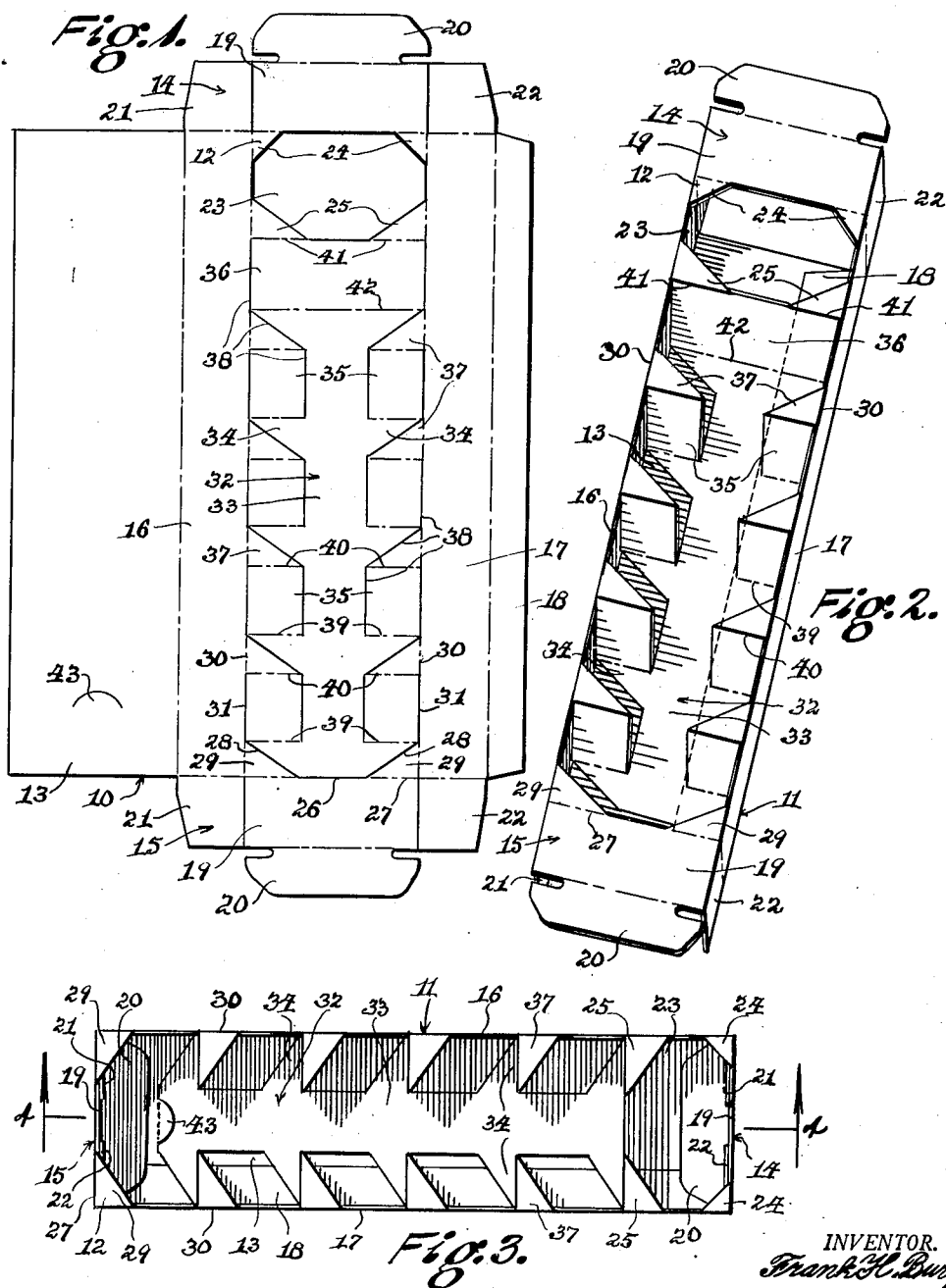
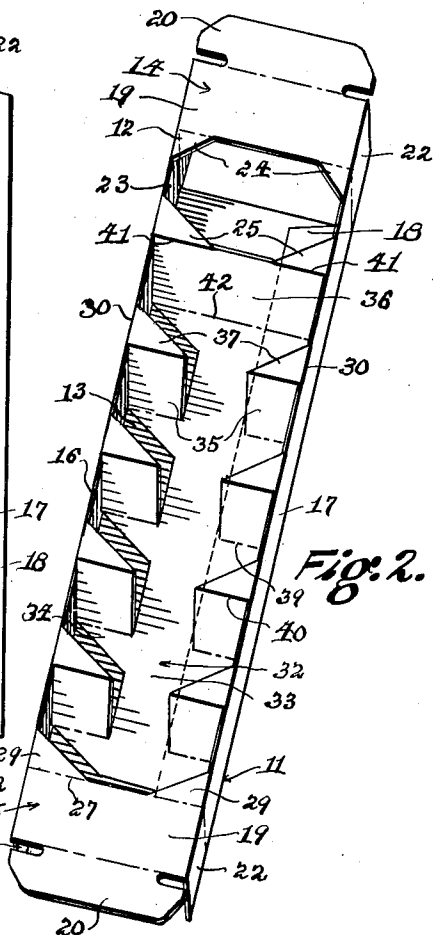
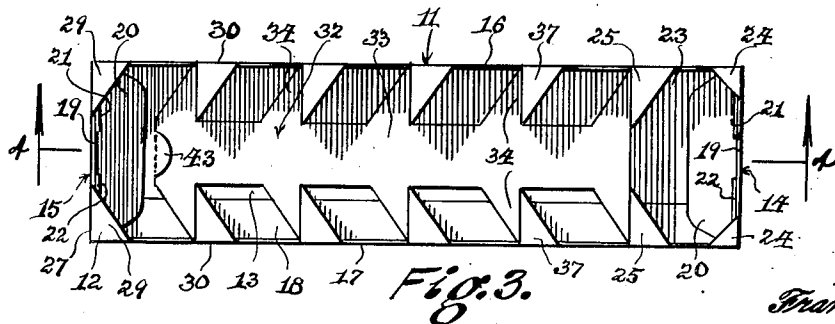
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2,759,652

ONE GANG MULTIPLE LIFT PARTITION BOX UNIT

Filed Jan. 11, 1952

3 Sheets-Sheet 1



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ONE GANG MULTIPLE LIFT PARTITION BOX UNIT

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3 Sheets-Sheet 2

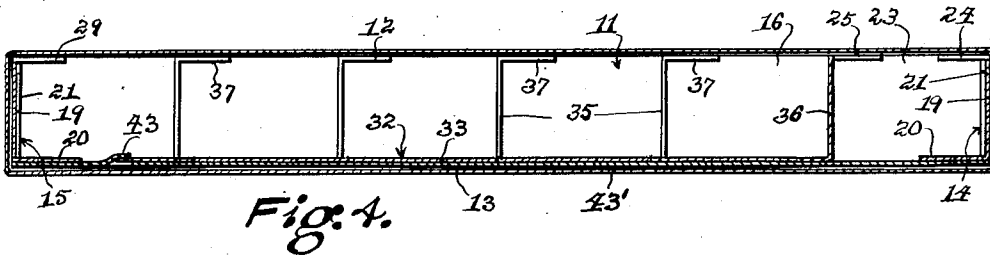


Fig. 4.

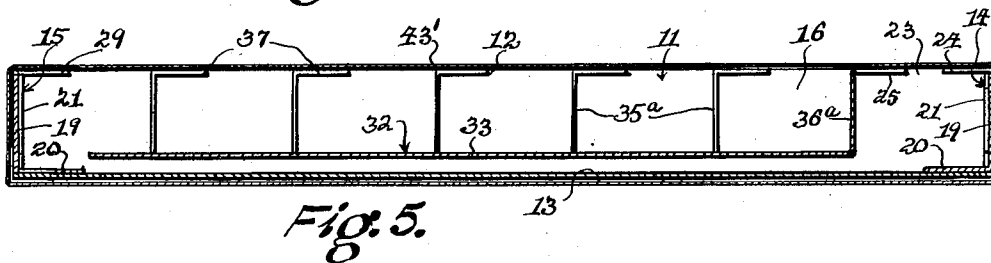


Fig. 5.

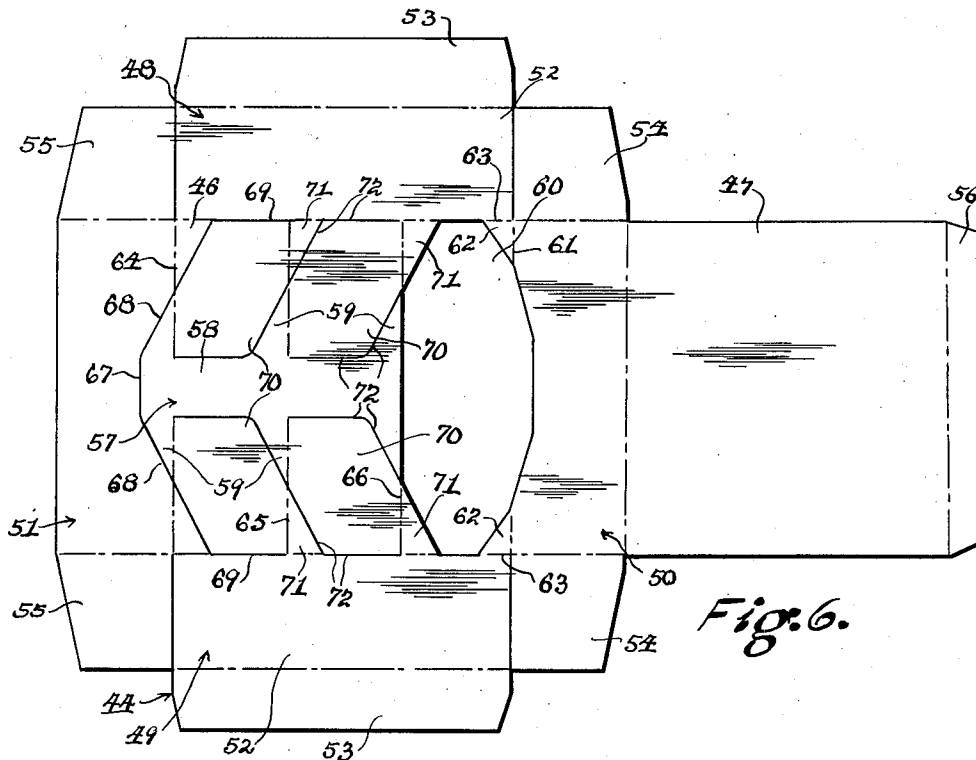


Fig. 6.

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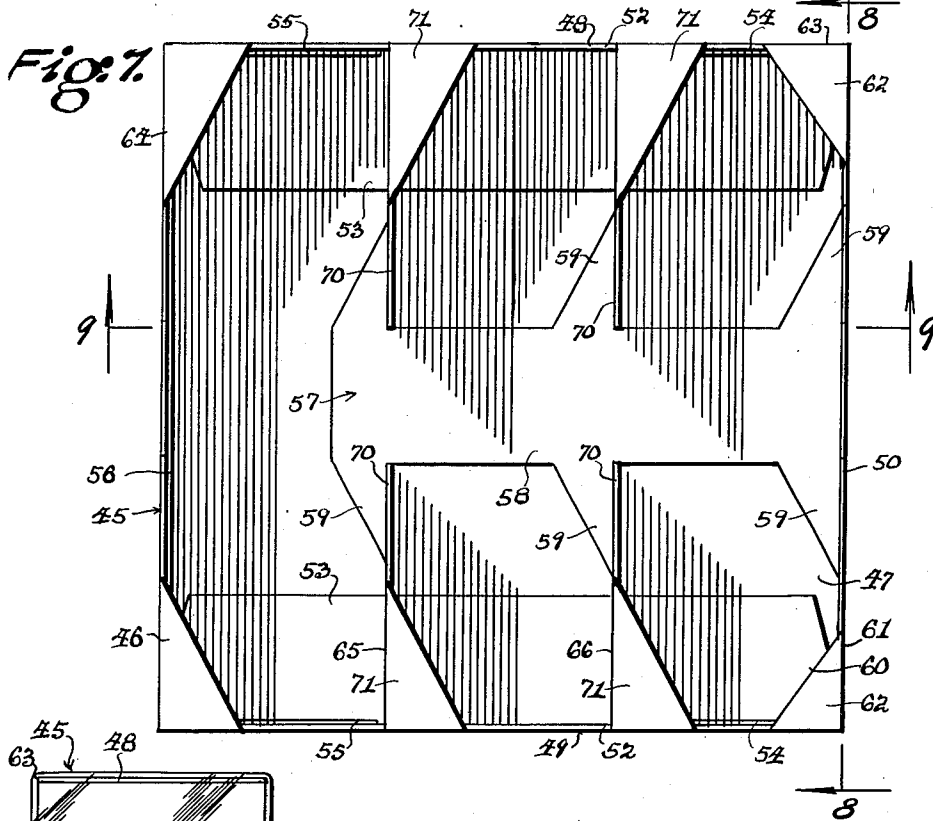
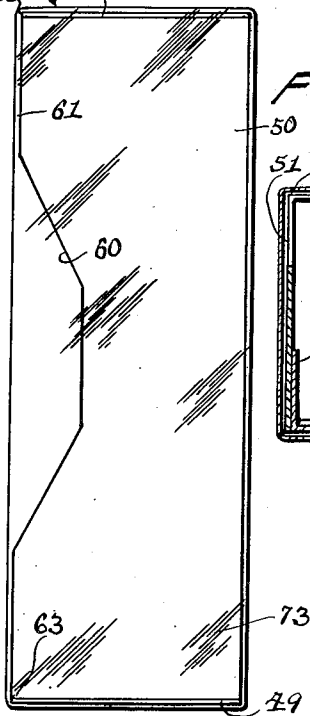
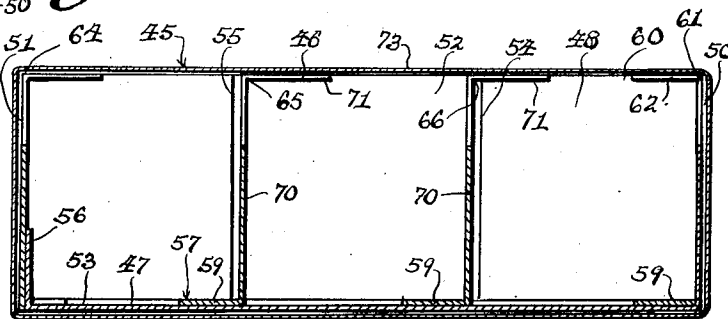
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ONE GANG MULTIPLE LIFT PARTITION BOX UNIT

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3 Sheets-Sheet 3



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1

2,759,652

ONE GANG MULTIPLE LIFT PARTITION BOX UNIT

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Application January 11, 1952, Serial No. 265,990

5 Claims. (Cl. 229—28)

My invention relates to a new and useful one gang multiple lift partition box unit and has for one of its objects to produce an exceedingly simple and highly efficient multiple partitioned box or container made of sheet material, such as cardboard or box-board, and so fashioned that the partitions, supports and stay are all fashioned from one wall of the box blank or the finished box structure.

Another object of the invention is to produce a box or container of bendable or foldable sheet material having a wall partially cut out to provide a one gang multiple lift partition structure which when pressed inwardly will form a plurality of partitions and a stay, and leave supports, said partitions being maintained in their operative positions by said supports and the stay which latter may be fastened in place in any desirable and well known manner, as by a tongue, an adhesive, staple or equivalents thereof.

Another object of this invention is to produce a box or container in which a plurality of partitions and their holding means are formed from one wall of the box structure in a unique manner, said partitions providing compartments in which individual articles, such as candy eggs, may be packed in separated relation for safe shipping and subsequently displayed to view and render attractive and readily vendible.

Another object of the present invention is to produce a box or container unit having fold lines to define front and back panels and border walls, which may constitute sides or ends, and said front panel having areas partially cut therefrom which, when lifted or set up, provides a plurality of partitions, substantially perpendicular to said front and back panels, supports and a stay, the latter being attached to the back panel to temporarily or permanently retain the partitions in place, certain of the border walls with the partitions and said partitions forming compartments open at the fronts for display of articles located in said compartments.

Another object of the invention is to so proportion the partition elements that the stay is spaced from the back panel and held in a hanging position by said partition element to function as a cradle.

A further object of this invention is to so proportion the elements of the one gang multiple lift partition structure that the greatest width of the openings between adjacent partitions is more than the depth of the completed box whereby said partition structure may be formed from the front panel only.

A still further object of the present invention is to so proportion the elements of the one gang multiple lift partition structure that the greatest width of the openings between adjacent partitions is the same and equal to the depth of the completed box, in which case a portion of said partition structure is formed from a contiguous border wall.

With the above and other objects in view this invention consists of the details of construction and combination

2

of elements hereinafter set forth and then designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same I will describe its construction in detail referring by numerals to the accompanying drawings forming a part hereof, in which:

Fig. 1 is a face view of a blank for producing one type of a one gang multiple lift partition box unit, the solid lines representing free edges and the dot and dash lines representing fold lines.

Fig. 2 is a perspective view of the box unit after the one gang multiple partition structure has been set up but prior to the end elements being folded in.

Fig. 3 is a front elevation thereof with the end elements folded into position.

Fig. 4 is an enlarged longitudinal section thereof on the line 4—4 of Fig. 3 with the wrapper thereon to close the box or container and hold articles in the compartments.

Fig. 5 is a similar view of a slight modification wherein the stay functions as a cushioning element or cradle.

Fig. 6 is a face view of a blank for producing a modified form or type of a one gang multiple lift partition box unit.

Fig. 7 is an enlarged face view of the box or container produced from the blank shown in Fig. 6.

Fig. 8 is an edge view thereof taken at the line 8—8 of Fig. 7 and with a covering thereon.

Fig. 9 is a section on the line 9—9 of Fig. 7 also with the covering in place.

In carrying out my invention as herein embodied, reference being had first to Figs. 1 to 5, inclusive, 10 represents a blank of cardboard, box-board or other suitable sheet material cut and scored so that when said blank is properly folded and fastened together a box or container 11 is produced comprising front and back panels 12 and 13 respectively and border walls 14, 15, 16 and 17. The border walls are substantially perpendicular to the front and back panels and comprise end or side walls and in some instances consist of a number of coacting parts. For example, the border walls 16 and 17 may be considered to be side walls and the latter may have a wing 18 connected therewith for securing the wall 17 to another part of the box, such as the back panel 13, as by an adhesive, and the opposed border walls 14 and 15 may be considered to be end walls, each including an end flap 19 hinged on the front panel, an extension flap 20 hinged on the end flap 19 and two side flaps 21, 22 hinged on the border walls 16, 17, respectively.

The front panel has a substantially octagonal oblong shaped opening 23 formed therein at one end thereof forming two opposite triangular corner braces 24 and the hypotenuse of each of two opposite triangular supports 25.

Beginning at the end of the front panel opposite the opening 23, said panel is partially severed by a transverse slit 26, Fig. 1, on the fold line 27 midway between the opposed border walls 16, 17 and divergent oblique slits 28 running from the ends of the slit 26 to approximately the side margins of the panel. These slits partially define the triangular corner braces 29 connected with the contiguous end flap 19 and the opposed contiguous side walls 16, 17, said corner braces being further defined by the fold line 27 between the front panel and the contiguous end flap and the fold lines 30 between said front panel and the side walls 16, 17. Also from the outer ends of the slits 28 run parallel slits 31 in the fold lines 30 as continuations of their respective oblique slits and extend a distance preferably equal to the depth of the completed box or the width of the border walls 16, 17.

A central stay 32 in the form of a "tree" including a

trunk 33 and oppositely disposed laterally projecting branches 34 as well as segmental partitions 35 and a solid partition 36 with their triangular supports 37, similar to the supports 25, are partially formed or defined by zig zag or Z-shaped slits 38, the inner leg of each of which forms the inner edge of a segmental partition, while the outer leg forms the outer edge of a succeeding partition and the oblique intermediate portion of each Z-shaped slit forms the hypotenuse of a triangular support 37. The outer legs of the Z-shaped slits 38 are in the fold lines 30 between the front panel and the border walls 16, 17.

The partitions 35 are further defined by the fold lines 39 extending from the terminal ends of the inner legs of the Z-shaped slits 38 to the margin extending from the angles, formed at the junctions of said inner legs with the oblique portions of said slits 38, to the margin of said front panel. Said fold lines 40 and the fold lines 30 also partially define the triangular supports 37.

In a similar manner the full partition 36 and the triangular supports 25 are further and partially defined by the transverse fold lines 41 and 42, the latter extending from one to the other of the side margins of the front panel.

From the foregoing it will be apparent that the construction provides a number of articulated partitions at opposite locations to the triangular supports and the branches of the stay so that when the stay and partition structure is lifted or said stay moved towards the back panel said partitions will be positioned substantially perpendicular to the front and back panels and held in place by the triangular supports and the stay. The stay may be secured to the back panel in any suitable manner, as by means of a tongue 43 produced by partially cutting a segment from said back panel so that the base end of said stay may be projected beneath said tongue. In lieu of the tongue some other fastening device may be employed or the stay pasted to the inner surface of the back panel as illustrated in Fig. 9.

By making the partitions 35a and 36a, Fig. 5, slightly shorter than the ones designated 35 and 36 the stay 32 will not contact the back panel but will be supported in a hanging condition to act as a cradle or cushion holder for articles in the compartments between partitions.

It is to be particularly noted that the distances between adjacent fold lines 39 on the same side of the longitudinal center of the box or its blank are greater than the depth of the completed box whereby the one gang multiple lift partition structure may be produced from one single panel or wall rather than from two contiguous panels as will be later described and illustrated in Figs. 6 to 9.

The openings above referred to constitute the entrances to the compartments provided by adjacent partitions or the endmost partitions and the adjacent parallel border or end walls and these entrances are formed by the displacement of the material making up the partitions and the branches of the stay 32. The one exception is the entrance to the head compartment which is provided by the complete cut-out opening 23.

In practice, the blank is stamped out in any well known manner and the resultant structure is folded and fastened to form the box or container after which, in desired order, the flaps are tucked in and the partially severed and articulated portion of the front panel is lifted or set up and the stay which contacts the back panel is secured in position. In the form of device shown in Fig. 5 the lifted elements are held in position by the articles placed in the compartments and coacting with the partitions.

The outside surface of the corner braces 24 and 29, and the supports 25 and 27 are utilized for the display of information setting forth the virtues of or other subject matter relating to the goods contained in the package.

After the articles are inserted in the compartments, the package is enclosed in a wrapper 43', Figs. 4 and 5, preferably, of transparent material, such as "Cellophane," and one layer thereof will function as a temporary closure

for the entrances to the compartments. If, as preferred, the wrapper is transparent the displayed matter and the goods will be visible to prospective customers which will enhance the salability of the packaged articles.

In the type of box or container illustrated in Figs. 6 and 9 the sheet material blank 44 is cut and scored so that when folded and fastened together a box or container 45 is produced. This type of box is comprised of a front panel 46, a back panel 47 and the border walls 48, 49, 50 and 51. The aforesaid border walls are substantially perpendicular to the front and back panels and comprise end or side walls. Some of these border walls consist of a number of coacting parts, for instance, the border walls 48 and 49 may each include a closure flap 52 hinged on the front panel, an extension flap 53 hinged on said closure flap and two side flaps 54, 55 hinged on the ends of the border walls 50 and 51, both of said border walls being hinged on the front panel.

The back panel 47 is hinged on the border wall 50 and said back panel has a wing 56 hingedly connected therewith whereby said wing may be folded and secured to another part of the box, such as the border wall 51, as by an adhesive.

Because the width of entrance openings to be formed and the height of the several partitions will be equal to the depth of the completed box, the base portion of the tree shaped stay 57 is formed from a portion of the material of the border wall 51 while the balance of said stay, including the trunk 58 and some of the branches 59, are produced from the front panel 46. The head end of the stay forms one of the margin edges of the polygon elongated head opening 60. One side of said head opening 60 may be cut along the fold line 61 but for purposes of symmetry a portion of the head opening may be cut from the border wall 50.

The formation of the head opening 60 provides the corner braces 62 between an edge of said opening and the fold lines 61 and 63.

In addition to the fold lines 61 and 64 joining the border walls 50 and 51, respectively, with the front panel, other fold lines 65 and 66 are provided intermediate and in parallelism with said fold lines 61 and 64. The base of the stay 57 is formed by the transverse slit 67 in the border wall 51 midway between the fold lines 63 and portions of the oblique slits 68 running from the opposite ends of said transverse slit 67 through said border wall 51 and portions of the front panel 46 to the side margins of the latter or the fold lines 63. From the outer ends of the oblique slits run other slits 69 in the fold lines 63 or along the side margins of the front panel and terminate at the adjacent intermediate fold line 65.

Segmental partitions 70 and their triangular supports 71 at directly opposite sides of the front panel and portions of the stay 57 are partially formed by the zig-zag or Z-shaped slits 72 directly opposite each other and spaced from and located on opposite sides of the longitudinal axis of the trunk of the stay 57. The inner leg of each Z-shaped slit begins at a transverse fold line, as 64, 65, and extends in a longitudinal straight line for a suitable distance, then outwardly in an oblique direction to one of the foldlines 63 and along said fold line to the adjacent transverse fold line, as 66, or to a free edge, as one edge of the opening 60.

Assuming that the blank is first folded to complete the preliminary receptacle formation of the box by joining the back panel 47 with one of the border walls, as wall 51, through the medium of the wing 56, and tucking in the various flaps, the multiple compartments may be produced by lifting or setting up the partially severed portion of the front panel until the stay contacts the inner surface of the back panel to which the stay is attached by a suitable adhesive or other suitable fastening means, such as the tongue 43, Fig. 3.

The setting up and securement of the stay swings the partitions 70 into the interior of the box and positions

5

them in perpendicular relation to the front and back panels, a set of partitions being located on both sides of the longitudinal center of said stay contiguous the border walls 52 with those partitions at one side directly opposite their counterparts on the other side. The partitions at each side of the box are in regular spaced relation to one another and the adjacent border walls 50 and 51 to provide compartments between them with entrances, Fig. 7, equal in width, longitudinally of the stay, to the height of the border walls or the depth of the box.

After the articles to be packaged are placed in the compartments, the box is enclosed in a wrapper 73, Figs. 8 and 9, of paper or other suitable material, preferably transparent, such as "Cellophane." The wrapper closes the entrances to the compartments and retains the articles in place.

As set forth in connection with the first described type of the device, the outer surfaces of the corner braces 46 and 62 and the supports 71 may be utilized for the display of advertising or other subject matter.

In addition to the fact that the base portion of the stay is produced from a wall other than the front panel, the outer lower edges of the partitions are of angular formation and in the completed box said edges slant upwardly from the back panel outwardly to adjacent border walls thus leaving spaces into which the extension flaps 53 may project so as to underlie the outer ends of the partitions as shown in Fig. 7.

From the foregoing it will be apparent that I have produced an exceedingly simple and highly efficient and unique type of box in which the partitions, the supports and stay therefor, and the corner braces are all fashioned from a single sheet of material as a one gang multiple lift partition structure wherein the various elements remain intact with one another and when set up provides a multiple compartmented box with entrances to the compartments located in the front panel of said box.

Of course I do not wish to be limited to the exact details of construction herein shown and described as these may be varied within the scope of the appended claims without departing from the spirit of my invention.

Having described my invention what I claim as new and useful is:

1. A quick set-up cardboard box comprising front and back panels, and side panels extending between and hinged to said front and back panels to connect said panels together for swinging movement between a collapsed substantially flat condition and set-up condition in parallel spaced relation, said front panel being cut and scored to define a plurality of longitudinally spaced supports extending laterally inwards in the plane of said front panel, a plurality of partitions each having one extremity connected by a fold to a respective one of said supports and swingable relative thereto against the inherent resilience of said fold from a collapsed position coplanar with said supports through and slightly beyond a set-up condition extending rearwards generally perpendicular to and having its opposite extremity in engagement with said back panel, and a single stay hingedly connected by a plurality of additional folds to all of said opposite partition extremities and swingable with said partitions against the inherent resilience of said first mentioned and additional folds from a collapsed condition coplanar with said partitions and supports through and slightly beyond a set-up condition seated on and in facing engagement with said back panel, said back panel being provided with a locking member located

6

to engage with said stay when the latter is released from its position beyond set-up condition to retain said stay and partitions in set-up condition against the resilience of said first mentioned and additional folds.

2. A quick set-up cardboard box according to claim 1, wherein said locking member is defined by an up-set, partially severed back panel portion adapted to receive there beneath a portion of said stay.

3. A quick set-up cardboard box according to claim 1, in combination with a pair of end walls on opposite ends of said front and back panels and side walls, the end wall adjacent to a distal one of said first mentioned folds being spaced from the latter, whereby the partition associated with said distal fold is adapted to be swung beyond its set-up condition without obstruction by the adjacent end wall.

4. A quick set-up cardboard box comprising front and back panels, side walls extending between the side margins of said front and back panels to connect the latter together in parallel spaced relation, and end walls extending between the end margins of said front and back panels and the end margins of said side walls, said front panel being cut and scored to define a plurality of generally parallel supports spaced longitudinally of said front panel and extending laterally inwards in the plane of said front panel, a plurality of partitions spaced longitudinally of said front panel in alternate relation with and each adjacent to a respective support and connected along its entire lateral extent to the adjacent support by a fold for swinging movement against the inherent resilience of said fold from a collapsed condition coplanar with the adjacent support through and slightly beyond a set-up condition extending rearwards generally perpendicular to and having its extremity remote from said fold in engagement with said back panel, and a single stay hingedly connected by a plurality of additional folds to all of said remote partition extremities and swingable with said partitions against the inherent resilience of said first mentioned and additional folds from a collapsed condition coplanar with said partitions and supports through and slightly beyond a set-up condition seated on and in facing engagement with said back panel, said back panel being cut to define a locking tongue located for engagement with said stay when the latter is released from its position beyond set-up condition to retain said stay and partitions in set-up condition against the resilience of said first mentioned and additional folds.

5. A quick set-up cardboard box according to claim 4, wherein the end wall adjacent to a distal one of said first mentioned folds is spaced from the latter, whereby the partition associated with said distal fold is adapted to be swung beyond its set-up condition without obstruction by the last mentioned end wall.

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