

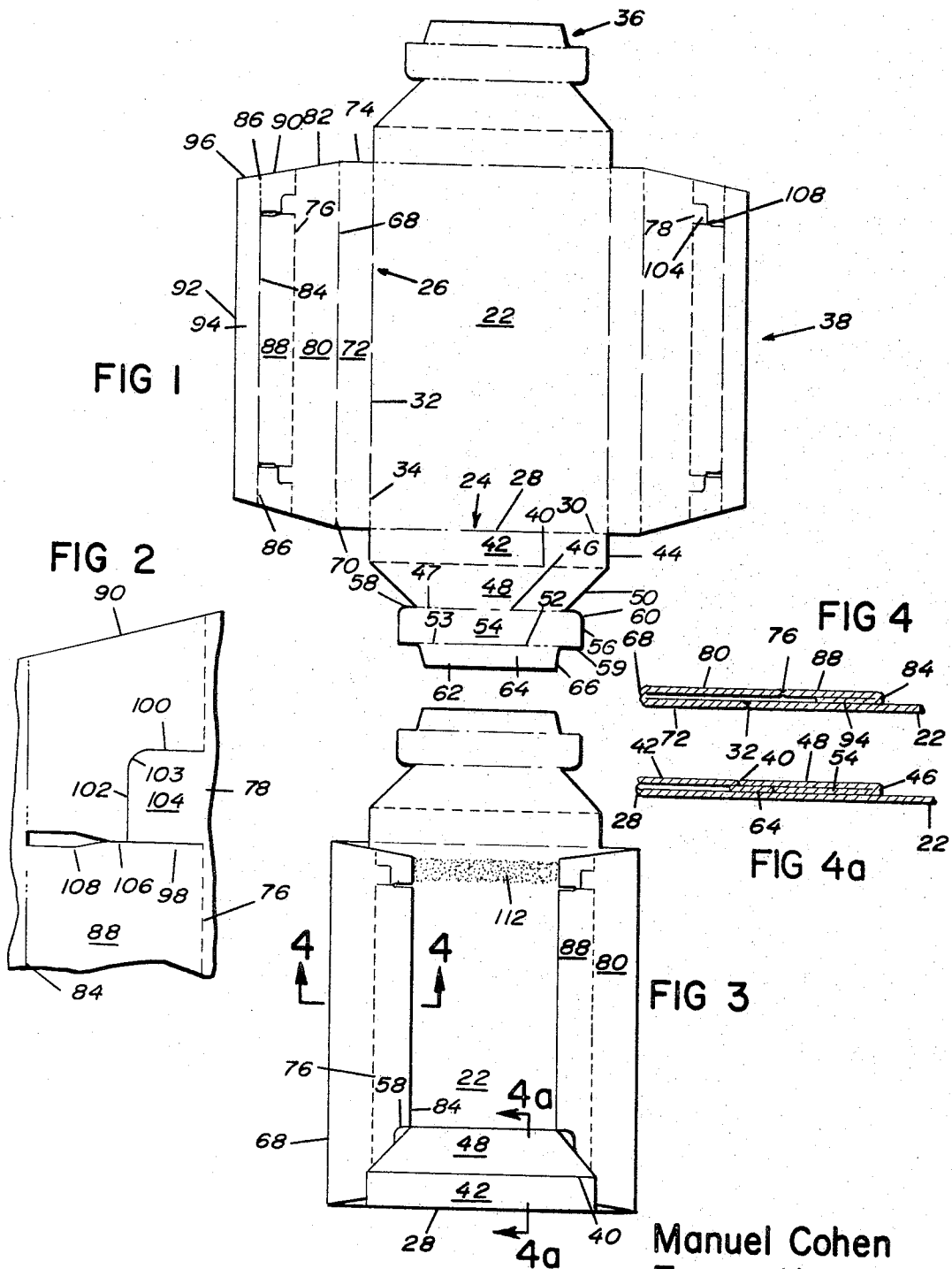
Aug. 15, 1967

M. COHEN ETAL
ERECTABLE DISPLAY CARTON

3,335,936

Filed Sept. 8, 1965

3 Sheets-Sheet 1



Manuel Cohen
Ernest Kronson
INVENTORS

BY *Lucas & Davidson*
ATTORNEYS

Aug. 15, 1967

M. COHEN ETAL
ERECTABLE DISPLAY CARTON

3,335,936

Filed Sept. 8, 1965

3 Sheets-Sheet 2

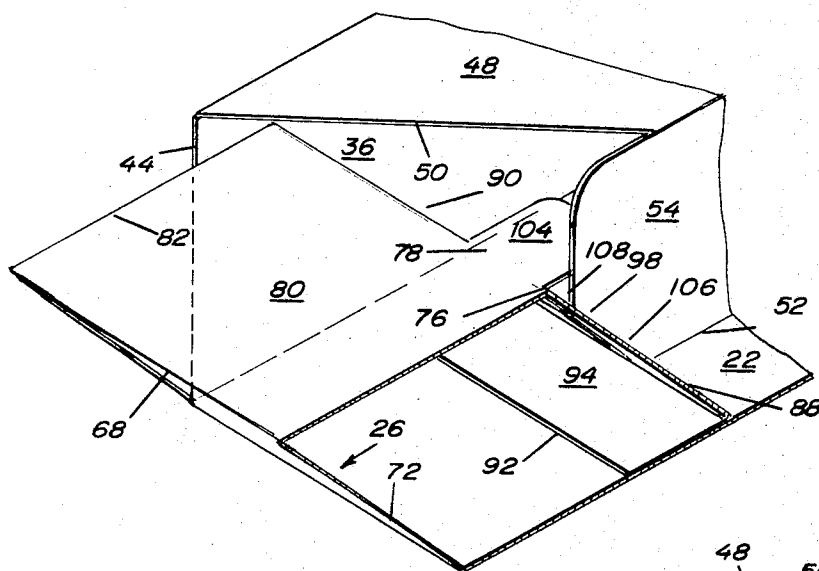


FIG 6

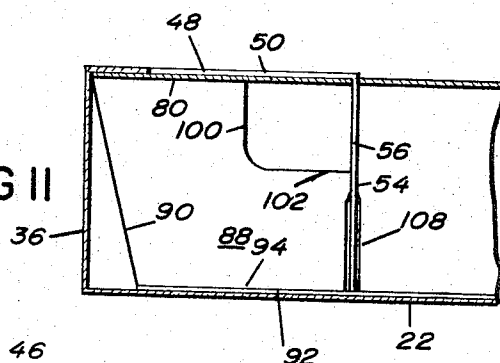


FIG II

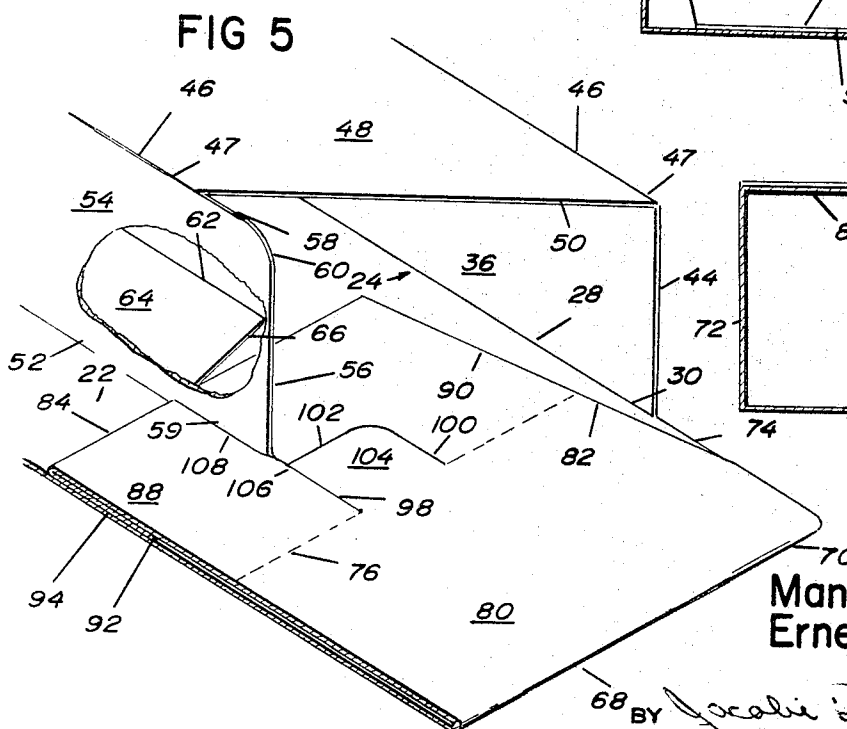


FIG 5

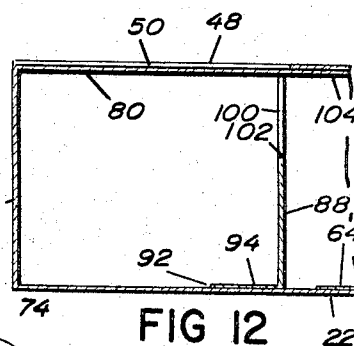


FIG 12

Manuel Cohen
Ernest Kronson
INVENTORS

68 BY *Joseph E. Dickinson*
ATTORNEYS

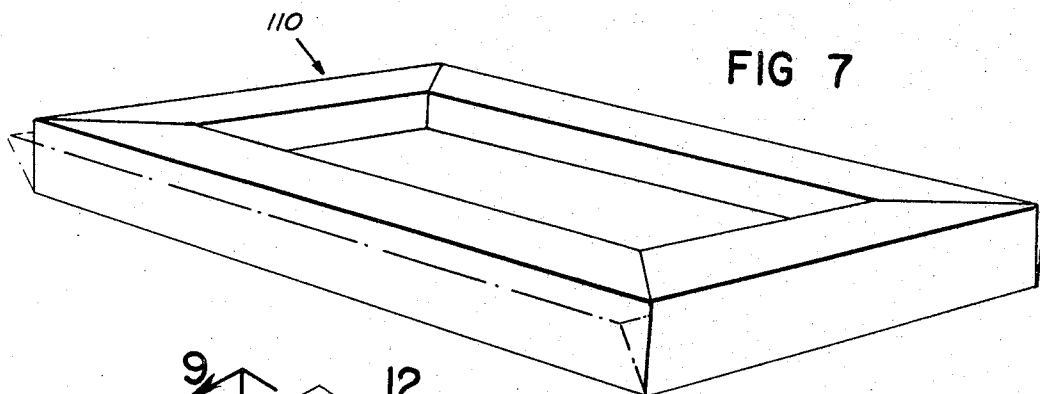
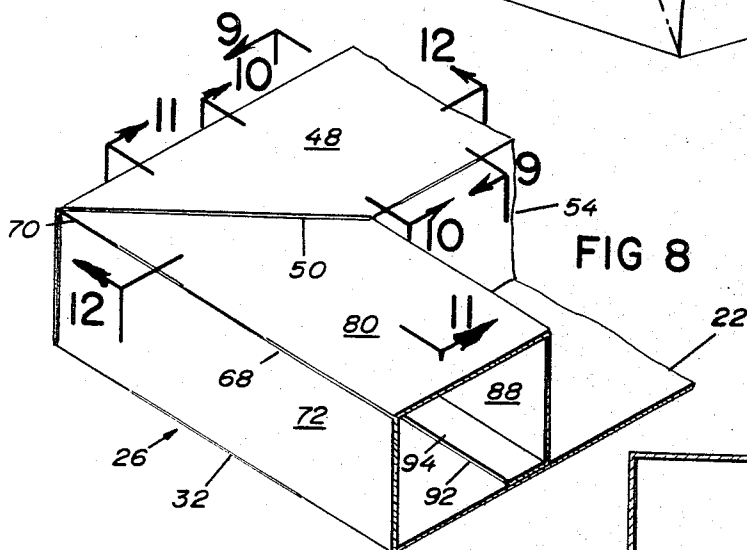
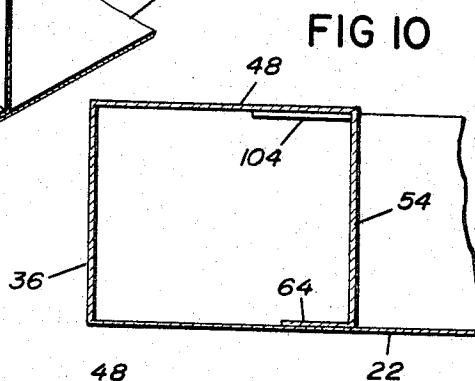
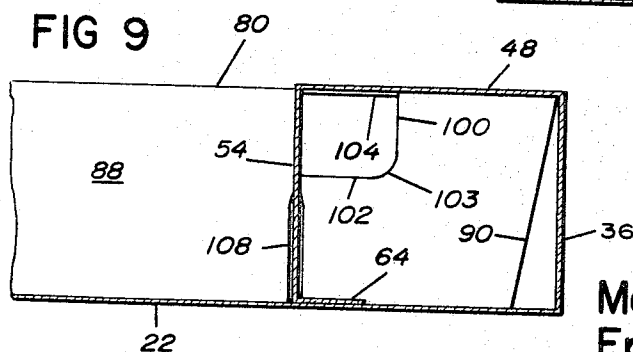
Aug. 15, 1967

M. COHEN ETAL
ERECTABLE DISPLAY CARTON

3,335,936

Filed Sept. 8, 1965

3 Sheets-Sheet 3



Manuel Cohen
Ernest Kronson
INVENTORS

BY *Frederic J. Davidson*
ATTORNEYS

1

3,335,936

ERECTABLE DISPLAY CARTON

Manuel Cohen and Ernest Kronson, Buffalo, N.Y., assignors to Wagner Folding Box Corporation, a corporation of New York

Filed Sept. 8, 1965, Ser. No. 485,755
12 Claims. (Cl. 229—34)

ABSTRACT OF THE DISCLOSURE

A manually erectable carton having a flat base wall and hollow tubular side walls and end walls. The carton can be flattened for shipment and handling, but when manual inward and upward pressure is applied to the hollow tubular side walls, the carton will become erected and the side walls and the end walls will interlock with one another.

This invention relates to cartons, and more particularly it relates to display cartons which are shipped and stored in a flattened or collapsed position, but which can be quickly and easily erected manually when the carton is to be used.

Display cartons of this type have been known for some time, and in general, such cartons provide an enlarged flat bottom wall surrounded by a series of hollow end walls and side walls which can be folded between a flattened position and an erected position. As such, the cartons are formed, and are shipped and stored in a flattened condition, i.e., with the hollow side walls and end walls being collapsed. However, when the carton is to be used, these hollow end and side walls are erected to an upright position, thereby establishing an upstanding border surrounding the base wall. An item to be sold in the carton, such as, a garment, is then placed upon the bottom wall within the upstanding border, and the entire unit can be overwrapped with a transparent wrapping, such as cellophane. It will thus be apparent that in a carton of this type, the item packaged therewithin can be readily observed by a prospective purchaser. Hence, such cartons are known in the art as display cartons.

Although, as aforesaid, cartons of this general character have been known in the art for some time, and in fact have been widely used in the trade, there are nevertheless certain deficiencies and drawbacks which keep such cartons from being entirely satisfactory. Generally, these deficiencies and drawbacks relate to the manner in which the carton is erected or "set up" and the manner in which the same is collapsed or "knocked down." This can, perhaps, be best understood by reference to typical prior art forms of construction, such as those shown in U.S. Patent No. 2,345,716, issued to M. A. Smith; U.S. Patent No. 2,399,649, issued to F. A. Marx; U.S. Patent No. 2,451,209, issued to W. P. Frankenstein, and U.S. Patent No. 2,893,622, issued to S. Fogel. Each of these prior patents relates to the same general form of display carton as that embodied in the present invention, but in each of these prior constructions, interfitting tongues and grooves, tabs and channels, and other forms of interlock are provided to maintain the carton in an erected condition. Naturally, the principal drawback with all of these prior cartons resided in the fact that difficult and time consuming manipulative steps were involved to erect and to collapse the carton. That is, the person erecting the carton had to manually fit tongues into grooves, tabs into channels, and to generally exert conscious care and effort to properly assemble and erect the carton. Then, if it were desired to collapse or knock down the carton, the same manipulative steps, care and effort had to be exerted.

In contrast to all of the foregoing, the present invention provides an improved form of erectable display carton

2

which does not require careful manipulative steps to erect or to collapse the same. Instead, the construction of the present invention provides an improved carton and a blank therefor which permits a user to erect the carton merely by manually squeezing the side walls thereof inward and upward. This accomplishes an "automatic" interlocking of the side walls and end walls, thereby locking the carton in its erected or set up position. Similarly, if it is desired for any reason to collapse the carton, the same can be accomplished merely by pushing outwardly and downwardly on the side walls of the carton. This "automatically" disengages the interlock between the end walls and side walls, thereby enabling the carton to be returned to its flattened or collapsed position. The advantages of a construction of this type should be immediately apparent. The carton can be erected extremely quickly and far more advantageously than those cartons known in the prior art. Only a fractional amount of time and manipulative steps are involved in erecting or collapsing the carton, and thus a user can assemble and complete several display packages of the type shown in the present invention in the time period previously required to erect and assemble only one such package.

With the foregoing explanation firmly in mind, it is, therefore, an object of the present invention to overcome the difficulties and deficiencies associated with prior art cartons of this type and to provide in their stead an improved form of erectable and collapsible hollow walled display carton.

Another object of the present invention is to provide an improved display carton and a blank from which the same can be manufactured inexpensively and efficiently.

Another object of the present invention is to provide an improved carton which can be readily and easily erected and/or collapsed with simple manual operations, and wherein the difficult and time consuming manipulative steps required in prior art forms of cartons are eliminated.

Other objects, advantages, and salient features of the present invention will become apparent from the following detailed description, which, taken in conjunction with the annexed drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

FIGURE 1 is a plan view of the blank from which the carton of the present invention is formed;

FIGURE 2 is an enlarged fragmentary plan view of a portion of the blank;

FIGURE 3 is a top plan view showing the blank partially transformed into a carton;

FIGURE 4 is a sectional view taken substantially along the line 4—4 of FIGURE 3;

FIGURE 4a is a sectional view taken substantially along the line 4a—4a of FIGURE 3;

FIGURE 5 is a fragmentary perspective view of a corner portion of the carton before the same is erected;

FIGURE 6 is a fragmentary perspective view of a corner of the carton as the same is in the process of being erected;

FIGURE 7 is a perspective view of the carton of the present invention in its erected condition;

FIGURE 8 is a fragmentary perspective view of a corner of the erected carton;

FIGURE 9 is a sectional view taken substantially along the line 9—9 of FIGURE 8;

FIGURE 10 is a sectional view taken substantially along the line 10—10 of FIGURE 8;

FIGURE 11 is a sectional view taken substantially along the line 11—11 of FIGURE 8; and

FIGURE 12 is a sectional view taken substantially along the line 12—12 of FIGURE 8.

Referring now to the drawings, and particularly to FIGURE 1 thereof, a blank generally designated 20 is provided, with such blank being fabricated of paper-board, cardboard, or other suitable fibrous material. The blank 20 includes a central base panel 22, in the form of a symmetrical quadrilateral, preferably of square or rectangular formation. As such, the panel 22 has a pair of opposed parallel end edges generally designated 24 which are interconnected to one another by a pair of opposed parallel side edges generally designated 26. Each end edge 24 concludes an elongated central score line portion 28 and terminating in end portions 30 which are folded, but unscored. Similarly, each side edge 26 includes an elongated central scored portion 32 terminating in end portions 34 which are folded, but unscored.

End panel means generally designated 36 project outwardly beyond the end edges 24 of the base panel 22, and similarly, side panel means generally designated 38 project outwardly beyond the side edges 26 thereof. When these end panel means and side panel means are properly folded, glued and configured, they convert the blank 20 into the carton forming the present invention. Various space division lines extend across the end panel means 36 in parallel relationship to the end edges 24 thereby dividing the end panel means into a series of interconnected end portions. Similarly, various spaced division lines extend across the side panel means 38 in parallel relationship to the side edges 26, thereby dividing the side panel means into a series of interconnected side portions. As used herein, the term "division line" is intended to comprehend score lines, fold lines, cut lines, other similar lines, and any combination thereof, whether continuous or discontinuous.

Referring now in greater detail to the end panel means 36, it will be seen that a division or fold line 40 is provided in spaced parallel relationship to the end edge 24, and the material therebetween defines an outer end wall 42. The lateral extremities of the outer end wall 42 are formed by opposed side edges 44 which extend substantially perpendicularly between the end edge 24 and the fold line 40. It can also be seen that the location of the side edges 44 are substantially coextensive with the side edges 26 of the base panel 22, and that the end wall 42 is thus rectangular in configuration.

Another division line in the form of a score line 46 is provided in spaced parallel relationship to the fold line 40, with a pair of folded unscored portions 47 being provided at opposite ends of the score line 46. The material between the fold line 40 and the score line 46 defines a top end wall 48. The top end wall 48 has lateral or side edges 50 which converge angularly inwardly from the ends of the fold line 40 to the fold line portions 47. As such, the top end wall 48 is formed with an overall trapezoidal configuration.

Another division line in the form of a score line 52 is provided in spaced parallel relationship to the score line 46, with folded but unscored portions 53 being provided at opposite ends of the score line 52. The score line 52 and end portions 53 are substantially coextensive with the score line 46 and end portions 47, and the material between them defines an inner end wall 54. The inner end wall 54 has opposed lateral or side edges 56 which are spaced outwardly from the score lines and end portions by means of upper and lower extension portions designated 58 and 59, respectively. The side edge 56 merges into the upper extension 58 by a smooth curve radial portion 60. The inner end wall 54 is thus substantially rectangular in configuration, but has a lateral dimension less than that of the outer end wall 42. An axis coincident with the side edge 56 would, if extended inwardly, intersect the side edge 50 between the ends thereof.

Finally, the end panel means 36 is provided with an outer edge 62 spaced in parallel disposition beyond the score line 52 with the material therebetween defining an end glue flap 64. The lateral or side edges 66 of the

glue flap converge angularly inwardly from the point of juncture between the portions 53 and 59, and merge into the outer edge 62. Thus, the glue flap 64 is also formed with a generally trapezoidal configuration and is smaller in lateral dimension than the inner end wall 54.

Referring to the side panel means 38, it will be seen that a division line in the form of an elongated score line 68 having unscored but folded end portions 70 is provided in spaced parallel disposition to the side edge 26 of the base panel 22. The length of the score line portion 68 and unscored portion 70 are substantially equivalent to the length of the score line 32 and unscored portions 34. The material therebetween defines an outer side wall 72 having lateral or side edges 74 which extend substantially perpendicularly between the ends of the portions 34 and 70. It will also be seen that the location of the side edges 74 are substantially coextensive with the end edges 24 on the base panel 22 and that the outer side wall 72 is thus rectangular in configuration.

Another division line in the form of a fold line 76 is provided in spaced parallel relationship to the score line 68, with the fold line being provided with two unfolded portions 78 spaced equidistantly inward from the ends thereof. The material between the fold line 76 and the score line 68 and end portions 70 defines a top side wall 80. The lateral extremities of the top side wall 80 are formed by lateral or side edges 82 which, at least in part, converge angularly toward one another and hence toward the ends of the fold line 76.

Another division line in the form of a score line 84 having end portions 86 which are folded, but unscored, is provided in spaced parallel relationship to the fold line 76, and the material therebetween defines an inner side wall 88. The inner side wall 88 has lateral or side edges 90 which converge toward one another and are coextensive with the side edge portions 82 on the wall 80. Thus, the inner side wall 88 is trapezoidal in configuration.

Finally, the side panel means 38 terminates in an outer edge 92 located in spaced parallel relationship beyond the score line portion 84, with the material therebetween defining a side glue flap 94. The glue flap 94 has lateral or side edges 96 which are coextensive with the side edges 90 of the side wall 88, and which thus converge angularly toward one another. The glue flap 94 is thus formed with a trapezoidal configuration of smaller lateral dimension than the inner side wall 88.

Referring again to the inner side wall 88, it will be seen that cuts 98 and 100 extend perpendicularly outward from the edges of the unfolded portion 78. At a point somewhat intermediate the height of the inner side wall 88, a transverse cut 102 extends perpendicularly from the cut 98 and merges via a radius 103 into the cut 100. These cuts 98, 100, 102 and 103 serve to set off and define a tab or flap 104 which remains attached or appended to the blank 20 by means of the unfolded portion 78. As shown in FIGURE 2, the cut 98 continues beyond the cut 102, to form a cut portion designated 106. This cut portion emerges into an elongated opening 108 which extends downwardly to the fold line portion 86 at each end of the score line 84.

Having now described the blank 20, and its manner of construction, there will now be described the manner in which the blank 20 is converted into the carton of the present invention, which is generally designated 110. The side walls are folded along the division line 68, as shown in FIGURES 3 and 4, to thus bring the portions 80 and 88 to overlying relationship to the portion 72 and the central panel 22. Then, the glue flaps 94 are folded under the panel 88 and are directed back outwardly, so that such glue flaps are actually sandwiched between the walls 88 and 22, as shown in FIGURE 4. A suitable adhesive 112 is then applied either to the glue flap 94, to the base panel 22 or therebetween, and in this manner the glue flap becomes adhered to the base wall. As shown

in FIGURES 4 and 5, when the side walls of the carton have been assembled in this manner, the outer side wall 72 is substantially coplanar with the central base wall 22 and the top and inner side wall portions 80 and 88 are in substantially coplanar relationship with one another, in superposed juxtaposition thereabove.

After the side walls have been properly assembled, the end walls are then folded along the fold line 28, so that the wall portions 42 and 54 extend inwardly. The glue flap 64 and inner end wall portion 54 is then folded under panel 48 along score line 46 and is suitably adhered to the base wall 22 by the adhesive 112. In FIGURE 3, one of the end walls is shown assembled in this manner, while the other end wall has not yet been so assembled.

When the end walls have been connected in this manner, it will be seen that the other end portion 42 is substantially coplanar with the top end wall 48, and that the top and inner end wall portion 54 is then folded under panel 48 along score line 46 and is suitably adhered to the base wall 22 by the adhesive 112. In FIGURE 3, one of the end walls is shown assembled in this manner, while the other end wall has not yet been so assembled.

After the cartons are fully assembled in the manner partially shown in FIGURE 3, they are customarily assembled into stacked packages with the carton in its flattened or collapsed condition, and such stacked packages are sent to the ultimate user. When the user removes the bindings on such a stack package, and selects a flattened carton therefrom the end walls and side walls remain in their flattened condition. The user can then through manual operation, erect the carton to the final position shown in solid lines in FIGURE 7 as will be described in detail hereinafter, manual erection causes the carton end wall and side walls to move from their flattened condition to an upstanding position whereat the inner and outer end and side walls will be in substantially perpendicular relationship to the base wall 22.

To then erect the carton, the user applies one or more fingers along the division line 68, as shown in dotted lines in FIGURE 5, and he then pushes in a generally inward and upward direction, as indicated by the arrow. When this occurs, the side wall means moves from the flattened position of FIGURE 5 toward an upright or erected position. As such side walls means has moved partially to its erected position, in the manner shown in FIGURE 6, it will be noted that the tab 104 lifts out of the plane of the inner side wall 88, and remains coplanar with the top side wall 80. This is due to the fact that the presence of the fold line 76 causes the walls 80 and 88 to move from their previously parallel relationship to an ultimate perpendicular relationship. However, since the score line 76 is interrupted at 78, the point of appendage of the tab 104, such tab thereby remains coplanar with the top side wall portion 80. The user continues to squeeze the side wall means inwardly toward one another, in the manner shown in FIGURE 7, until the carton 112 is ultimately erected. In such ultimately erected position, the side wall means as well as the end wall means, are in upright or erected position and the inner end outer side walls 88 and 72 are in perpendicular relationship to the base wall 22, as shown in FIGURE 8.

To specifically understand the exact steps involved in erection of the carton, as well as the manner in which the interlock occurs to maintain the carton in its erected position, it will first be noted, as shown in FIGURES 5 and 6, that the extending end portions of the inner end wall 54 project into the elongated openings 108 in the inner side wall 88. As the side wall is erected, the side edge 56 on the inner end wall fits within the cuts or slits 106 and 98, thereby enabling the tab 104 to fit behind the inner end wall 54 and beneath the top end wall 48. In this position, as shown in FIGURES 9 and 10, the tab locks behind the division lines 46 and 47, thereby firmly inter-

locking and interconnecting the end wall and side wall means. However, it will be noted that the tab enters this position in a fully automatic manner, and it is in no way necessary for the user to manually attempt to insert the tab into this position. Because the side edges 82, 90 and 96 on the side wall means gradually taper inwardly, there is no chance that such side edges will inadvertently contact and bind against the side edge 44 on the outer end wall means during erection of the carton and, accordingly, the side wall means can be lifted to their upright position simply and easily.

The sectional views shown in FIGURES 11 and 12 clearly indicate how the top side wall 80 fits beneath the top end wall 48 at the corners, thereby assuring that the carton 110 will have a strong and durable construction, and that the same will be relatively crush-proof. Assuming now that for some reason it becomes desirable to disassemble or collapse the carton 110, this can be accomplished merely by manually pushing outwardly and downwardly along the fold line 76 extending across the side walls. In this manner, the top side wall 80 will move out from beneath the top end wall 48, the tab 104 will become disengaged from behind the inner end wall 54, and the side walls can be returned to their flattened position. Then, if desired, the end walls can again also be pressed to their flattened or collapsed condition. As a result of this simplified and unique improved construction, it will be recognized that the carton 110 lends itself to extremely rapid and simple techniques of erection and collapse, and that the same thus represents a new, useful and unobvious advance over the complicated and cumbersome cartons known in the prior art.

After reading the foregoing detailed description, it will be apparent that the objects set forth at the outset of the specification have been successfully achieved by the present invention. Accordingly,

What is claimed is:

1. A blank for forming an easily erectable carton, said blank comprising:
 - a central panel in the form of a symmetrical quadrilateral having opposed parallel side edges and opposed parallel end edges;
 - end panel means connected with said central panel and projecting outwardly from said end edges;
 - said panel means connected with said central panel and projecting outwardly from said side edges;
 - each of said end panel means having at least three spaced division lines extending thereacross in parallel relationship to an end edge, thereby separating said end panel means into four interconnected end panel portions defining, in outward arrangement from said end edge, first, second, third and fourth end portions;
 - said first end portion having lateral edges coextensive with said central panel side edges and thus being rectangular in configuration;
 - said second end portion having lateral edges converging angularly inward toward each other to thus create a trapezoidal configuration;
 - said third end portion having lateral edges generally parallel to those of said first end portion, but spaced inwardly therefrom to thus create a generally rectangular configuration having a lateral dimension less than that of said first end portion;
 - said third end portion lateral edges being disposed that axes extended therefrom would intersect said second end portion lateral edges between the ends thereof;
 - said fourth end portion having lateral edges spaced inwardly from said third end portion lateral edges thereby assuring that said fourth end portion has a lateral dimension less than that of said third end portion;
 - each of said side panel means having at least three spaced division lines extending thereacross in parallel

relationship to a side edge, thereby separating said side panel means into four interconnected side panel portions defining, in outward arrangement from said side edge, first, second, third and fourth side portions; said first side portion having lateral edges coextensive with said central panel end edges and thus being rectangular in configuration; said second side portion having lateral edges which at least partially converge angularly inward toward each other; said third side portion having lateral edges coextensive with said second side portion lateral edges and to thus create a trapezoidal configuration; said fourth side portion having lateral edges coextensive with said third side portion lateral edges to thus create a trapezoidal configuration smaller than that of said third side portion; said third side portion having a pair of tabs formed therein, each of said tabs being equally spaced inward from a lateral edge thereof; said tabs being defined by three interconnected cut lines which separate side tabs from said third side portions, said tabs remaining appended thereto by a connected edge coincident with one of said side division lines; said first side and end portions serving, respectively, to define the outer side and end walls of the carton ultimately erected from said blank; said second side and end portions serving, respectively, to define the upper side and end walls of the carton ultimately erected from said blank; said third side and end portions serving, respectively, to define the inner side and end walls of the carton ultimately erected from said blank; and said fourth side and end portions, serving, respectively, to define the side and end glue flaps of the carton ultimately erected from said blank.

2. A blank as defined in claim 1 wherein said third side portions include an elongated opening aligned with the laterally innermost cut lines defining said tabs.

3. A blank as defined in claim 1 wherein said central panel side edges and end edges each are formed by central scored portions terminating at their ends in unscored fold line portions.

4. A blank as defined in claim 3 wherein said end panel means division line nearest said end edge is a fold line and wherein said other end panel means division lines are elongated central score lines terminating at their ends in unscored fold line portions.

5. A blank as defined in claim 3 wherein said panel means division lines nearest and farthest from said side edge are elongated central score lines terminating at their ends in unscored fold line portions and wherein said division line intermediate said nearest and farthest lines is a fold line which is interrupted where said tabs are appended.

6. An easily erectable display type carton comprising: a flat symmetrical quadrilateral base wall having opposed parallel side edges and opposed parallel end edges; hollow tubular side wall means connected to said base wall along said side edges and being manually foldable to a flattened position and to an erected position; said hollow tubular side wall means including an outer side wall portion foldably connected to said base wall, a top side wall portion foldably connected to said outer side wall, an inner side wall portion foldably connected to said top side wall and a side glue flap portion foldably connected to inner side wall portion; said side glue flap portion being adhered to said base wall in spaced relation from its side edge with the terminal edge of said side glue flap portion being disposed closer to said base wall side edge than is

the edge of said side glue flap portion foldably connected to said inner side wall;

said tubular end wall means, when disposed in said flattened position, having said inner end wall portion substantially coplanar with said glue flap portion and having said top and outer end wall portion superposed thereabove in a substantially planar manner;

said tubular side wall means, when disposed in said erected position, having said inner and outer side wall portions extending substantially perpendicularly upward from said base wall and having said top side wall thus disposed in spaced substantially parallel juxtaposition above said base wall;

hollow tubular end wall means connected to said base wall along said end edges and being manually foldable to a flattened position and to an erected position;

said hollow tubular end wall means including an outer end wall portion foldably connected to said base wall, a top end wall portion foldably connected to said outer end wall, an inner end wall portion foldably connected to said top end wall and an end glue flap portion foldably connected to inner end wall portion;

said end glue flap portion being adhered to said base wall in spaced relation from its end edge with the terminal edge of said end glue flap portion being disposed closer to said base wall end edge than is the edge of said end glue flap portion foldably connected to said inner end wall;

said tubular end wall means, when disposed in said flattened position, having said outer end wall portion substantially coplanar with said base wall and having said top and inner end wall portion superposed thereabove in a substantially planar manner;

said tubular end wall means, when disposed in said erected position, having said inner and outer end wall portions extending substantially perpendicularly upward from said base wall and having said top end wall thus disposed in spaced substantially parallel juxtaposition above said base wall;

said outer end wall portion extending substantially the distance between said base wall side edges;

said inner end wall portion having its ends spaced inwardly from said base wall side edges;

said top end wall portion connecting to the ends of said outer end wall portion but connecting inwardly of the ends of said inner end wall portion to thus define extending end areas on said inner end wall;

said inner side wall portion having an elongated opening means therein in generally parallel relationship to said base wall end edge and in alignment with said inner end wall portion whereby, when said carton is erected, said inner end wall portion extending end area will pass through said opening means to interlock said inner side and end wall portions; and tab means projecting inwardly from said side wall means to pass behind said inner end wall portion and beneath said top end wall portion, thereby preventing inadvertent collapse of the carton once the same has been erected.

7. A carton as defined in claim 6 wherein said tab means is formed in said inner side wall portion, but remains in integral and unfolded attachment to said top side wall portion, whereby when said tubular side wall means is erected, said tab means will remain substantially coplanar with said top side wall portion.

8. A carton as defined in claim 6 wherein said opening means includes an elongated narrow aperture extending from the intersection of said side glue flap and inner wall portions and partially through said inner side wall portion, said elongated narrow aperture merging into a slit which extends to the intersection of said inner and top side wall portions.

9

9. A carton as defined in claim 8 wherein, when said tubular end wall means is erected and said tubular side wall means are flattened, said extending end area on said inner end wall portion projects at least partially into said elongated narrow aperture.

10. A carton as defined in claim 8 wherein a second slit is formed in said inner side wall portion in spaced parallel relation to said slit, and wherein a transverse slit extends between said slit and second slit, said slit, second slit and transverse slit defining said tab means.

11. A carton as defined in claim 8 wherein the upper corner of said extending end area is radially rounded to facilitate entry of said inner end wall portion into said opening means.

10

12. A carton as defined in claim 6 wherein said top and inner side wall portions have edges which angle at least partially inward to prevent accidental binding against the edges on said end wall means when said carton is erected.

References Cited

UNITED STATES PATENTS

2,345,716	4/1944	Smith	-----	229—34
2,996,175	8/1961	Frankenstein	-----	229—34

JOSEPH R. LECLAIR, *Primary Examiner.*

R. PESHOCK, *Assistant Examiner.*